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The Continental Shelf beyond 200 NM: Law and Politics in the Arctic Ocean

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The Continental Shelf beyond 200 NM: Law and Politics in the Arctic Ocean

Cover Page Footnote

Symposium: Arctic Law in an Era of Climate Change

THE CONTINENTAL SHELF BEYOND 200 NM: LAW AND POLITICS IN THE ARCTIC OCEAN

TED L. MCDORMAN*

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I. INTRODUCTION

The reports on the effects of global climate change have regularly highlighted the apparent decrease in ice cover in the Arctic Ocean Basin in recent years and the probability of the decrease becoming more pronounced in the future.¹ Amongst other things, this has brought world attention to the possibilities for and consequences of vessel navigation in Arctic waters and energy resource exploration and exploitation in the Arctic Ocean. These issues and concerns are not new to the States that border the

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1. See generally SUSAN JOY HASSOL, *IMPACTS OF A WARMING ARCTIC: ARCTIC CLIMATE IMPACT ASSESSMENT* (2004), available at <http://www.amap.no/acia/index.html> (click on link labeled "Impacts of a Warming Arctic: Arctic Climate Impact Assessment").

central Arctic Ocean—Canada, Denmark/Greenland, the Russian Federation, the United States, and Norway (Spitsbergen)—but the attention and real possibility of increased activity in the Arctic Ocean has resulted in greater priority being given to these issues in all of the five States.

The focus of this article is the seafloor in the Arctic Ocean Basin. More specifically, this article will look at the continental margin areas beyond 200-n. miles, adjacent to the littoral States in the central Arctic Ocean. In this regard, the law and politics in the Arctic Ocean are about the existence and interpretation of scientific information that support a State's claim to specific areas of the continental margin beyond 200-n. miles and the maritime boundaries, either between States that have overlapping claims or between a single State and the International Seabed Authority (ISA), that will delineate the areas of national authority in the Arctic Ocean. It is worth noting that, except for the difficult climatic conditions, scarcity of scientific information, and the public's attention on Polar matters, the legal and political issues are little different than what exists in many other areas of the world.

The media narrative respecting the seafloor in the Arctic Ocean is that the bordering States are desperately scrambling to assert claims in order to eventually reap the anticipated bonanza of hydrocarbon wealth in the seafloor and that the Arctic Ocean is an area of serious conflict amongst the central Arctic Ocean States. The media narrative is regularly fed by commentators who have a genuine concern that not enough governmental attention is being given to the Arctic and who understand that without appeals to urgency and energy resources other Arctic concerns such as environmental protection and security may slip from national and international funding and political agendas. Finally, note has to be made of the depositing of a Russian flag on the seafloor at the North Pole in early August 2007 by two mini-submarines, largely funded by a Russian parliamentarian,² an exceptional publicity event which encouraged the media narrative of conflict and sovereignty assertion respecting untold energy riches in the Arctic Ocean.

While over-hyped in the media, there is the possibility of hydrocarbon and other energy resources existing in the seafloor of the Arctic Ocean. A 2008 Fact Sheet relating to a report from the

2. C.J. Chivers, *Russia Plants Flag on the Sea Floor at North Pole*, N.Y. TIMES, Aug. 2, 2007, http://www.nytimes.com/2007/08/02/world/europe/02iht-north.4.6961826.html?_r=1&scp=1&sq=russia%20plants%20flag%20on%20the%20sea%20floor&st=cse.

U.S. Geological Survey contained the following news bites:

- The extensive Arctic continental shelves may constitute the geographically largest unexplored prospective area for petroleum remaining on Earth; and
- approximately 84 percent of the undiscovered oil and gas [in the area above the Arctic Circle] occurs offshore.³

What the maps in the Fact Sheet reveal is that most of the offshore areas with the highest probability for the discovery of hydrocarbons (oil or natural gas) are well within the national jurisdiction of Arctic Ocean littoral States and that the areas beyond 200-n. miles in the Arctic Ocean Basin are not seen as having a high or even middling probability for the recovery of hydrocarbon resources.⁴ The Fact Sheet further notes that the methodology used to reach its conclusions was not the usual one employed since there is “sparse seismic and drilling data in much of the Arctic.”⁵

Regarding the most promising offshore hydrocarbon areas, four of the Arctic States (Canada, Denmark/Greenland, the Russian Federation and the United States) have claimed and delineated 200-n. mile exclusive economic zones (EEZs) in the central Arctic Ocean.⁶ Norway has claimed a 200-n. mile Fisheries Protection Zone adjacent to Spitsbergen.⁷ As a result of the 1920 Spitsbergen Treaty,⁸ there are issues respecting the rights of Norway and other

3. U.S. GEOLOGICAL SURV., CIRCUM-ARCTIC RESOURCE APPRAISAL: ESTIMATES OF UNDISCOVERED OIL AND GAS NORTH OF THE ARCTIC CIRCLE: FACT SHEET 2008-3049 at 1, 4 (2008), available at <http://pubs.usgs.gov/fs/2008/3049/fs2008-3049.pdf>.

4. See *id.* at 2-3.

5. *Id.* at 1.

6. See U.S. DEP'T OF DEF., MARITIME CLAIMS REFERENCE MANUAL 96, 167, 489, 646, (2005), available at <http://www.dtic.mil/whs/directives/corres/html/20051m.htm>. See generally Robin R. Churchill, *Claims to Maritime Zones in the Arctic—Law of the Sea Normality or Polar Peculiarity?*, in THE LAW OF THE SEA AND POLAR MARITIME DELIMITATION AND JURISDICTION 105-24 (Alex G. Oude Elferink & Donald R. Rothwell eds., 2001).

7. See U.S. DEP'T. OF DEF., *supra* note 6, at 428. See generally Geir Hønneland, *Fisheries in the Svalbard Zone: Legality, Legitimacy and Compliance*, in THE LAW OF THE SEA AND POLAR MARITIME DELIMITATION AND JURISDICTION, *supra* note 6, at 321-23 (setting out the details regarding this Zone, which includes non-enforcement by Norway).

8. Treaty Concerning the Archipelago of Spitsbergen, done Feb. 9, 1920, 2 L.N.T.S. 7 [hereinafter Spitsbergen Treaty]. See Torbjørn Pedersen, *The Svalbard Continental Shelf Controversy: Legal Disputes and Political Rivalries*, 37 OCEAN DEV. & INT'L L. 339, 341-47 (2006); D.H. Anderson, *The Status Under International Law of the Maritime Areas Around Svalbard*, 40 OCEAN DEV. & INT'L L. (forthcoming 2009). See generally A.N. VYLEGZHANIN & V.K. ZILANOV, SPITSBERGEN: LEGAL REGIME OF ADJACENT MARINE AREAS (William E. Butler

States within the maritime areas adjacent to Spitsbergen and it has been noted that the Norwegian 200-n. mile zone has not been recognized by other States with fishing interests in the area.⁹

Again, while over-hyped in the media, there are overlapping national claim disputes in the central Arctic Ocean, both within 200-n. miles and beyond, involving: Canada and the United States in the Beaufort Sea,¹⁰ Canada and Denmark/Greenland in the Lincoln Sea,¹¹ Denmark/Greenland and Norway (Spitsbergen) in the northern Greenland Sea,¹² and Norway (Spitsbergen) and the Russian Federation in the northern part of the Barents Sea.¹³ It is highly likely that overlapping continental margin claims will exist between the Russian Federation and both Denmark and Canada in the central Arctic Ocean. There are only two bilateral maritime boundary agreements in the central Arctic Ocean area: the 1990 U.S.-Russia Agreement, which has not entered into force,¹⁴ and the 2006 Denmark/Greenland-Norway (Spitsbergen) Agreement that deals only with the 200-n. mile zone.¹⁵ Respecting the Russian flag event, the other Arctic States did not see it as being of significant consequence. The Canadian Foreign Minister commented, "You can't go around the world these days dropping a flag somewhere. This isn't the 14th or 15th century."¹⁶ A legal adviser to the Danish Foreign Ministry is quoted as saying, "We note . . . [the Russian flag event] with a smile It's more a media stunt than

ed. & trans., 2007).

9. Hønneland, *supra* note 7, at 321-25; *see also* Pedersen, *supra* note 8, at 345-47.

10. *See* David H. Gray, *Canada's Unresolved Maritime Boundaries*, Vol. 48 No. 2 GEOMATICA 131, 135 (1994); TED L. MCDORMAN, SALT WATER NEIGHBORS: INTERNATIONAL OCEAN LAW RELATIONS BETWEEN THE UNITED STATES AND CANADA 181-190 (2009).

11. *See* Gray, *supra* note 10, at 138; Alex G. Oude Elferink, *Arctic Maritime Delimitations: The Preponderance of Similarities with Other Regions*, in THE LAW OF THE SEA AND POLAR MARITIME DELIMITATION AND JURISDICTION, *supra* note 6, at 194-95; Donat Pharand, *Delimitation Problems of Canada (Second Part)*, in THE CONTINENTAL SHELF AND THE EXCLUSIVE ECONOMIC ZONE 171, 179 (Donat Pharand & Umberto Leanza eds., 1993).

12. Oude Elferink, *supra* note 11, at 195.

13. *Id.* at 185.

14. Agreement on the Maritime Boundary, U.S.-U.S.S.R., June 1, 1990, 29 I.L.M. 941 (provisionally in force June 15, 1990) [hereinafter U.S.-Russ. Maritime Boundary Agreement]. *See generally* Oude Elferink, *supra* note 11, at 182-83 (explaining agreement is not yet in force because of opposition within the Russian Federation); Elizabeth G. Verille, *United States-Soviet Union*, in INTERNATIONAL MARITIME BOUNDARIES 447-60 (Jonathan I. Charney & Lewis M. Alexander eds., 1993).

15. Agreement Concerning the Delimitation of the Continental Shelf and the Fisheries Zones in the Area Between Greenland and Svalbard, Den./Green.-Nor., Feb. 20, 2006, reprinted in Alex G. Oude Elferink, *Maritime Delimitation Between Denmark/Greenland and Norway*, 38 OCEAN DEV. & INT'L L. 375, 378-79 [hereinafter Den./Green.-Nor. Agreement].

16. Gloria Galloway & Alan Freeman, *Ottawa Assails Moscow's Arctic Ambition*, THE GLOBE AND MAIL (Toronto), Aug. 3, 2007, at pp. A-1 & 11, available at <http://www.theglobeandmail.com/news/technology/science/article774901.ece>.

anything else.”¹⁷

Contrary to the media perception, there is an international legal framework, anchored in the 1982 United Nations Convention on the Law of the Sea (the LOS Convention),¹⁸ which applies to the Arctic Ocean. Four of the five Arctic States are parties to the LOS Convention (Canada, Denmark/Greenland, Norway and the Russian Federation), with only the United States not a party.¹⁹ There have been calls for a special international legal regime to be developed for the Arctic because of the unique nature and challenges of the area.²⁰ However, in the May 2008 Ilulissat Declaration, the five central Arctic Ocean States endorsed that “the law of the sea provides for important rights and obligations concerning the delineation of the outer limits of the continental shelf” and that the States were committed to “this legal framework and to the orderly settlement of any possible overlapping claims.”²¹ Further, in reference to the continental shelf, protection of the marine environment, freedom of navigation, marine scientific research and other uses of the sea, the five Arctic Ocean States made it clear that they saw “no need to develop a new comprehensive international legal regime to govern the Arctic Ocean.”²²

What “scramble” is taking place in the Arctic Ocean amongst

17. *Id.* For further commentary, including from the Russian Foreign Minister playing down the significance of the flag planting, see Tavis Potts & Clive Schofield, *Current Legal Developments: The Arctic*, 23 INT’L J. MARINE & COASTAL L. 151, 161 (2008).

18. United Nations Convention on the Law of the Sea, Dec. 10, 1982, 1833 U.N.T.S. 397 [hereinafter LOS Convention].

19. See President’s Statement on Advancing U.S. Interests in the World’s Oceans, 46 I.L.M. 890 (May 15, 2007) (both the Clinton and Bush II administrations have supported the United States becoming a party to the LOS Convention).

20. In October 2008, the European Parliament adopted a resolution containing the following paragraph:

[T]he Commission should be prepared to pursue the opening of international negotiations designed to lead to the adoption of an international treaty for the protection of the Arctic, having as its inspiration the Antarctic Treaty . . . as a minimum starting-point such a treaty could at least cover the unpopulated and unclaimed area at the centre of the Arctic Ocean.

European Parliament Resolution of 9 October 2008 on Arctic Governance, available at <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P6-TA-2008-0474+0+DOC+XML+V0//EN> (last visited June 15, 2009). See also Potts & Schofield, *supra* note 17, at 173-76. But see Julia Jabour & Melissa Weber, *Is It Time to Cut the Gordian Knot of Polar Sovereignty?*, 17 REV. EUR. CMTY. & INT’L ENVTL. L. 27, 27-40 (2008) (supporting the view that a comprehensive treaty for the Arctic is both unrealistic and not a desirable outcome). See generally Timo Koivurova, *Alternatives for an Arctic Treaty—Evaluation and a New Proposal*, 17 REV. EUR. CMTY. & INT’L ENVTL. L. 14, 14-26 (2008).

21. The Ilulissat Declaration, Arctic Ocean Governance Conference, May 27-28, 2008, ¶ 3, available at http://www.Oceanlaw.org/downloads/arctic/Ilulissat_Declaration.pdf and attached as an appendix to this paper.

22. *Id.* ¶ 4.

the bordering States has been one of seeking to acquire scientific data respecting the geologic composition and other physical properties of the continental margin areas in the Arctic Ocean. This has been prodded by the procedural obligation on State Parties to the LOS Convention to provide information on their proposed outer limits of the continental margin to the Commission on the Limits of the Continental Shelf (the Commission).²³

In December 2001, the Russian Federation submitted to the Commission information respecting its proposed outer limit of the continental margin beyond 200-n. miles. The Executive Summary contained coordinates and maps of the proposed outer limit, which indicated that the Russian-claimed area covered a large wedged-shaped area of continental margin having as its endpoint the North Pole.²⁴ In December 2006, Norway submitted to the Commission information respecting its proposed outer limit of the continental margin beyond 200-n. miles. The Executive Summary illustrates an outer limit line in the Western Nansen Basin of the Arctic Ocean that encloses a small area of continental margin beyond 200-n. miles, north of Spitsbergen.²⁵ Canada and Denmark/Greenland have not yet made submissions to the Commission and the United States, not yet a party to the LOS Convention, is not subject to the procedural obligation to submit information to the Commission.²⁶

The point of the information scramble, however, is indeed what the media suggests—the possibility of hydrocarbon and other energy resources. The LOS Convention, as noted below, provides that a coastal State has exclusive jurisdiction beyond 200-n. miles over the continental margin that is an extension (“natural prolongation”) of its land territory.²⁷ Thus, each Arctic State wants

23. The Commission on the Limits of the Continental Shelf was established pursuant to the LOS Convention, *supra* note 18, Annex II. LOS Convention, Article 76(8) indicates that State parties are to submit information on “the limits of the continental shelf beyond 200 nautical miles” to the Commission. The website of the Commission on the Limits of the Continental Shelf is http://www.un.org/Depts/los/clcs_new/clcs_home.htm (last visited Oct. 25, 2009).

24. Russian Federation, *Continental Shelf Submission, Executive Summary*, attached to U.N. Doc. CLCS.01.2001.LOS (Dec. 20, 2001) [hereinafter Russian Federation, *Executive Summary*]. See *infra* Part III.A.

25. Norway, *Continental Shelf Submission in Respect of Areas in the Arctic Ocean, the Barents Sea and the Norwegian Sea: Executive Summary*, at 15, attached to U.N. Doc. CLCS.07.2006.LOS (Dec. 21, 2006) [hereinafter Norway Submission, *Executive Summary*]. See *infra* Part III.B.

26. See Alex G. Oude Elferink, *The Outer Continental Shelf in the Arctic: The Application of Article 76 to the LOS Convention in a Regional Context*, in *THE LAW OF THE SEA AND POLAR MARITIME DELIMITATION AND JURISDICTION*, *supra* note 6, at 143-46 (respecting the possibility of a State not a party to the LOS Convention making a voluntary submission to the Commission).

27. LOS Convention, *supra* note 18, art. 76(1):

to maximize its potential area of continental margin beyond 200-n. miles in order to secure access to possible hydrocarbon resources. The legal/political issues that arise as a result are two-fold. First, as noted above, there are quite likely to be overlapping national claims to margin areas beyond 200-n. miles in the central Arctic Ocean and each State wants to enhance its arguments and position respecting the overlapping claim areas. Resolution of these overlapping claims is primarily subject to political negotiation within the framework of the international law of maritime boundary delimitation.²⁸ Second, since areas of the seafloor that are not part of the continental margin of any State are subject to the "Common Heritage of Mankind" and the mineral resources of these areas are managed by the ISA,²⁹ each Arctic State is seeking information to maximize its claim to its adjacent continental margin to preclude mineral resources from coming within the jurisdiction of the ISA. The LOS Convention, as will be noted below, contains a complex formula and process for the determination of "outer limits" in this situation that is the boundary between the jurisdiction of a coastal State and the ISA.³⁰

In 2001, it was projected that all five States have, in the central Arctic Ocean, adjacent to their 200-n. mile zones, a physical continental margin over which they may exercise exclusive jurisdiction respecting mineral resources.³¹ Moreover, it was projected in 2001 that most of the seafloor of the Arctic Ocean Basin would be subject to national jurisdiction, leaving two smallish areas of seafloor outside of national authority, with the mineral resources of these areas subject to the common heritage of mankind and the management of the ISA.³² Revisions made to the 2001 study indicate that there may be in fact four areas of seafloor outside of national authority in the Arctic Ocean Basin.³³ New

The continental shelf of a coastal State comprises the seabed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land territory to the outer edge of the continental margin, or to a distance of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured where the outer edge of the continental margin does not extend up to that distance.

28. See *infra* Part II.C.

29. LOS Convention, *supra* note 18, arts. 1(1), 133, 136.

30. See *infra* Parts II.A, II.B.

31. Ron Macnab et al., *Cooperative Preparations for Determining the Outer Limit of the Juridical Continental Shelf in the Arctic Ocean: A Model for Regional Collaboration in Other Parts of the World?*, 9 INT'L. BOUNDARIES RES. UNIT BOUNDARY & SECURITY BULL., 86 (2001).

32. See *id.*

33. Ron Macnab, *The Outer Limit of the Continental Shelf in the Arctic Ocean*, in LEGAL AND SCIENTIFIC ASPECTS OF CONTINENTAL SHELF LIMITS 302, 304-05, figs. 2 & 5

scientific information, arriving regularly, and newly devised maps³⁴ keep adjusting the picture as regards the Arctic Ocean.

This Article will proceed by first providing an overview of the international law of the sea framework that deals with the continental margin area beyond 200-n. miles, that the Arctic Ocean States endorsed in the 2008 Ilulissat Declaration. This will be followed by a brief survey of the activities of the central Arctic Ocean coastal States respecting their continental margin areas beyond 200-n. miles.

II. LAW OF THE SEA FRAMEWORK FOR THE CONTINENTAL SHELF

There are three distinct components of the international legal framework for the continental margin beyond 200-n miles. The first component is the substantive international legal rights that a coastal State has respecting the continental margin where it extends beyond 200-n. miles that are set out in the LOS Convention, but are derived from the 1958 Geneva Convention on the Continental Shelf³⁵ and the International Court of Justice decision in the 1969 *North Sea Continental Shelf Cases*.³⁶ It is asserted below that these substantive rights are part of customary international law. The second component concerns the criteria and process in the LOS Convention regarding the establishment by a coastal State of the outer limits of its legal continental shelf. This involves the delineation of the maritime boundary on the seafloor between a coastal State and the ISA. The third component is the practice of States and international tribunals, supplemented by the relevant provisions of the LOS Convention, regarding bilateral maritime boundary delimitation respecting the continental margin beyond 200-n. miles.

A. Substantive Rights

The history of the international legal regime of the continental shelf is closely linked to hydrocarbon resources. The first international instrument dealing with the continental shelf, albeit using the phrase submarine areas and “sea-bed and sub-soil”

(Myron H. Nordquist et al. eds., 2004).

34. See the map prepared by the International Boundaries Research Unit of the University of Durham, *Maritime Jurisdiction and Boundaries in the Arctic Region*, <http://www.dur.ac.uk/ibru/resources/arctic/> (last visited June 22, 2009).

35. Convention on the Continental Shelf, Apr. 29, 1958, 499 U.N.T.S. 311 [hereinafter *Continental Shelf Convention*].

36. *North Sea Continental Shelf Cases* (Den./Neth. v. F.R.G.), 1969 I.C.J. 3 (Feb. 20).

outside territorial waters rather than continental shelf, was the 1942 Treaty between the United Kingdom and Venezuela respecting the Gulf of Paria.³⁷ At issue in the Treaty was the division of oil fields between Venezuela and Trinidad.³⁸ The 1945 Truman Proclamation on the Continental Shelf was explicitly tied to asserting exclusive U.S. authority over hydrocarbon activity in the continental shelf adjacent to the United States.³⁹ The principal features of the international legal regime of the continental shelf are set out in the 1958 Continental Shelf Convention and repeated in the 1982 LOS Convention and largely reflect the economic and geopolitical importance of coastal States controlling offshore hydrocarbon exploration and exploitation in their adjacent seafloor areas.

- The international legal basis of a coastal State's authority over a continental shelf is adjacency.⁴⁰ The 1969 *North Sea Continental Shelf Cases* introduced the concept of "natural prolongation" in the context that a coastal State has rights over "the area of [the] continental shelf that constitut[es] a natural prolongation of its land territory."⁴¹ Essentially, natural prolongation of the adjacent land territory is accepted as being the primary, though not the sole, basis of legal authority over the continental shelf. This was adopted in Article 76(1) of the LOS Convention.⁴²
- The nature of a coastal State's rights over the continental shelf is that the State exclusively⁴³ has "sovereign rights for the purpose of exploring [the continental shelf] and exploiting its natural resources."⁴⁴
- Coastal State rights over the continental shelf do not

37. Treaty Relating to the Submarine Areas of the Gulf of Paria, art. 1, Gr. Brit.-N. Ir.-Venez., Feb. 26, 1942, 205 L.N.T.S. 121. See generally 1 D.P. O'CONNELL, *THE INTERNATIONAL LAW OF THE SEA* (I.A. Shearer ed., 1982).

38. O'CONNELL, *supra* note 37, at 470.

39. Exec. Order No. 9633, 10 Fed. Reg. 12,305 (Sept. 28, 1945), reprinted in 59 Stat. 884 (1945); see also O'CONNELL, *supra* note 37, at 470-72. See generally ANN L. HOLLICK, *U.S. FOREIGN POLICY AND THE LAW OF THE SEA* 18-61 (Princeton Univ. Press 1981).

40. Continental Shelf Convention, *supra* note 35, art. 1.

41. *North Sea Continental Shelf Cases*, *supra* note 36, ¶19; see also *id.* ¶ 43-44, 95-96.

42. See LOS Convention, *supra* note 18.

43. Continental Shelf Convention, *supra* note 35, art. 2(2); LOS Convention, *supra* note 18, art. 77(2).

44. Continental Shelf Convention, *supra* note 35, art. 2(1); LOS Convention, *supra* note 18, art. 77(1).

depend upon occupation or an express proclamation.⁴⁵ The International Court of Justice, in the *North Sea Continental Shelf Cases*, commented “that the rights of the coastal State in respect of the area of continental shelf . . . exist *ipso facto* and *ab initio*, by virtue of its sovereignty over the land.”⁴⁶ In short, there is an inherent right.

- “The rights of [a] coastal State over the continental shelf do not affect the legal status of the superjacent waters or [the] airspace above those waters.”⁴⁷ In the 1958 LOS Convention, the waters were referred to as “high seas,” while the 1982 LOS Convention wording made no reference to high seas.

There is little question that the above features of the continental shelf legal regime are part of customary international law.⁴⁸ Consistent with customary international law, the above legal regime applies to the State’s adjacent continental shelf area, where that area extends beyond 200-n. miles.⁴⁹ The United States, while a non-party to the LOS Convention, can and does exercise exclusive jurisdiction over the resources of the continental margin adjacent to its 200-n. mile zones, where a physical margin exists, consistent with the international law of the sea.⁵⁰

45. Continental Shelf Convention, *supra* note 35, art. 2(3); LOS Convention, *supra* note 18, art. 77(3).

46. *North Sea Continental Shelf Cases*, *supra* note 36, ¶ 19.

47. Continental Shelf Convention, *supra* note 35, art. 3; LOS Convention, *supra* note 18, art. 78(1).

48. See *North Sea Continental Shelf Cases*, *supra* note 36, ¶ 62. The Court noted that provisions of the 1958 Continental Shelf Convention that were reflected, were a crystallization, received, or were emergent “rule[s] of customary international law” including those dealing with “the seaward extent of the shelf; the juridical character of the coastal State’s entitlement; the nature of the rights exercisable; the kind of natural resources to which these relate; and the preservation intact of the legal status as high seas of the waters over the shelf.” O’CONNELL, *supra* note 37, at 475-76.

49. See Ted L. McDorman, *The Entry into Force of the 1982 LOS Convention and the Article 76 Outer Continental Shelf Regime*, 10 INT’L J. MARINE & COASTAL L. 165, 167 (1995).

It can be asked whether a non-party to the LOS Convention can legally exercise jurisdiction over its adjacent continental margin beyond 200 nautical miles or whether this entitlement is only available to parties to the LOS Convention. The answer is that there appears to exist sufficient state practice based on the 1958 Geneva Convention on the Continental Shelf and upon Article 76 itself to support the view that, as a matter of customary international law, states can legally exercise jurisdiction over the continental margin beyond 200 nautical miles irrespective of the State’s status as a LOS Convention ratifier.

Id.

50. See Treaty between the United States and Mexico on the Delimitation of the Continental Shelf in the Western Gulf of Mexico beyond 200 Nautical Miles, U.S.-Mex.,

Canada, through oil and gas legislation, has long exercised jurisdiction over its adjacent continental margin beyond 200-n. miles based on customary international law, even though the precise location of the outer edge of the margin was not delineated.⁵¹ When Canada became a party to the LOS Convention in 2003, the international legal basis for Canada's exercise of authority over the shelf area beyond 200-n miles shifted from customary international law to the LOS Convention. There was little difference respecting substantive rights, so that little was gained or lost by Canada in this area by ratifying the LOS Convention except perhaps attainment of a degree of certainty inherent in a treaty-based right as opposed to a right based on customary international law.⁵²

It is arguable that a State's substantive international legal right to exercise exclusive authority over the resources in its adjacent continental margin beyond 200-n. miles, where it is uncontested that such a shelf area exists, is not contingent on the procedural obligation to submit information regarding a proposed outer edge of the margin to the Commission. Oude Elferink articulates the point as being a distinction between a coastal State's legal entitlement to its adjacent shelf area and the establishment of the outer limit of the shelf area.⁵³ On this point, the following statements were attributed to some States at the Eleventh Meeting of States Parties to the LOS Convention in 2001:

Some delegations pointed out that there was no legal consequence stipulated by the Convention if a State did not make a submission to the Commission. Several delegations underscored the principle that the rights of the coastal State over its continental shelf were inherent, and . . . did not depend on occupation, effective or notional, or any express proclamation . . .⁵⁴

June 9, 2000, T.I.A.S. No. 2143.

51. See Barry G. Buzan & Danford W. Middlemiss, *Canadian Foreign Policy and the Exploitation of the Seabed*, in *CANADIAN FOREIGN POLICY AND THE LAW OF THE SEA 3-7* (Barbara Johnson & Mark W. Zacher eds., 1977); Ted L. McDorman, *Canada Ratifies the 1982 United Nations Convention on the Law of the Sea: At Last*, 35 *OCEAN DEV. & INT'L L.* 103, 106 (2004).

52. See Ted L. McDorman, *Will Canada Ratify the Law of the Sea Convention?*, 25 *SAN DIEGO L. REV.* 535, 554 (1988).

53. Alex G. Oude Elferink, *Article 76 of the LOSC on the Definition of the Continental Shelf: Questions concerning its Interpretation from a Legal Perspective*, 21 *INT'L J. MARINE & COASTAL L.* 269, 277-79 (2006).

54. U.N. Convention on the Law of the Sea, Eleventh Meeting of States Parties, May 14-18, 2001, *Report of the Eleventh Meeting of the State Parties*, ¶ 75, U.N. Doc. SPLOS/73

Nevertheless, as one writer has commented, a coastal State's "inherent" right to a continental shelf under Article 77(3) "does not remove from the coastal State the burden of demonstrating its entitlement" to a margin area beyond 200-n. miles.⁵⁵

Whatever the merit of the above arguments, coastal States with continental margin areas beyond 200-n. miles are demonstrating their entitlement to that area through the submission of information to the Commission respecting their proposed outer limits of the continental margin⁵⁶ and it is fully expected that the two Arctic States that are parties to the LOS Convention that have not made submissions to the Commission, Canada and Denmark/Greenland, will do so in a timely manner.⁵⁷

(June 14, 2001); U.N. Convention on the Law of the Sea, Eighteenth Meeting of the States Parties, June 13-20, 2008, *Decision Regarding the Workload of the Commission and the Ability of States, Particularly Developing States, to Fulfill the Requirements of Article 4 of Annex II to the United Nations Convention on the Law of the Sea*, preambular ¶ 2, U.N. Doc. SPLOS/183 (June 20, 2008) ("Recalling also that the rights of the coastal State over the continental shelf do not depend on occupation, effective or notional, or any express proclamation").

55. Gudmundur Eiriksson, *The Case of Disagreement between a Coastal State and the Commission on the Limits of the Continental Shelf*, in LEGAL AND SCIENTIFIC ASPECTS OF CONTINENTAL SHELF LIMITS, *supra* note 33, at 251, 258.

56. The Commission has created a "test of appurtenance" as a means of determining whether a coastal State has a "legal entitlement" to a continental margin area beyond 200-n. miles. U.N. Convention on the Law of the Sea, Comm'n on the Limits of the Cont'l Shelf, May 3-14, 1999, *Scientific and Technical Guidelines of the Commission on the Limits of the Continental Shelf*, § 2.2, U.N. Doc. CLCS/11 (May 13, 1999). Accordingly, a coastal State must "demonstrate to the Commission" that there is a physical continental margin area beyond 200-n. miles, with the result being of a demonstration that the outer limit of the continental shelf will be the 200-n. mile limit. *Id.* at §§ 2.2.3-2.2.4.

57. LOS Convention, *supra* note 18, Annex II, art. 4. This article provides that a coastal State intending to establish outer limits of the continental margin "shall" submit information to the Commission "within 10 years of the entry into force" of the Convention for the State. As a result, the ten years starts as of 2003 for Canada and 2004 for Denmark.

The ten-year mark for States that were parties to the LOS Convention when it came into effect in 1994 has been adjusted. At the Eleventh Meeting of the State Parties to the LOS Convention it was decided that the ten year time period would commence as of May 13, 1999. U.N. Convention on the Law of the Sea, Eleventh Meeting of the State Parties, May 14-18, 2001, *Decision regarding the date of commencement of the ten-year period for making submissions to the Commission on the Limits of the Continental Shelf set out in article 4 of Annex II to the United Nations Convention on the Law of the Sea*, U.N. Doc. SPLOS/72 (May 29, 2001).

In June 2008, the Eighteenth Meeting of the State Parties decided that the ten year obligation could be met by a coastal State submitting "preliminary information indicative of the outer limits . . . and a description of the status of preparation and intended date of making a submission." The preliminary information would not be acted upon by the Commission and would be without prejudice to a subsequent full submission. U.N. Convention on the Law of the Sea, Eighteenth Meeting of States Parties, *supra* note 54, ¶ 1.

Is it the case that a coastal State can lose its rights to an adjacent continental margin area beyond 200-n. miles as a result of a procedural provision in the LOS Convention? Oude Elferink answers, "[N]on-compliance with the time limit contained in Article 4 of Annex II does not have any consequences for the entitlement of the coastal state over its continental shelf." Oude Elferink, *supra* note 53, at 279.

B. Outer Limit of the Continental Margin

1. Criteria

The 1958 Continental Shelf Convention did not establish a definable outer limit of the continental shelf. Article 1 provided two criteria for the outer limit of the shelf - the seabed and subsoil within the envelope of waters of "a depth of 200 metres or, beyond that limit, to where the depth of the superjacent waters admits of the exploitation of the natural resources . . ." ⁵⁸ The term "exploitability" was directly tied to hydrocarbon exploration and development possibilities and the unwillingness of coastal States to forego access to these resources in their adjacent offshore areas.

Unlike in 1958, during the negotiation of the LOS Convention there was a necessity to provide for a definitive outer limit of the continental margin where it extended beyond 200-n. miles because of the "Common Heritage of Mankind" and the ISA, since the ISA and the Common Heritage were to apply to the mineral resources of the seafloor beyond national jurisdiction, in other words beyond the outer limits of coastal States' continental margins. The compromise that was agreed upon between those States (like Canada, the United States, Norway and the Russian Federation) which asserted that international law recognized coastal State authority over the shelf beyond 200-n. miles and those States seeking to limit coastal State continental shelf authority at 200-n miles involved: adoption of a complex formula for determining the outer limit of a State's continental shelf beyond 200-n miles; creation of the Commission to assist States in applying the complex formula; and revenue sharing with the international community respecting mineral resources exploited by a coastal State from the continental margin area beyond 200-n. miles. ⁵⁹ It is to be noted that the ISA plays no role in the outer limits process.

The criteria agreed upon in the LOS Convention, to be applied

58. "Even at the 1958 conference it was recognised that the addition of the exploitability test rendered the seaward limit dangerously imprecise." E.D. BROWN, *THE LEGAL REGIME OF HYDROSPACE* 1-40 (George W. Keeton & Georg Schwarzenberger eds., 1971). See also R.R. CHURCHILL & A.V. LOWE, *THE LAW OF THE SEA* 137 (2d ed. 1988). See generally Bernard H. Oxman, *The Preparation of Article 1 of the Convention on the Continental Shelf*, 3 J. MAR. L. & COM. 245 (1972).

59. The revenue sharing provision is in LOS Convention, *supra* note 18, art. 82, and will not be discussed in this paper. See generally Michael W. Lodge, *The International Seabed Authority and Article 82 of the UN Convention on the Law of the Sea*, 21 INT'L J. MARINE & COASTAL L. 323 (2006); George Mingay, *Article 82 of the LOS Convention—Revenue Sharing—The Mining Industry's Perspective*, 21 INT'L J. MARINE & COASTAL L. 335 (2006).

by a coastal State in determining its outer limit of the continental margin beyond 200-n. miles, is succinctly set out below. As noted above, a coastal State's legal entitlement to a margin area beyond 200-n. miles is based on "the natural prolongation of its land territory,"⁶⁰ with Article 76(2) of the LOS Convention directing that the margin does not extend beyond the limits established by the criteria.

- Pursuant to Article 76(4), an envelope for the outer limit of the margin is first created by determining the foot of the continental slope⁶¹ and then constructing
 - a line connecting the outermost points where "the thickness of sedimentary rocks is at least one per cent of the shortest distance from such point to the foot of the continental slope"⁶² or
 - a line connecting points "not more than 60 nautical miles from the foot of the continental slope."
- The envelope created by Article 76(4) is subject to two constraints. The lines created pursuant to 76(4) are not

60. LOS Convention, *supra* note 18, art. 76(1); *see also infra* Part II.C. The *North Sea Continental Shelf Cases*, *supra* note 36, ¶ 43 provides:

What confers *ipso jure* title which international law attributes to the coastal State in respect of its continental shelf, is the fact that the submarine areas concerned may be deemed to be actually part of the territory over which the coastal State already has dominion,—in the sense that although covered with water, they are a prolongation or continuation of that territory, an extension of it under the sea.

61. LOS Convention, *supra* note 18, art. 76(4)(b) notes that:

In the absence of evidence to the contrary, the foot of the continental slope shall be determined as the point of maximum change in the gradient at its base.

U.N., Div. for Ocean Affairs & Law of the Sea, *The Law of the Sea: Definition of the Continental Shelf*, ¶ 43 (1993) notes, "Normally the maximum change in the gradient at the base of the continental slope occurs either at the point where the rise and slope join, or where a trench exists, along the axis of such trench."

For a reasonably non-technical understanding of the foot-of-the-slope (*i.e.*, for lawyers), see generally Dave Monahan, *Determination of the Foot of the Continental Slope as the point of Maximum Change in the Gradient at its Base*, in LEGAL AND SCIENTIFIC ASPECTS OF CONTINENTAL SHELF LIMITS, *supra* note 33, at 91-120; Richard T. Haworth, *Determination of the Foot of the Continental Slope by Means of Evidence to the Contrary to the General Rule*, in LEGAL AND SCIENTIFIC ASPECTS OF CONTINENTAL SHELF LIMITS, *supra* note 33, at 121-37.

62. For example, if it is determined that the thickness of sedimentary rocks is mile, then that point can be 100-n. miles seaward from the foot of the slope. For a reasonably non-technical understanding of the sediment thickness rule (*i.e.*, for lawyers), see generally *The Law of the Sea: Definition of the Continental Shelf*, *supra* note 61, ¶ 49-54; Chris M. Carleton et al., *The Practical Realization of the Continental Shelf Limit*, in CONTINENTAL SHELF LIMITS: THE SCIENTIFIC AND LEGAL INTERFACE 268, 274-78 (Peter J. Cook & Chris M. Carleton eds., 2000).

to extend beyond:

- 350-n miles from a State's baselines; or
- 100-n. miles from the 2,500 metre isobath.⁶³
- For submarine ridges, the 350-n. mile limit applies. However, for "submarine elevations that are natural components of the continental margin, such as its plateaux, rises, caps, banks and spurs," 100-n. miles from the 2,500 metre isobath criterion is the limitation.⁶⁴
- There is a general limitation that the continental margin does not include the ocean floor, with its oceanic ridges.⁶⁵

The criteria are not easily applicable in any given situation because of the technical and definitional difficulties of determining the thickness of sedimentary rocks, the foot of the continental slope, the 2,500 metre isobath, and distinguishing among submarine ridges, oceanic ridges, and submarine elevations that are natural components of the continental margin.⁶⁶

One scholar has described the Article 76 criteria as combining

63. LOS Convention, *supra* note 18, art. 76(5). The key point to note is that the 350-n. mile limit is not the only constraint line; as a result, a coastal State's continental margin can go well beyond 350-n. miles.

64. *Id.* art. 76(6).

65. *Id.* art. 76(3).

66. The terms submarine ridges, oceanic ridges, and submarine elevations that are natural components of the continental margin are often critical criteria, yet the terms have always had an ambiguous meaning both legally and within the scientific literature. *See generally* Philip A. Symonds et al., *Ridge Issues*, in *CONTINENTAL SHELF LIMITS: THE SCIENTIFIC AND LEGAL INTERFACE*, *supra* note 62, at 285-307.

The Commission has indicated how it intends to deal with these terms. First, the "geographical denominations" or nomenclature will not be the basis of distinction. *Scientific and Technical Guidelines of the Commission on the Limits of the Continental Shelf*, *supra* note 56, ¶ 7.1.8. Second, geologic crust types (for example, continental or oceanic) "cannot be the sole qualifier in the classification of ridges and elevations." *Id.* ¶ 7.2.9. Third, in the case of ridges, whether a ridge is oceanic or submarine will "be based on . . . scientific and legal considerations as natural prolongation of [the] land territory and land mass, morphology of ridges and their relation to the continental margin . . . , and continuity of ridges." *Id.* ¶ 7.2.10. Fourth, given points two and three, the Commission notes that the issue of ridges will be examined "on a case-by-case basis." *Id.* ¶ 7.2.11. Fifth, as regards submarine elevations, the Commission sees as relevant "the processes that form the continental margins and how continents grow" with differences drawn between "active margins" and "passive margins." *Id.* ¶¶ 7.3.1, 7.3.1(a)-(b).

For a reasonably non-technical understanding of ridges and submarine elevations (i.e., for lawyers), see generally Ron Macnab, *Submarine Elevations and Ridges: Wild Cards in the Poker Game of UNCLOS Article 76*, 39 *OCEAN DEV. & INT'L L.* 223, 223-34 (2008); Philip A. Symonds & Harald Brekke, *A Scientific Overview of Ridges Related to Article 76 of the UN Convention on the Law of the Sea*, in *LEGAL AND SCIENTIFIC ASPECTS OF CONTINENTAL SHELF LIMITS*, *supra* note 33, at 141-67; Harald Brekke & Philip A. Symonds, *The Ridge Provisions of Article 76 of the UN Convention on the Law of the Sea*, in *LEGAL AND SCIENTIFIC ASPECTS OF CONTINENTAL SHELF LIMITS*, *supra* note 33, at 169-99.

the "influences of geography, geology, geomorphology, and jurisprudence."⁶⁷ He should also have added the influence of hydrocarbons resources. The sediment thickness criterion was introduced into the outer limit formula to ensure that a coastal State secured jurisdiction over all the hydrocarbon resources that might possibly exist in the offshore areas adjacent to it.⁶⁸ Essentially, if the sediments were thick enough there might exist hydrocarbon resources and, therefore, they should come under coastal State authority. The sediment thickness criterion was criticized by U.S. geologist Hollis D. Hedberg, the proponent of the 60-n. miles from the foot-of-the-slope criterion, as being:

based more on factors of economic advantage to certain coastal countries than on impartial considerations of where a boundary should most naturally, most logically, and most rightfully be.⁶⁹

As regards the Arctic Ocean, it is a moot point whether the criteria of Article 76 will be applied by all the bordering States in determining their outer limits of the continental margin beyond 200-n. miles since four of the five Arctic States are parties to the LOS Convention (and, as noted above, Norway and the Russian Federation have submitted their proposed outer limits to the Commission) and the United States, a Convention non-party, has made clear its intention to apply the Article 76 criteria.⁷⁰

2. Process

The creation of the Commission was an important part of the Article 76 compromise. Article 76(8) provides that a coastal State is to submit information supporting its proposed outer limit of its "legal" continental shelf to the Commission.⁷¹ The Commission is to consider the submitted material and make recommendations to

67. DOUGLAS M. JOHNSTON, *THE THEORY AND HISTORY OF OCEAN BOUNDARY-MAKING* 91 (1988).

68. See Frederic A. Eustis, III, *Method and Basis of Seaward Delimitation of Continental Shelf Jurisdiction*, 17 VA. J. INT'L L. 107, 125 (1976); Hollis D. Hedberg, *Discussion and Questions*, in *LAW OF THE SEA: CONFERENCE OUTCOMES AND PROBLEMS OF IMPLEMENTATION* 212, 215 (Edward Miles & John King Gamble, Jr. eds., 1977).

69. Hedberg, *supra* note 68, at 215.

70. See *United States Policy Governing the Continental Shelf of the United States of America*, Nov. 17, 1987, attachment to a Memorandum from Assistant Secretary of State John D. Negroponte to Deputy Legal Adviser Elizabeth Verille, reprinted in J. ASHLEY ROACH & ROBERT W. SMITH, *UNITED STATES RESPONSES TO EXCESSIVE MARITIME CLAIMS 201-02* (Martinus Nijhoff, 2d ed, 1996); see also *infra* Part III.D.

71. LOS Convention, *supra* note 18, art. 76(8).

the submitting State regarding the information received and the relevant Article 76 criteria. The Commission does not have the legal authority to determine or impose its views respecting the location of the outer limit of the continental margin on a coastal State. In other words, the Commission is not a court, nor does it represent the interests of the ISA. It is the coastal State, and not the Commission, that determines the outer limit of its continental margin beyond 200-n. miles.⁷²

The above black and white statements, while accurate, are subject to a more nuanced understanding based on the wording of the LOS Convention and, more importantly, the practice that appears to be developing respecting the relationship of submitting States and the Commission. It is clear that submitting States are adhering to those recommendations made by the Commission to provide supplemental information in support of proposed outer limit lines.⁷³ Moreover, as a generality, submitting States are treating the Commission, while not as a court, nevertheless as a body whose opinion (recommendations) matters and, as result, as a body which needs to be satisfied.⁷⁴

Article 76(8) provides that “[t]he limits of the shelf established by a coastal State on the basis of these [Commission] recommendations shall be final and binding.”⁷⁵ There is uncertainty of a somewhat pedantic nature respecting the meaning to be attached to “on the basis of” and upon whom the limits of the shelf are final and binding.⁷⁶ It has been asserted that since it is the coastal State that has the final say on the determination of the outer limit of the continental margin that, not unlike respecting the location of the outer limit of the 200-n. mile zone, other States may protest or otherwise not agree with the determination of a

72. The U.S. government, for example, stated, “Ultimate responsibility for the delimitation [of the outer limit of the continental margin] lies with the coastal State itself.” President William J. Clinton, *Message from the President of the United States transmitting United Nations Convention on the Law of the Sea, done Dec. 10, 1994* (the Convention) and the Agreement Relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982, *adopted at New York July 28, 1994* (the Agreement) and signed by the United States, subject to ratification, on July 29, 1994, Senate, Treaty Document 39, 103d Congress, 2d Session IV (1994), at 40, *reprinted in* 34 I. L.M. 1393-1447 (1995). *See also The Law of the Sea: Definition of the Continental Shelf*, *supra* note 61, at 29; Int’l Law Ass’n, Comm. on Legal Issues of the Outer Cont’l Shelf, in REPORT OF THE SEVENTY-FIRST CONFERENCE HELD IN BERLIN 785-86 (London 2004).

73. *See infra* Part III.A.

74. *See generally* Macnab, *supra* note 66 (arguing that it is the Commission that holds the stronger hand where disagreements exist with the submitting State respecting interpretation of data and Article 76).

75. LOS Convention, *supra* note 18, art. 76(8).

76. *See* Ted L. McDorman, *The Role of the Commission on the Limits of the Continental Shelf: A Technical Body in a Political World*, 17 INT’L J. MARINE & COASTAL L. 301, 313-17 (2002).

coastal State and may even be able to resort to dispute settlement under the LOS Convention.⁷⁷

It is also important to note that the Commission is not to deal with submissions respecting the outer limits of a continental margin where the area in question is subject, in any way, to a dispute between States.⁷⁸ Article 76(10) of the LOS Convention notes that “[t]he provisions of this article are without prejudice to the question of delimitation of the continental shelf between States with opposite or adjacent coasts.”⁷⁹

Annex I to the Rules of Procedure of the Commission,⁸⁰ paragraph 5(a) states:

In cases where a land or maritime dispute exists, the Commission shall not consider and qualify a submission made by any of the States concerned in the dispute.

This limitation on the Commission may result in the Commission having little to say about the information submitted to it by the central Arctic Ocean coastal States, since it is clear that there are a large number of potential overlapping continental margin claims.

Submitting States can circumvent this limitation on the Commission in a number of ways, the easiest of which has already been employed by Norway in its submission to the Commission regarding the central Arctic Ocean. Norway obtained the consent of the Russian Federation and Denmark/Greenland that Norway’s submission and the work of the Commission would be without prejudice to subsequent bilateral delimitation, thus clearing the way for the Commission to consider Norway’s information respecting areas that might be in dispute with neighbouring

77. *Id.* at 309-10, 314-19.

78. See generally *ILA Committee 2004 Report*, *supra* note 72, at 809-13; Clive R. Symons, *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?*, 37 OCEAN DEV. & INT’L L. 299 (2006); Elferink, *Submissions of Coastal States to the CLCS*, in LEGAL AND SCIENTIFIC ASPECTS OF CONTINENTAL SHELF LIMITS, *supra* note 33, at 263-85; Constance Johnson & Alex G. Oude Elferink, *Submissions to the Commission on the Limits of the Continental Shelf in Cases of Unresolved Land and Maritime Disputes: The Significance of Article 76(10) of the Convention on the Law of the Sea*, in THE LAW OF THE SEA: PROGRESS AND PROSPECTS 161-79 (David Freestone et al. eds., 2006).

79. LOS Convention, *supra* note 18, art. 76(10).

80. U.N. Convention on the Law of the Sea, Comm’n on the Limits of the Cont’l Shelf, *Rules of Procedure of the Commission*, U.N. Doc. CLCS/40/Rev.1 (Apr. 17, 2008).

States.⁸¹

C. *Bilateral Boundaries*

As noted above, the Commission is without competence to deal with a submission from a coastal State respecting a proposed outer limit that engages or involves an overlapping or otherwise disputed area of the continental margin, unless the relevant States consent to the involvement of the Commission. Even where a disputing State consents to the involvement of the Commission, as noted above, it is clear that the recommendations of the Commission are “without prejudice” in bilateral delimitation concerns.

Where two States have overlapping continental margin claims to an area beyond 200-n. miles from each State, the law of the sea framework is Article 83 of the LOS Convention, which calls upon the disputing States to reach an agreement to resolve their overlapping claims.⁸² States are free, of course, to agree to delimit maritime boundaries using whatever considerations and criteria they so desire. Essentially, the negotiation of a maritime boundary agreement is political.

There is, however, a body of work from independent third-party adjudicative tribunals that have been asked by States to either draw lines in the ocean or provide assistance to the parties on the principles to be used to construct boundaries. As a result, there exists what is referred to as the international law of maritime boundary delimitation. In maritime boundary negotiations, this international law influences the positions that States may take in negotiations.

However, a comment of a Canadian boundary negotiator referring to discussions with the United States should be kept in mind: “The negotiations have . . . proceeded on the basis that strict legal principles should not stand in the way of an effort to seek a balanced, fair and equitable solution on the lines to be drawn.”⁸³

81. Norway Submission, *Executive Summary*, *supra* note 25, at 11-12. See also *Note from the Permanent Mission of Norway to the United Nations, to Secretary-General of the United Nations* (Mar. 28, 2007), available at http://www.un.org/Depts/los/clcs_new/submissions_files/nor06/note28march2007.pdf; *Note from the Permanent Mission of the Russian Federation to the United Nations, to Secretary-General of the United Nations* (Feb. 21, 2007) [hereinafter *Note from the Permanent Mission of Russia to U.N.*] (on file with author). See *infra* Part III.B.

82. See LOS Convention, *supra* note 18, art. 83(1)-(4).

83. Lorne Clark, Deputy Negotiator for Mar. Boundaries (Canada-U.S.A.), House of Commons, *Minutes of Proceedings and Evidence of the Standing Committee on Fisheries and Forestry*, Apr. 11, 1978, 3d Sess., 30th Parl., 1977-1978, Issue No. 15, at 8.

Article 83 of the LOS Convention, beyond calling on States to agree, offers little guidance to States engaged in a maritime boundary dispute. The key phraseology, the product of lengthy and acrimonious negotiations with States siding either for or against having equidistance included within the provisions,⁸⁴ is: “the delimitation . . . shall be effected by agreement on the basis of international law, as referred to in Article 38 of the Statute of the International Court of Justice, in order to achieve an equitable solution.”⁸⁵ The wording does not provide a privileged position to any criteria or methodology to be used by States or third party adjudicators in effecting a bilateral delimitation. The Tribunal in the 1999 *Eritrea-Yemen Arbitration* noted that Article 83 was the product of “a last minute endeavour . . . to get agreement on a very controversial matter” and thus “w[as] consciously designed to decide as little as possible.”⁸⁶ The only identifiable criterion is that the result is to be “equitable.”

Arguably, based on the numerous maritime boundary international adjudications over the last few decades, there has developed a “common law” in this area.⁸⁷ The recent adjudications have attained an impressive, but not totally uniform, consistency respecting the use of equidistance/relevant circumstances in a two-step approach for delimiting a single maritime boundary for the water column and continental shelf within 200-n. miles of each State. The Tribunal in the 2006 *Barbados-Trinidad and Tobago Arbitration* described this approach as follows:

First, a provisional line of equidistance is posited as a hypothesis and a practical starting point. While a convenient starting point, equidistance alone will in many circumstances not ensure an equitable result in the light of the peculiarities of each specific case. The second step accordingly requires the examination of this provisional line in the light of relevant circumstances, which are case specific, so as to determine whether it is necessary to adjust the provisional equidistance line in order to achieve an

84. See generally 2 UNITED NATIONS CONVENTION ON THE LAW OF THE SEA 1982: A COMMENTARY 796-816 (Satya N. Nandan & Shabtai Rosenne, eds., Dordrecht, Martinus Nijhoff 1993).

85. LOS Convention, *supra* note 18, art. 83(1).

86. Maritime Delimitation (Eri. v. Yemen), 40 I.L.M. 983, 1003, ¶116 (Perm. Ct. Arb. 1999) (also available at http://www.pca-cpa.org/showfile.asp?fil_id=459).

87. Jonathan I. Charney, *Progress in International Maritime Boundary Delimitation Law*, 88 AM. J. INT'L L. 227, 228 (1994).

equitable result.⁸⁸

The essential characteristic of this approach is the prominence of equidistance for construction of the provisional line, combined with circumstances that can be invoked in order to justify an adjustment of the provisional equidistance line. While the International Court of Justice in the 1969 *North Sea Continental Shelf Cases* talked in terms of there being “no legal limit” to the circumstances that may affect equitability,⁸⁹ subsequent maritime boundary adjudications have limited the factors that are considered, with the emphasis being on geographic circumstances.⁹⁰ The circumstances that have been considered in recent maritime boundary adjudications include:

- the presence and effect of islands, rocks and other like features;
- the configuration of the coasts in the area relevant to the delimitation;
- the comparative proportionality of lengths of coasts in the area relevant to the delimitation;
- the presence of ocean resources in the area to be delimited;
- the conduct of the parties; and
- agreements between Colonial powers.⁹¹

David Colson notes that, while the above law of maritime boundary delimitation “is secure” and relevant where there are overlapping continental margin claims beyond 200-n. miles,⁹²

88. Maritime Delimitation (Barb. v. Trin. & Tobago), 45 I.L.M. 800, 839 (Perm. Ct. Arb. 2006) (also available at <http://www.pca-cpa.org/upload/files/Final%20Award.pdf>); see also Maritime Delimitation (Guy. v. Surin.), 110 (Perm. Ct. Arb. 2007), available at <http://www.pca-cpa.org/upload/files/Guyana-Suriname%20Award.pdf> (the Tribunal note at paragraphs 340-42 referenced with approval the quote from the *Barbados/Trinidad and Tobago Arbitration* and applied the two-step process). *But see* Territorial Sea and Maritime Dispute (Nicar. v. Hond.), 46 I.L.M. 1053, 1102-05 (Perm. Ct. Arb. 2007) (the International Court of Justice considered but did not adopt the two-step approach for all of the delimitation area given the particular geographical circumstances involved).

89. North Sea Continental Shelf Cases, *supra* note 36, ¶ 75.

90. CHURCHILL & LOWE, *supra* note 58, at 188.

91. Churchill and Lowe note that security considerations may also be a circumstance. *Id.* at 189. They also comment:

Courts and tribunals have also been consistent in holding a variety of other factors to be irrelevant. These include socio-economic factors, such as disparities in the wealth and size of population of each party; differences in the area of land territory belonging to each party; and normally the natural resources and ecology of the delimitation area.

Id. at 190.

92. David A. Colson, *The Delimitation of the Outer Continental Shelf Between*

geological and geomorphological factors consistent with the idea of physical, natural, prolongation of a State may assert themselves as significant in bilateral continental shelf boundary delimitation.⁹³

III. ARCTIC STATES AND THE CONTINENTAL MARGIN BEYOND 200-N. MILES

A. *The Russian Federation*

In 2001, the Russian Federation became the first State to make a submission to the Commission respecting its proposed outer limit of continental shelf beyond 200-n. miles.⁹⁴ As regards the central Arctic Ocean, the proposed outer limit to the east is a straight line projection of the maritime boundary agreed upon in the 1990 U.S.–Russia Agreement, ending at the North Pole. The 1990 Agreement provides that the maritime boundary between the States is to follow the 168°58'37" West Meridian “as far as permitted under international law.”⁹⁵ However, the Russian meridian line extends well beyond where Russia and the United States appear to have potential overlapping continental margin claims and to an area that might possibly be claimed by Canada and/or is part of the deep ocean floor. The assumption appears to be that on the Russian side of the meridian the Alpha, Mendeleev, and Lomonosov Ridges are “components of the continental margin[.]”⁹⁶ pursuant to Article 76(6), and not submarine ridges to which the 350-n. mile limit applies or oceanic ridges that are not part of the continental margin. The much-discussed Lomonosov Ridge has been described as a “sliver of continental crust that was rifted from the outermost Barents-Kara continental shelf”⁹⁷ and, as a result, is arguably a natural prolongation of the Russian land territory. It has been suggested that the termination of Russia’s outer limit on the Lomonosov Ridge at the North Pole corresponds with the Russian view that its natural prolongation does not extend into the Western Hemisphere.⁹⁸ A possible rationale for the Russian

Neighboring States, 97 AM. J. INT’L L. 91, 107 (2003).

93. *See id.*

94. Russian Federation, *Executive Summary*, *supra* note 24, at 12.

95. U.S.–Russ. Maritime Boundary Agreement, *supra* note 14, art. 2(1).

96. The Deputy Minister of Natural Res. of the Russ. Fed’n, *Statement During Presentation of the Submission Made by the Russian Federation to the Commission*, p. 5, *delivered to the Commission of the Law of the Sea*, U.N. Doc. CLCS/31 (Apr. 5, 2002).

97. Arthur Grantz, *Treatment of Ridges and Borderlands Under Article 76 of the United Nations Convention on the Law of the Sea: The Example of the Arctic Ocean*, in LEGAL AND SCIENTIFIC ASPECTS OF CONTINENTAL SHELF LIMITS, *supra* note 33, at 207.

98. *See* Tomasz Górski, *A Note on Submarine Ridges and Elevations with Special Reference to the Russian Federation and the Arctic Ridges*, 40 OCEAN DEV. & INT’L L. 51, 52,

meridian-line seaward of the intersection with the U.S. claim is the sector theory, where the Russians claim offshore jurisdiction based on straight lines projected to the North Pole. Although it has been reported that at various times Russian officials have denied the relevance of the sector theory and the use of sector lines to claim ocean jurisdiction,⁹⁹ the sector theory has remained alive in Russia.¹⁰⁰ It has been hypothesized that the Russian Federation's meridian line was suggesting to the other Arctic States adoption "of some kind of 'sectoral division' of the Arctic Ocean seafloor."¹⁰¹

To the west, in the area of the Barents Sea north of Norway (Spitsbergen) and Franz Joseph Land, the Russian line follows a so-called sector line, long asserted by Russia in its overlapping claims dispute with Norway in this area, delineating its claim to waters in the Barents Sea.¹⁰² The straight line extends just beyond the Russian claimed 200-n. mile limit to a point described in the Executive Summary as being 60-n. miles from the foot of the slope. Thus, while the sector line is used in the area between Russia and Norway (Spitsbergen) it is not used seaward to the North Pole. The remainder of the proposed outer limit line is based upon a combination of points using the outer limit of the 200-n. mile zone, 60-n. miles from the foot of the slope, and the 1% sediment thickness rule, creating a configuration that indicates that the Gakkel Ridge is part of the deep ocean floor, but that there is a substantial area of continental margin based, as stated above, on the Lomonosov Ridge being a component of the continental margin and not a submarine nor an oceanic ridge. According to the Executive Summary, no use is made of the 350-n. miles or 100-n. miles from the 2500 metre isobath constraints lines.

The U.S. communication respecting the Russian submission raised questions primarily about the characterization of the Alpha, Mendeleev and Lomonosov Ridges.¹⁰³ The United States asserted that the Alpha-Mendeleev Ridge was a volcanic feature of oceanic

54 (2009).

99. See ERIK FRANCKX, *MARITIME CLAIMS IN THE ARCTIC: CANADIAN AND RUSSIAN PERSPECTIVES* 152-53 (1993); R. DOUGLAS BRUBAKER, *THE RUSSIAN ARCTIC STRAITS* 39 (2005).

100. See generally A.A. KOVALEV, *CONTEMPORARY ISSUES OF THE LAW OF THE SEA: MODERN RUSSIAN APPROACHES* 177-81 (W.E. Butler ed. & trans., 2003).

101. Górski, *supra* note 98, at 57.

102. See Oude Elferink, *Arctic Maritime Delimitations: The Preponderance of Similarities with Other Regions*, in *THE LAW OF THE SEA AND POLAR MARITIME DELIMITATION AND JURISDICTION*, *supra* note 6, at 185-90.

103. *United States: Notification regarding the submission made by the Russian Federation to the Commission on the Limits of the Continental Shelf*, U.N. Doc. CLCS.01.2001.LOS/USA (Mar. 18, 2002).

origin, and thus “not part of any State’s continental shelf.”¹⁰⁴ In the U.S. view the Lomonosov Ridge was “a freestanding feature in the deep, oceanic part of the Arctic Ocean Basin, and not a natural component of the continental margins of either Russia or any other State.”¹⁰⁵ The consequence of this was that the United States was taking issue with the apparent assumption underlying the Russian extension of the meridian to the North Pole in the 1990 bilateral Agreement.

The Russian Executive Summary noted that there was a need to agree on a bilateral boundary with Norway (Spitsbergen) in the Barents Sea and similarly with its “neighbor[s]” (Canada and/or Denmark/Greenland) in the area near the North Pole.¹⁰⁶ In a March 2002 note verbale, Norway made its views clear regarding the information in the Russian Executive Summary, stating that there existed a “maritime dispute” between the two States in the Barents Sea that included the area in the central Arctic Ocean. The Norwegian note further stated that the information presented by Russia was “without prejudice” to bilateral delimitation, and the actions of the Commission “shall . . . not prejudice” delimitation of the continental shelf between Norway and the Russian Federation.¹⁰⁷ Norway indicated that, based on the above understandings, it consented to the Commission examining the Russian submission with regard to the areas it regarded as under dispute.¹⁰⁸ Denmark’s response was that it was “not able to form an opinion on the . . . submission,” was not able to determine whether the Russian claim would overlap with Denmark/Greenland shelf claim beyond 200-n. miles, and that Denmark’s “absence of opinion” did not imply agreement with or acquiescence to the submission by the Russian Federation.¹⁰⁹ Denmark indicated that the actions of the Commission, including any recommendations, and the Russian submission were without prejudice to delimitation of the continental shelf between the two countries.¹¹⁰ Canada’s January 2002 note verbale also noted that it was “not in a position” to evaluate Russia’s submission without

104. *Id.* at 2.

105. *Id.* at 3.

106. See Russian Federation, *Executive Summary*, *supra* note 24, points 1-6, 30-32.

107. Norway: *Notification regarding the submission made by the Russian Federation to the Commission on the Limits of the Continental Shelf*, U.N. Doc. CLCS.01.2001.LOS/NOR (Apr. 2, 2002).

108. *Id.*

109. Denmark: *Notification regarding the submission made by the Russian Federation to the Commission on the Limits of the Continental Shelf*, U.N. Doc. CLCS.01.2001.LOS/DNK (Feb. 26, 2002).

110. *Id.*

further information and that its inability to comment “should not be interpreted as either agreement or acquiescence” respecting the Russian submission.¹¹¹ Moreover, Canada noted that the submission and recommendations by the Commission were “without prejudice” to bilateral delimitation matters.¹¹²

As provided for under the LOS Convention, the Commission adopted and provided to the Russian Federation recommendations respecting the submitted information. As regards the Barents Sea, presumably including the area extending into the Central Arctic Ocean, the Commission recommended that when a maritime boundary agreement was completed between Norway (Spitsbergen) and the Russian Federation, the relevant charts and coordinates should be transmitted to the Commission.¹¹³ Respecting the central Arctic Ocean, the Commission recommended “that the Russian Federation make a revised submission . . . based on the findings contained in the recommendations” of the Commission.¹¹⁴

Consistent with its obligations under the LOS Convention where there is a disagreement between the recommendations of the Commission and the submitting State,¹¹⁵ the Russian Federation is preparing to make a revised submission to the Commission. It is worth noting that the relationship or process between the Commission and a submitting coastal State “was envisaged . . . as being a narrowing down ‘ping-pong’ procedure”—State submission, Commission recommendations, State resubmission, Commission recommendations, etc.—with the submitting State acting in good faith and the Commission eventually achieving accord.¹¹⁶ However, it is important to note that there is no legislated endpoint to the “ping-pong” process¹¹⁷

111. *Canada: Notification Regarding the Submission Made by the Russian Federation to the Commission on the Limits of the Continental Shelf*, U.N. Doc. CLCS.01.2001.LOS/CAN (Feb. 26, 2002).

112. *Id.*

113. The Secretary-General, *Report of the Secretary-General on the Oceans and Law of the Sea, Addendum*, ¶ 39, delivered to the General Assembly, U.N. Doc. A/57/57/Add.1 (Oct. 8, 2002).

114. *Id.* ¶ 41; see also Ron Macnab & Lindsay Parson, *Continental Shelf Submissions: The Record to Date*, 21 INT'L J. MARINE & COASTAL L. 309, 311-13 (2006) (offering a brief note on the Russian reaction).

115. LOS Convention, *supra* note 18, Annex II, art. 8.

116. Piers R.R. Gardiner, *The Limits of the Area Beyond National Jurisdiction—Some Problems with Particular References to the Role of the Commission on the Limits of the Continental Shelf*, in MARITIME BOUNDARIES AND OCEAN RESOURCES 63, 69 (Gerald Blake ed., 1987).

117. “Theoretically, this process could go on indefinitely.” Robert W. Smith & George Taft, *Legal Aspects of the Continental Shelf*, in CONTINENTAL SHELF LIMITS: THE SCIENTIFIC AND LEGAL INTERFACE, *supra* note 62, at 20.

and that it is the coastal State, not the Commission, which has the legal capacity to set the State's outer limit of the continental margin.¹¹⁸

B. Norway (Spitsbergen)

The December 2006 Norwegian submission to the Commission as regards the central Arctic Ocean deals with a small area beyond the 200-n. mile limit, adjacent to Spitsbergen, with the Russian Federation located to the east and Denmark/Greenland to the west.¹¹⁹ With two exceptions where the points are based on sediment thickness, the points used to determine the proposed outer limit in this area are based on 60-n. miles from the foot of the slope.¹²⁰ It is apparent that the proposed Norwegian (Spitsbergen) outer limit line is well inside the constraint lines.¹²¹ As already noted, both the Russian Federation and Denmark/Greenland have consented to the Commission examining the submission even though there are areas in dispute, with both States indicating that any action of the Commission is "without prejudice to the bilateral delimitation."¹²² It is worth noting that to the west the Norway (Spitsbergen) continental margin outer limit meets the Denmark/Greenland 200-n. mile zone limit, whereas to the east Norway (Spitsbergen) and the Russian Federation share an area of margin beyond 200-n. miles. The 2006 Denmark/Greenland-Norway (Spitsbergen) Agreement refers in the preamble to the intention of the parties "to revert to the delimitation of the continental shelf beyond 200-n. miles in connection with the establishment of the outer limits of the continental shelf."¹²³

In a nod to the uncertainty respecting the exercise of offshore rights adjacent to Norway (Spitsbergen),¹²⁴ Article 3 of the 2006 Agreement notes that it is "without prejudice" to the views of the States regarding jurisdiction over the sea and the seabed.¹²⁵ The Russian Federation communication notes that it is not to prejudice its position regarding Spitsbergen and its continental shelf and that the recommendations of the Commission are also "without

118. LOS Convention, *supra* note 18, art. 76(8).

119. Norway Submission, *Executive Summary*, *supra* note 25, at fig.1, fig.2.

120. *Id.* at 14, 16.

121. *See id.* at 13, fig.4.

122. *Id.* at 12; *see also Note verbale from Denmark to the Secretary-General* (Mar. 28, 2007); *Note from the Permanent Mission of Russia to U.N.*, *supra* note 81.

123. Den./Green.-Nor. Agreement, *supra* note 15, at 376.

124. *See generally* Spitsbergen Treaty, *supra* note 8.

125. Den./Green.-Nor. Agreement, *supra* note 15, at 376.

prejudice” to the provisions of the 1920 Spitsbergen Treaty and the regime of maritime space adjacent to Spitsbergen.¹²⁶

It is anticipated that the Commission may be in a position to produce its recommendations to Norway in 2009.¹²⁷

C. Canada

Canada has produced a map based on a desktop study respecting its possible continental margin area beyond 200-n. miles in the central Arctic Ocean.¹²⁸ The map shows a significant area of margin beyond 200-n. miles extending all along Canada’s Arctic 200-n. mile zone. The map indicates that Canada’s margin areas in the eastern Arctic are based on the Alpha and Lomonosov Ridges. The margins in these areas are defined using the criterion of 60-n. miles from the foot-of-the-slope.¹²⁹ It appears that Canada’s view mirrors that of the Russian Federation that the Alpha, Medeleev and Lomonosov Ridges are natural components of the continental shelf, albeit the Canadian continental shelf and not the Russian continental shelf, and that these features are neither submarine nor oceanic ridges. In August 2008, Canada announced that recent surveys indicated that the “Lomonosov Ridge is attached to the North American and Greenland plates,”¹³⁰ which appears to run counter to earlier findings noted above that the Lomonosov Ridge rifted from the outermost Barents-Kara continental shelf.¹³¹ It has been noted that it is conceivable that the end of the Lomonosov Ridge remained attached to the margin of North American plate as the latter separated from the Eurasian plate.¹³²

According to the desktop study map, Canada also has a large area of margin beyond 200-n. miles in the Beaufort Sea/Canadian

126. *Note from the Permanent Mission of Russia to U.N.*, *supra* note 81.

127. The Chairman of the Comm’n on the Limits of the Cont’l Shelf, *Statement on the Progress of Work in the Commission*, ¶ 18, U.N. Doc. CLCS/60 (Sept. 26, 2008).

128. See Can. Dep’t of Foreign Affairs & Int’l Trade [CDFAIT], <http://www.international.gc.ca/continental/program-canada-programme.aspx?lang=eng> (last visited June 27, 2009).

129. Jacob Verhoef & Dick MacDougall, *Delineating Canada’s Continental Shelf According to the United Nations Convention on the Law of the Sea*, 3 J. OCEAN TECH. 1, 4 (2008).

130. Press Release, Natural Res. Can., Government of Canada Welcomes New Mapping Data on Canada’s North, (Aug. 8, 2008) [hereinafter Press Release, New Mapping Data], <http://www.nrcan-rncan.gc.ca/media/newcom/2008/200856-eng.php> (last visited June 27, 2009).

131. Grantz, *Treatment of Ridges and Borderlands Under Article 76 of the United Nations Convention on the Law of the Sea: The Example of the Arctic Ocean*, in LEGAL AND SCIENTIFIC ASPECTS OF CONTINENTAL SHELF LIMITS, *supra* note 33, at 207.

132. Interview with Ron Macnab, Marine Geophysicist, Bedford Inst. of Oceanography.

Basin area. In this area, the key criteria would be sediment thickness.¹³³

It is unclear from the map if the constraints lines (100-n. miles from 2,500 metre isobath or 350-n. miles) apply. In the area of the Alpha and Mendeleev Ridges it is apparent that Canada's outer limit is well beyond 400-n. miles from its nearest Arctic islands.

Whatever flirtation Canada may have had over the years respecting the sector theory as a basis for claiming jurisdiction in the Arctic Ocean,¹³⁴ Canada's approach to the continental margin beyond 200-n. miles, based on the map generated by the desktop study, is a refutation of the sector theory.

D. United States

In 1980, the United States made clear its view that the Chukchi plateau and its component elevations north of Alaska fit the category of submarine elevations and, as such, were not subject to the 350-n. mile limitation applicable to submarine ridges.¹³⁵ The concern of the United States was the potential for "significant oil and gas reserves" in the Chukchi plateau.¹³⁶ The 2002 U.S. desktop study indicates that there is extensive thickness of sediment in the areas north of the Chukchi Cap and Northwind Ridge and within the Canadian Basin north of the Beaufort Sea.¹³⁷ Adjacent to the Chukchi Cap and Northwind Ridge, the desktop study indicates that the constraint line of 100-n. miles from the 2500 metre isobath is applicable, which places the outer limit at approximately 600-n. miles from Alaska, whereas in the Canadian Basin the outer limit is determined by the 350-n. mile limit.¹³⁸ Subsequent research trips have resulted in identification of

133. Verhoef & MacDougall, *supra* note 129, at 2.

134. Canada has had an "ambiguous position regarding the sector principle" and "maintains a position that neither claims nor disclaims the sector." K. M. Shusterich, *International Jurisdictional Issues in the Arctic Ocean*, in W.E. WESTERMEYER & K.M. SHUSTERICH, *UNITED STATES ARCTIC INTERESTS: THE 1980S AND 1990S*, at 253 (Springer-Verlag 1984); *see also* DONAT PHARAND, *CANADA'S ARCTIC WATERS IN INTERNATIONAL LAW* 3-87 (1988) (providing a full history of Canada's relationship with the sector theory and concludes that the sector theory does not provide a basis in international law for offshore jurisdiction).

135. Elliot Richardson, U.S. Ambassador, Statement, (Apr. 3, 1980) in 13 OFFICIAL RECORDS OF THE THIRD UNITED NATIONS CONFERENCE ON THE LAW OF THE SEA at 43 (New York 1981).

136. Message from President of U.S., *supra* note 72, at 56.

137. LARRY MAYER ET AL., CTR. FOR COASTAL & OCEAN MAPPING & JOINT HYDROGRAPHIC CTR., UNIV. OF N.H., *THE COMPILATION AND ANALYSIS OF DATA RELEVANT TO A U.S. CLAIM UNDER UNITED NATIONS LAW OF THE SEA ARTICLE 76: A PRELIMINARY REPORT* (2002), available at http://ccom.unh.edu/publications/Mayer_02_Compilation_analysis_data_relevant_to_UNCLOS_76.pdf.

138. *See id.* at fig.5.10A, fig. 5.10B.

previously unknown seamounts and improved understanding of the foot-of-the-slope and the 2500 metre isobath. As a consequence, in February 2008 it was announced that the foot-of-the-slope in the Chukchi Cap and Northwind Ridge area might be more than 100-n. miles further seaward than previously assumed.¹³⁹ It was not clear whether this would affect the outer limit of the margin based on the 100-n. miles from the 2500-metre isobath criteria that was shown in the 2002 desktop study.

E. Denmark/Greenland

Following Denmark's 2004 ratification of the LOS Convention, the Ministry for Science, Technology, and Innovation launched the Danish Continental Shelf Project.¹⁴⁰ Two features of interest to Denmark in the central Arctic Ocean are the Lomonosov Ridge and the Morris Jessup Rise, the latter located to the northeast of Greenland and jutting into the Amundsen Basin. These features are "assumed natural prolongations of northern Greenland."¹⁴¹ As noted above, Canada has announced that the results of survey work, jointly done between Canada and Denmark, "demonstrates that the . . . Lomonosov Ridge is attached to the North American and Greenland plates."¹⁴² In 2007, the first Danish ship-borne research activity respecting the continental shelf took place in the Arctic Ocean through a cooperative project involving Sweden and a Russian nuclear icebreaker.¹⁴³

F. Formal Research Cooperation

The May 2008 Ilulissat Declaration notes that the five Arctic Ocean States "cooperate closely" respecting "the collection of scientific data concerning the continental shelf" and that the

139. See U.S. Nat'l Oceanic & Atmospheric Admin., UNH-NOAA Ocean Mapping Expedition Yields New Insights into Arctic Depths (Feb. 11, 2008), http://www.noaanews.noaa.gov/stories2008/20080211_arctic.html; see also LARRY A. MAYER & ANDY ARMSTRONG, CRUISE REPORT: USCG ICEBREAKER HEALY, (Sept. 20, 2007), http://ccom.unh.edu/publications/Mayer_04_cruise_report_HE-0405.pdf.

140. Den. Ministry of Sci. Tech. & Innovation, The Continental Shelf Project, http://a76.dk/lang_uk/main.html (last visited June 26, 2009).

141. Christian Marcussen et al., *Exploring for Extended Continental Shelf Claims off Greenland and the Faroe Islands—Geological Perspectives*, 4 GEOLOGICAL SURV. DEN. & GREEN. BULL. 61, 63 (2004).

142. Press Release, New Mapping Data, *supra* note 130.

143. Jan M. Olsen, *Denmark Maps Arctic Ridge in Race for Polar Sovereignty*, INT'L HERALD TRIB. (Europe), Aug. 10, 2007; Christian Marcussen, Lomonosov Ridge Off Greenland (LOMROG) 2007: Danish Continental Shelf Project, http://a76.dk/expeditions_uk/lomrog2007_uk/lomonosov_cma_2007.html (last visited June 26, 2009).

States are to strengthen this cooperation.¹⁴⁴ There is indeed a high degree of formal cooperation amongst the Arctic Ocean States on data collection respecting continental shelf matters.

As noted above, Denmark's 2007 at-sea shelf research project involved cooperation with Canada and Sweden. The Canadian-Danish at-sea cooperation was the continuation of activities undertaken pursuant to the June 2005 agreement between the Canadian and Danish Geological Surveys to joint surveying in the ocean area north of Greenland and Ellesmere Island (Canada).¹⁴⁵ In 2006 Canada and Denmark engaged in a joint on-ice expedition called the Lomonosov Ridge Test of Appurtenance (LORITA), designed to assess the affinity of the Ridge with the nearby continental region.¹⁴⁶ It is the report of this activity that led Canada to announce that the Lomonosov Ridge is attached to the North American and Greenland plates.¹⁴⁷ In June 2008, it was announced that Canadian and U.S. icebreakers would be cooperating in activities designed to map jointly the Canadian Basin located north of the Beaufort Sea.¹⁴⁸

IV. CONCLUSION

Four of the five Arctic Ocean Basin States (Canada, Denmark, Russian and the United States) are undertaking challenging scientific work and expending significant resources to better understand the ocean floor of the central Arctic Ocean. Norway is awaiting the recommendations of the Commission regarding whether more technical work on their proposed outer limits of the shelf beyond 200-n. miles adjacent to Spitsbergen is or is not necessary. The immediate context of all this activity is the requirements and expectations of the LOS Convention respecting the outer limits of national continental shelf areas beyond 200-n. miles. The time frame (10 years) suggested in the LOS Convention

144. The Ilulissat Declaration, *supra* note 21, ¶ 7.

145. Press Release, Natural Res. Can., Undersea Data: Canada and Denmark Agree on Joint Survey, (July 14, 2005) [hereinafter Press Release, Undersea Data], http://www.eurekaalert.org/pub_releases/2005-07/nrc-udc071405.php; CDFAIT, International Collaboration, <http://www.international.gc.ca/continental/collaboration.aspx> (last visited June 26, 2009).

146. See CDFAIT, International Collaboration, *supra* note 145; Cont'l Shelf Project, LORITA-1 (Lomonosov Ridge Test of Appurtenance): Fieldwork During April/May 2006 North of Canada/Greenland, http://a76.dk/expeditions_uk/lorita-1_uk/index.html (last visited June 27, 2009); *Scientists Continue to Map Disputed Arctic Ridge*, CBC NEWS, Apr. 16, 2007, <http://www.cbc.ca/canada/north/story/2007/04/16/north-ridge.html>.

147. Press Release, *New Mapping Data*, *supra* note 130.

148. *Canada, U.S. to Team Up on Arctic Seabed Mapping Project*, CBC NEWS, June 30, 2008, <http://www.cbc.ca/technology/story/2008/06/30/cda-mapping.html>.

for coastal States to submit outer limits information combined with the previous lack of knowledge of the seafloor in the central Arctic Ocean and the complexity of the Article 76 criteria has galvanized the activity. The 2001 Russian submission to the Commission and the consequent publicity of the maps showing Russia's proposed outer limits in the central Arctic Ocean has also played an important role in motivating Canada, Denmark, Norway, and the United States to develop the necessary information to better assess the consequences of the Russian proposal and their own continental shelf beyond 200-n. mile ambitions.

As regards the seafloor of the central Arctic Ocean, the alleged "scramble" and "conflict" amongst the States is much over-hyped. The States are operating within the existing multilateral legal and political framework through which, amongst other things, coastal States have rights to resources of the continental shelf beyond 200-n. miles, where the physical area is a natural prolongation of the landmass. While some overlapping claims to shelf areas beyond 200-n. miles seem inevitable, this situation of conflicting maritime boundary claims exists throughout the world and is not unique to the Arctic Ocean Basin. As elsewhere, it will be up to the relevant States to work out a resolution or management of their offshore boundary disputes with their neighbors.

APPENDIX I: DOCUMENT

The Ilulissat Declaration**Arctic Ocean Conference
Ilulissat, Greenland, 27-29 May 2008**

At the invitation of the Danish Minister for Foreign Affairs and the Premier of Greenland, representatives of the five coastal States bordering on the Arctic Ocean - Canada, Denmark, Norway, the Russian Federation and the United States of America - met at the political level on 28 May 2008 in Ilulissat, Greenland, to hold discussions. They adopted the following declaration:

The Arctic Ocean stands at the threshold of significant changes. Climate change and the melting of ice have a potential impact on vulnerable ecosystems, the livelihoods of local inhabitants and indigenous communities, and the potential exploitation of natural resources.

By virtue of their sovereignty, sovereign rights and jurisdiction in large areas of the Arctic Ocean the five coastal states are in a unique position to address these possibilities and challenges. In this regard, we recall that an extensive international legal framework applies to the Arctic Ocean as discussed between our representatives at the meeting in Oslo on 15 and 16 October 2007 at the level of senior officials. Notably, the law of the sea provides for important rights and obligations concerning the delineation of the outer limits of the continental shelf, the protection of the marine environment, including ice-covered areas, freedom of navigation, marine scientific research, and other uses of the sea. We remain committed to this legal framework and to the orderly settlement of any possible overlapping claims.

This framework provides a solid foundation for responsible management by the five coastal States and other users of this Ocean through national implementation and application of relevant provisions. We therefore see no need to develop a new comprehensive international legal regime to govern the Arctic Ocean. We will keep abreast of the developments in the Arctic Ocean and continue to implement appropriate measures.

The Arctic Ocean is a unique ecosystem, which the five coastal states have a stewardship role in protecting. Experience has

shown how shipping disasters and subsequent pollution of the marine environment may cause irreversible disturbance of the ecological balance and major harm to the livelihoods of local inhabitants and indigenous communities. We will take steps in accordance with international law both nationally and in cooperation among the five states and other interested parties to ensure the protection and preservation of the fragile marine environment of the Arctic Ocean. In this regard we intend to work together including through the International Maritime Organization to strengthen existing measures and develop new measures to improve the safety of maritime navigation and prevent or reduce the risk of ship-based pollution in the Arctic Ocean.

The increased use of Arctic waters for tourism, shipping, research and resource development also increases the risk of accidents and therefore the need to further strengthen search and rescue capabilities and capacity around the Arctic Ocean to ensure an appropriate response from states to any accident. Cooperation, including on the sharing of information, is a prerequisite for addressing these challenges. We will work to promote safety of life at sea in the Arctic Ocean, including through bilateral and multilateral arrangements between or among relevant states.

The five coastal states currently cooperate closely in the Arctic Ocean with each other and with other interested parties. This cooperation includes the collection of scientific data concerning the continental shelf, the protection of the marine environment and other scientific research. We will work to strengthen this cooperation, which is based on mutual trust and transparency, inter alia, through timely exchange of data and analyses.

The Arctic Council and other international fora, including the Barents Euro-Arctic Council, have already taken important steps on specific issues, for example, with regard to safety of navigation, search and rescue, environmental monitoring and disaster response and scientific cooperation, which are relevant also to the Arctic Ocean. The five coastal states of the Arctic Ocean will continue to contribute actively to the work of the Arctic Council and other relevant international fora.

APPENDIX 2: FIGURES

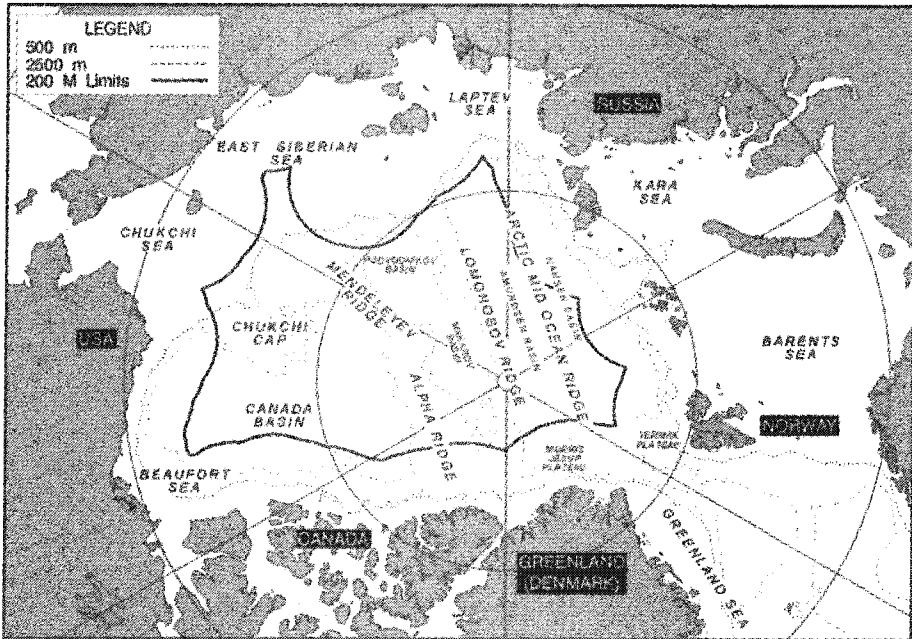


Figure 1. Central Arctic Ocean showing the 200-n. mile limits of the adjacent coastal States.

Source: Ron Macnab, Paul Neto & Rob van de Poll, *Cooperative Preparations for Determining the Outer Limit of the Juridical Continental Shelf in the Arctic Ocean: A Model for Regional Collaboration in Other Parts of the World?*, 9 BOUNDARY & SEC. BULL. (Int'l Boundaries Res. Unit), Spring 2001, at 86, 87 fig.1, available at <http://www.dur.ac.uk/ibru/publications/view/?id=183>.

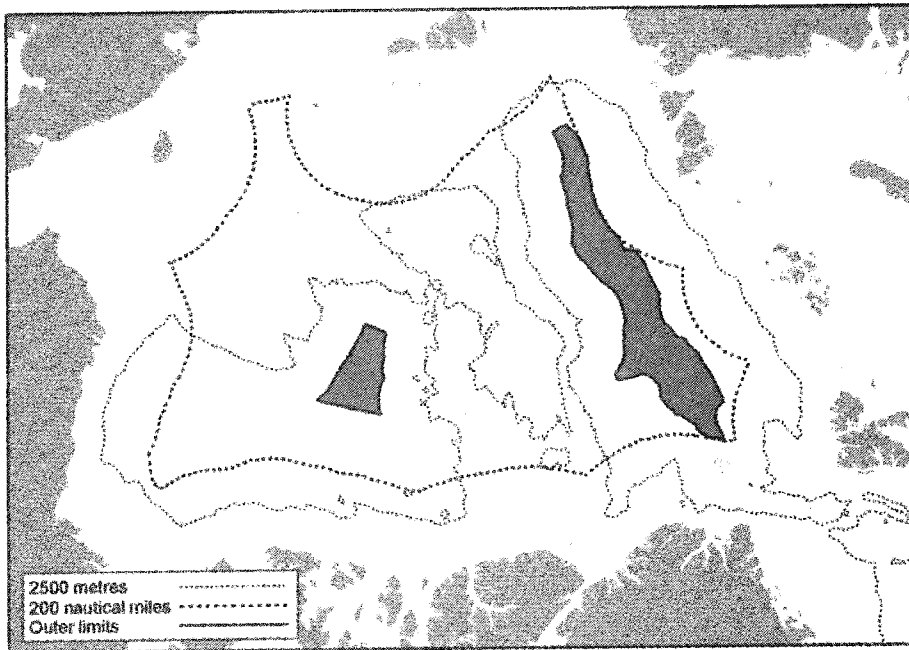


Figure 2. Central Arctic Ocean showing two areas beyond the outer limits of the adjacent States continental shelves based on the ridges as natural prolongations of the land masses. The mineral resources of these areas would be under the jurisdiction of the International Seabed Authority.

Source: Ron Macnab, Paul Neto & Rob van de Poll, *Cooperative Preparations for Determining the Outer Limit of the Juridical Continental Shelf in the Arctic Ocean: A Model for Regional Collaboration in Other Parts of the World?*, 9 BOUNDARY & SEC. BULL. (Int'l Boundaries Res. Unit), Spring 2001, at 86, 95 fig.10, available at <http://www.dur.ac.uk/ibru/publications/view/?id=183>.

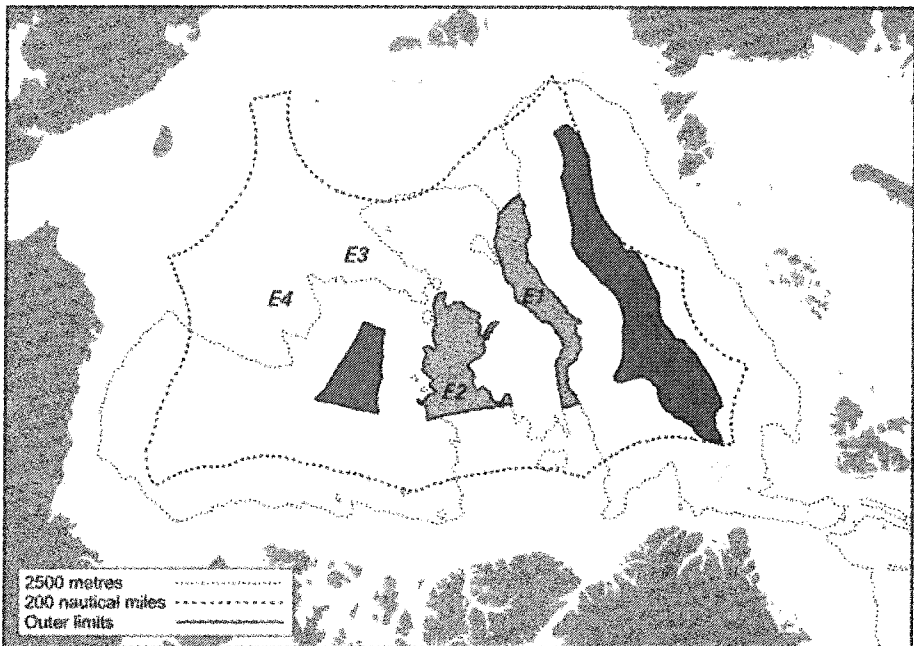


Figure 3. Central Arctic Ocean showing four areas beyond the outer limits of the adjacent States continental shelves based application of the 350-n. mile cut-off on some of the ridges.

Source: Ron Macnab, *The Outer Limit of the Continental Shelf in the Arctic Ocean*, in LEGAL AND SCIENTIFIC ASPECTS OF CONTINENTAL SHELF LIMITS at 302, 304-05, fig.5 (Myron H. Nordquist, John Norton Moore & Tomas H. Heidar eds., Leiden, Martinus Nijhoff 2004).

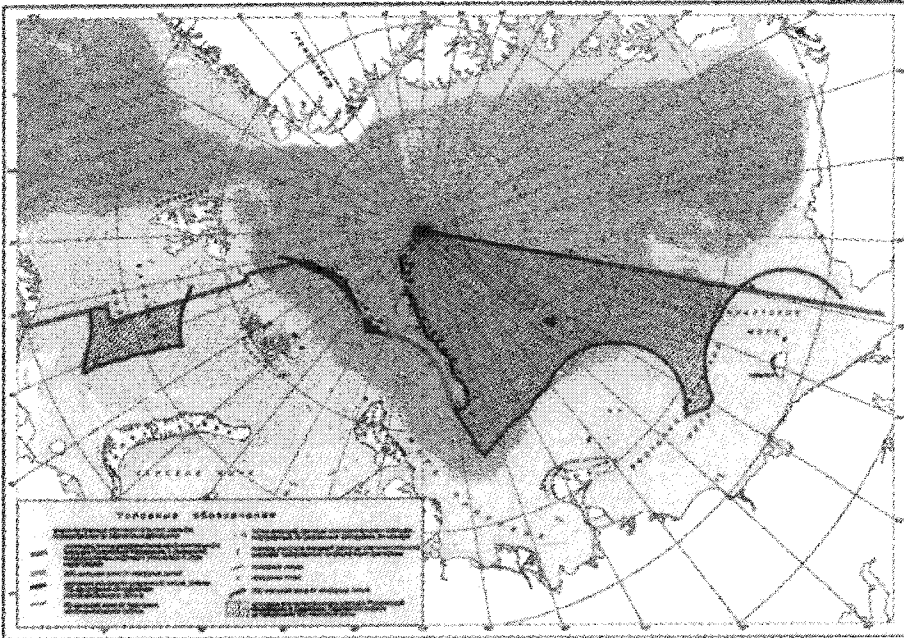


Figure 4. Map accompanying the Russian Federation submission to the Commission on the Limits of the Continental Shelf.

Source: Russian Fed'n, *Continental Shelf Submission, Executive Summary*, CLCS.01.2001.LOS (Dec. 20, 2001), available at http://www.un.org/Depts/los/clcs_new/submissions_files/submission_rus.htm (Map 2).

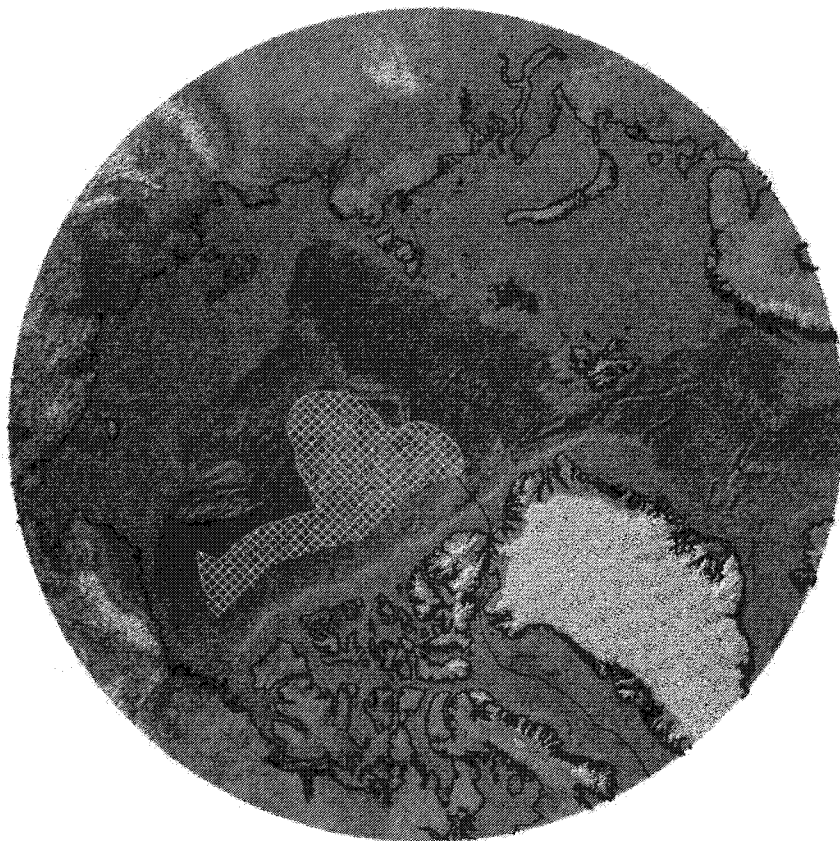


Figure 5. Map based on a desktop study prepared by Canada.

Source: Foreign Aff. & Int'l Trade Can., Canada's Program, fig.5, <http://www.international.gc.ca/continental/program-canada-programme.aspx?lang=eng> (last visited Jan 23, 2010).

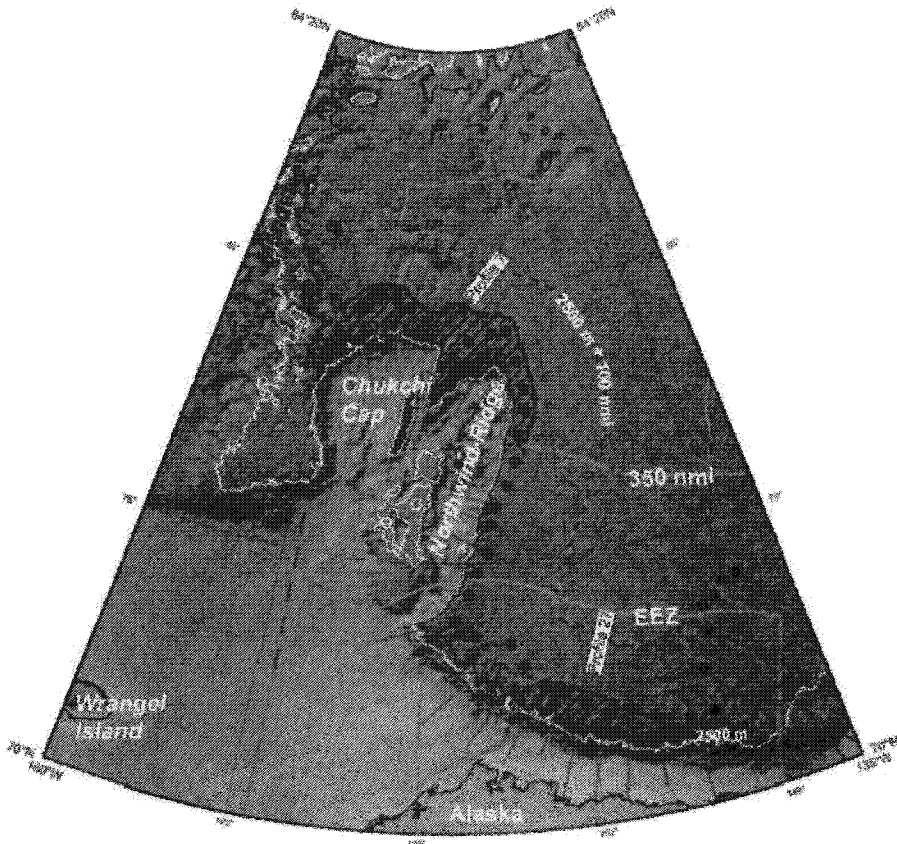


Figure 6. Map based on a U.S. desktop study.

Source: LARRY MAYER, MARTIN JAKOBSSON & ANDREW ARMSTRONG, *THE COMPILATION AND ANALYSIS OF DATA RELEVANT TO A U.S. CLAIM UNDER UNITED NATIONS LAW OF THE SEA ARTICLE 76: A PRELIMINARY REPORT*, at fig.5.10B (Durham, N.H., Ctr. for Coastal & Ocean Mapping & Joint Hydrographic Ctr., Univ. of N.H., May 2002), available at http://ccom.unh.edu/publications/Mayer_02_Compilation_analysis_data_relevant_to_UNCLOS_76.pdf.

