



# JOURNAL OF TRANSNATIONAL LAW & POLICY

## SYMPOSIUM: ARCTIC LAW IN AN ERA OF CLIMATE CHANGE

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The Continental Shelf Beyond 200 nm:  
Law and Politics in the Arctic Ocean.....*Ted McDorman*

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### COMMENTS:

Sovereignty in the Arctic: An Analysis of  
Territorial Disputes & Environmental  
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International Climate Change Liability: A  
Myth or a Reality?.....*Jennifer Kilinski*



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This issue is dedicated to  
Professor Gabriel Wilner (1938-2010)  
who inspired the creation of the *Journal of Translational  
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**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.<sup>1</sup> 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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\* Faculty of Law, University of Victoria, Victoria, British Columbia, Canada. This paper is an expanded version of a paper presented at a conference in Oslo, Norway, August 21-23, 2008 and to be published as *The Outer Continental Shelf in the Arctic Ocean: Legal Framework and Recent Developments*, in *LAW, TECHNOLOGY AND SCIENCE FOR OCEANS IN GLOBALIZATION* (Davor Vidas, ed., Leiden, The Netherlands, Martinus Nijhoff) (forthcoming 2010).

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,<sup>2</sup> 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

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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](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.<sup>3</sup>

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.<sup>4</sup> 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.”<sup>5</sup>

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.<sup>6</sup> Norway has claimed a 200-n. mile Fisheries Protection Zone adjacent to Spitsbergen.<sup>7</sup> As a result of the 1920 Spitsbergen Treaty,<sup>8</sup> there are issues respecting the rights of Norway and other

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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.<sup>9</sup>

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,<sup>10</sup> Canada and Denmark/Greenland in the Lincoln Sea,<sup>11</sup> Denmark/Greenland and Norway (Spitsbergen) in the northern Greenland Sea,<sup>12</sup> and Norway (Spitsbergen) and the Russian Federation in the northern part of the Barents Sea.<sup>13</sup> 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,<sup>14</sup> and the 2006 Denmark/Greenland-Norway (Spitsbergen) Agreement that deals only with the 200-n. mile zone.<sup>15</sup> 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.”<sup>16</sup> 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

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ed. & trans., 2007).

9. Honnelland, *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.”<sup>17</sup>

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),<sup>18</sup> 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.<sup>19</sup> 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.<sup>20</sup> 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.”<sup>21</sup> 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.”<sup>22</sup>

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](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).<sup>23</sup>

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.<sup>24</sup> 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.<sup>25</sup> 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.<sup>26</sup>

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.<sup>27</sup> Thus, each Arctic State wants

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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](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.<sup>28</sup> 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,<sup>29</sup> 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.<sup>30</sup>

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.<sup>31</sup> 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.<sup>32</sup> 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.<sup>33</sup> New

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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 maps<sup>34</sup> 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 Shelf<sup>35</sup> and the International Court of Justice decision in the 1969 *North Sea Continental Shelf Cases*.<sup>36</sup> 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”

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(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.<sup>37</sup> At issue in the Treaty was the division of oil fields between Venezuela and Trinidad.<sup>38</sup> 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.<sup>39</sup> 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.<sup>40</sup> 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."<sup>41</sup> 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.<sup>42</sup>
- The nature of a coastal State's rights over the continental shelf is that the State exclusively<sup>43</sup> has "sovereign rights for the purpose of exploring [the continental shelf] and exploiting its natural resources."<sup>44</sup>
- Coastal State rights over the continental shelf do not

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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.<sup>45</sup> 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.”<sup>46</sup> 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.”<sup>47</sup> 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.<sup>48</sup> 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.<sup>49</sup> 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.<sup>50</sup>

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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.<sup>51</sup> 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.<sup>52</sup>

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.<sup>53</sup> 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 . . .<sup>54</sup>

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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.<sup>55</sup>

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 margin<sup>56</sup> 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.<sup>57</sup>

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(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 . . .”<sup>58</sup> 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.<sup>59</sup> 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

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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,"<sup>60</sup> 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 slope<sup>61</sup> 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"<sup>62</sup> 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

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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  $\frac{1}{100}$  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.<sup>63</sup>
- 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.<sup>64</sup>
- There is a general limitation that the continental margin does not include the ocean floor, with its oceanic ridges.<sup>65</sup>

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.<sup>66</sup>

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.”<sup>67</sup> 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.<sup>68</sup> 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.<sup>69</sup>

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.<sup>70</sup>

## 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.<sup>71</sup> The Commission is to consider the submitted material and make recommendations to

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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.<sup>72</sup>

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.<sup>73</sup> 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.<sup>74</sup>

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.”<sup>75</sup> 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.<sup>76</sup> 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

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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.<sup>77</sup>

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.<sup>78</sup> 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.”<sup>79</sup>

Annex I to the Rules of Procedure of the Commission,<sup>80</sup> 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.<sup>81</sup>

### 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.<sup>82</sup> 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.”<sup>83</sup>

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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](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,<sup>84</sup> 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.”<sup>85</sup> 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.”<sup>86</sup> 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.<sup>87</sup> 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

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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](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.<sup>88</sup>

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,<sup>89</sup> subsequent maritime boundary adjudications have limited the factors that are considered, with the emphasis being on geographic circumstances.<sup>90</sup> 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.<sup>91</sup>

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,<sup>92</sup>

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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.<sup>93</sup>

### 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.<sup>94</sup> 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.”<sup>95</sup> 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[,]”<sup>96</sup> 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”<sup>97</sup> 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.<sup>98</sup> A possible rationale for the Russian

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*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,<sup>99</sup> the sector theory has remained alive in Russia.<sup>100</sup> 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."<sup>101</sup>

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.<sup>102</sup> 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.<sup>103</sup> The United States asserted that the Alpha-Mendeleev Ridge was a volcanic feature of oceanic

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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.”<sup>104</sup> 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.”<sup>105</sup> 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.<sup>106</sup> 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.<sup>107</sup> 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.<sup>108</sup> 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.<sup>109</sup> 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.<sup>110</sup> Canada’s January 2002 note verbale also noted that it was “not in a position” to evaluate Russia’s submission without

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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.<sup>111</sup> Moreover, Canada noted that the submission and recommendations by the Commission were “without prejudice” to bilateral delimitation matters.<sup>112</sup>

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.<sup>113</sup> 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.<sup>114</sup>

Consistent with its obligations under the LOS Convention where there is a disagreement between the recommendations of the Commission and the submitting State,<sup>115</sup> 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.<sup>116</sup> However, it is important to note that there is no legislated endpoint to the “ping-pong” process<sup>117</sup>

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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.<sup>118</sup>

### 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.<sup>119</sup> 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.<sup>120</sup> It is apparent that the proposed Norwegian (Spitsbergen) outer limit line is well inside the constraint lines.<sup>121</sup> 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."<sup>122</sup> 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."<sup>123</sup>

In a nod to the uncertainty respecting the exercise of offshore rights adjacent to Norway (Spitsbergen),<sup>124</sup> 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.<sup>125</sup> 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

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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.<sup>126</sup>

It is anticipated that the Commission may be in a position to produce its recommendations to Norway in 2009.<sup>127</sup>

### 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.<sup>128</sup> 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.<sup>129</sup> 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,”<sup>130</sup> which appears to run counter to earlier findings noted above that the Lomonosov Ridge rifted from the outermost Barents-Kara continental shelf.<sup>131</sup> 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.<sup>132</sup>

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

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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.<sup>133</sup>

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,<sup>134</sup> 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.<sup>135</sup> The concern of the United States was the potential for "significant oil and gas reserves" in the Chukchi plateau.<sup>136</sup> 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.<sup>137</sup> 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.<sup>138</sup> Subsequent research trips have resulted in identification of

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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://ecom.unh.edu/publications/Mayer\\_02\\_Compilation\\_analysis\\_data\\_relevant\\_to\\_UNCLOS\\_76.pdf](http://ecom.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.<sup>139</sup> 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.<sup>140</sup> 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."<sup>141</sup> 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."<sup>142</sup> 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.<sup>143</sup>

### *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

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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](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](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](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](http://a76.dk/expeditions_uk/lomrog2007_uk/lomonosov_cma_2007.html) (last visited June 26, 2009).

States are to strengthen this cooperation.<sup>144</sup> 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).<sup>145</sup> 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.<sup>146</sup> 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.<sup>147</sup> 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.<sup>148</sup>

#### 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

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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](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](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

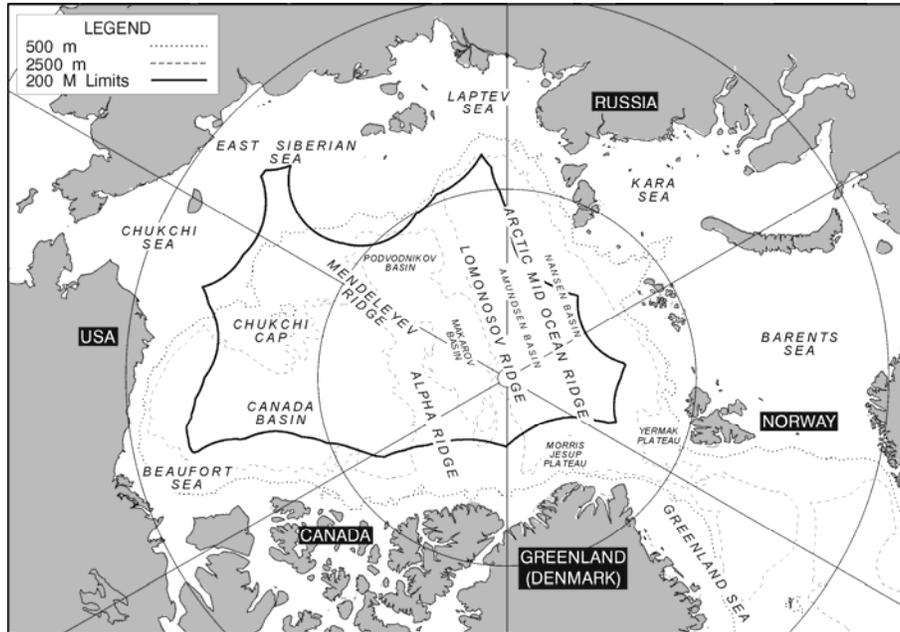
shown how shipping disasters and subsequent pollution of the marine environment may cause irreversible disturbance of the ecological balance and major harm to the livelihoods of local inhabitants and indigenous communities. We will take steps in accordance with international law both nationally and in 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.

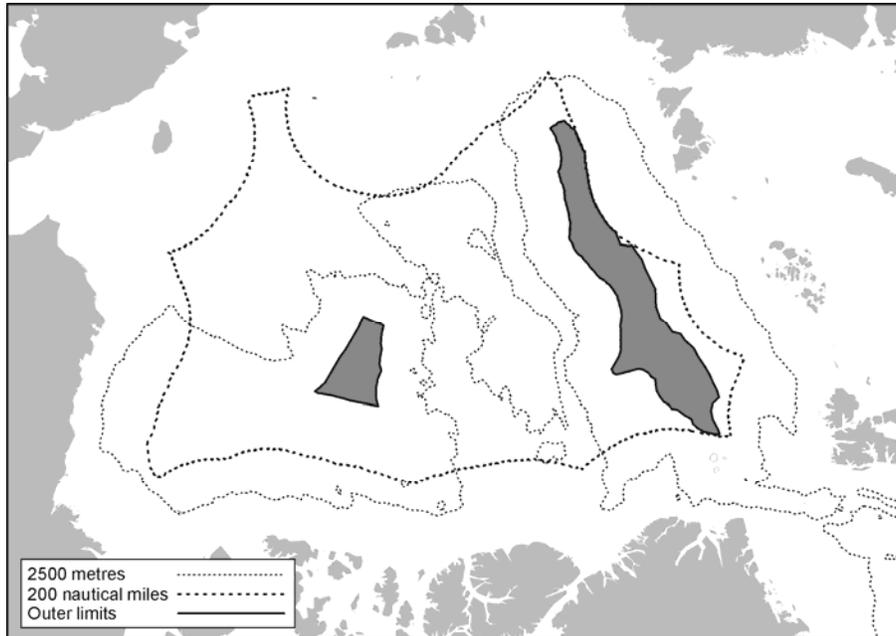
The Arctic Council and other international fora, including the Barents Euro-Arctic Council, have already taken important steps on specific issues, for example, with regard to safety of navigation, search and rescue, environmental monitoring and disaster response and scientific cooperation, which are 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



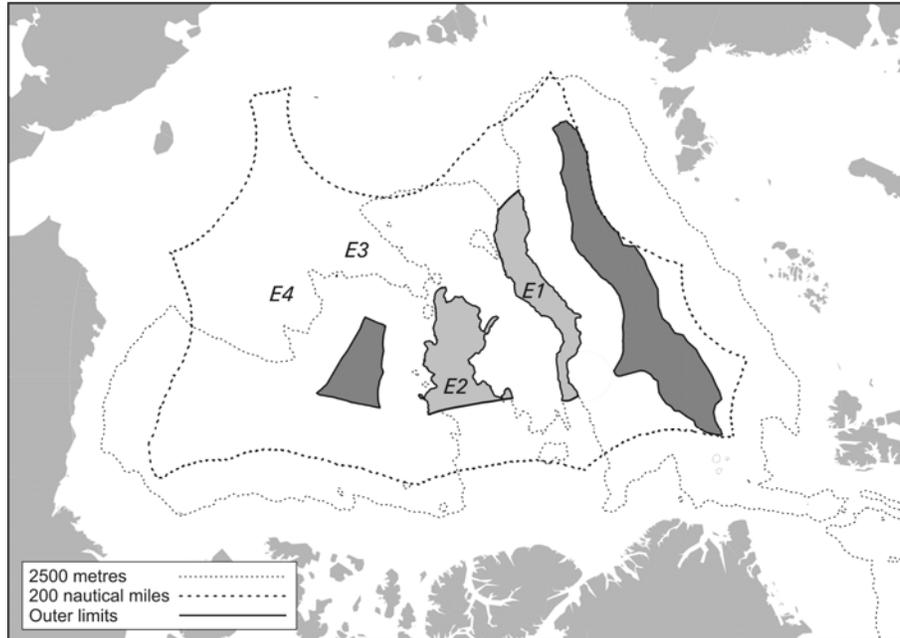
**Figure 1.** Central Arctic Ocean showing the 200-n. mile limits of the adjacent coastal States.

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>.



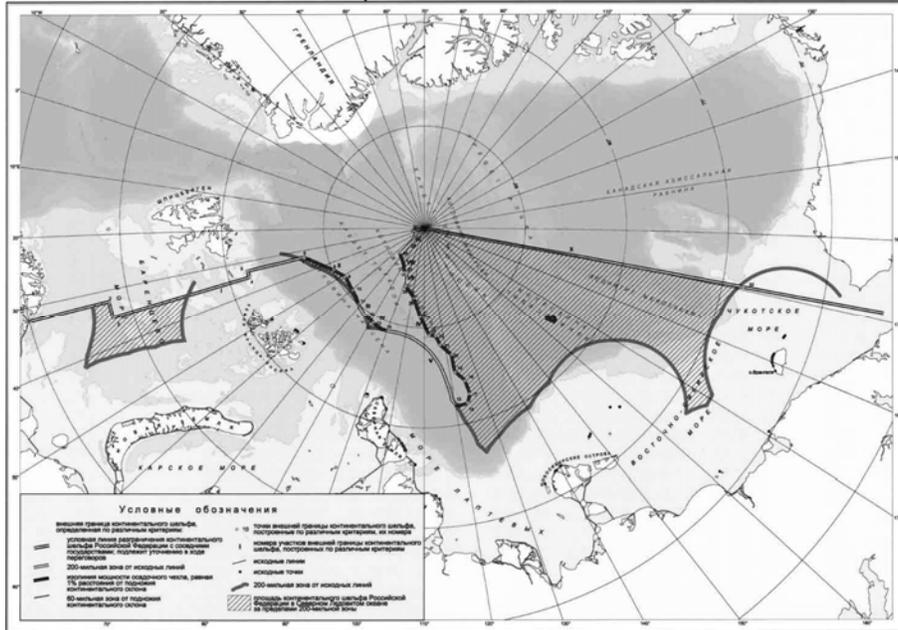
**Figure 2.** Central Arctic Ocean showing two areas beyond the outer limits of the adjacent States continental shelves based on the ridges as natural prolongations of the land masses. The mineral resources of these areas would be under the jurisdiction of the International Seabed Authority.

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/libru/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).



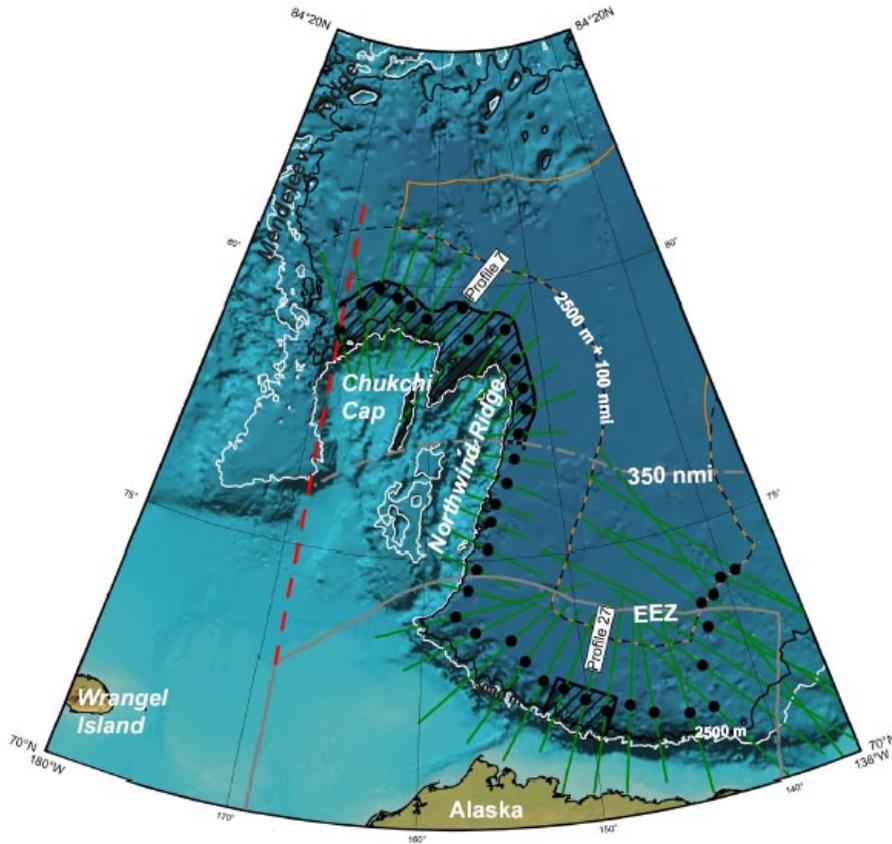
**Figure 4.** Map accompanying the Russian Federation submission to the Commission on the Limits of the Continental Shelf.

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](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](http://ccom.unh.edu/publications/Mayer_02_Compilation_analysis_data_relevant_to_UNCLOS_76.pdf).



# THE LEGAL REGIME FOR THE ARCTIC OCEAN

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*With Arctic sea ice melting at rates faster than ever before, global climate change is opening up the polar region to increased navigation, exploration, and exploitation. The “Arctic eight” nations have ignited a new competition for control of the trade routes and access to the rich deposits of resources that governments speculate might lie beneath the ice. In this article, the author explores the framework for a legal regime in the Arctic, identifying and critically assessing the agreements that govern the space, with the express intent of relating how they legally impact on human activities in the Arctic Ocean. It addresses the legal implications that flow from rules in the 1982 Law of the Sea Convention that govern offshore territorial delimitation in the region as well as the many legal regulations that affect regional fisheries, nonliving resource development, and marine environmental protection.*

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## INTRODUCTION

The great Arctic ice meltdown has begun. Within the past decade, the ice covering the Arctic Ocean has been subjected to intense, pervasive melting, presumably brought on by global climate disruption. Over the last three decades, satellite data clearly indicates that the area of ice covering the Arctic Ocean has been reduced considerably, with perhaps as much as 38,000 square miles disappearing each year.<sup>1</sup> “The ice’s seasonal shrinkage in 2007 smashed records, reaching a September minimum of 2.6 million square miles—some [twenty-three] percent smaller than the previous record, set in 2005.”<sup>2</sup> In fact, computer models predicted in 2007 that “sea ice could vanish from the Arctic ocean completely as early as 2040.”<sup>3</sup> As the heat-reflecting ice that has made the Arctic the most inaccessible and uncharted part of the earth turns into water—which absorbs heat—the shrinkage is accelerating faster than climate models ever predicted. The latter factor, known as the ice-albedo effect, works like this: as ice melts in the summer, the open ocean warms up as it absorbs the solar radiation that the ice would normally reflect back to space; as global temperatures rise, more ice melts, so there is more ocean water, which absorbs more heat, and less ice re-forms the next winter, which perpetrates the cycle.<sup>4</sup> Most researchers had anticipated that the complete disappearance of the Arctic ice pack during summer months would happen after the year 2070, but present trends suggest

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1. Ian Sample, *Arctic Ocean May Lose All its Ice by 2040, Disrupting Global Weather*, THE GUARDIAN (London), Mar. 16, 2007 at 13, available at <http://www.guardian.co.uk/environment/2007/mar/16/climatechange.climatechange/print>; Sea Ice News & Analysis, Nat’l Snow & Ice Data Ctr., *Arctic Sea Ice Younger, Thinner as Melt Season Begins*, Apr. 6, 2009 [hereinafter *Arctic Sea Ice Younger*], <http://nsidc.org/arcticseaicenews/2009/040609.html>.

2. Peter N. Spotts, *Arctic Sea Ice Melting Faster than Expected*, CHRISTIAN SCI. MONITOR, June 13, 2008, at 25; see also Press Release, Nat’l Snow & Ice Data Ctr., *Arctic Sea Ice Shatters All Previous Record Lows* (Oct. 1, 2007); available at [http://nsidc.org/news/press/2007\\_seaiceminimum/20071001\\_pressrelease.html](http://nsidc.org/news/press/2007_seaiceminimum/20071001_pressrelease.html) (last visited Aug. 2, 2009); Andrea Thompson, *While U.S. in Big Chill, Arctic Runs Fever*, LIVE SCI., Feb. 5, 2009, <http://www.livescience.com/environment/090205-arctic-update.html> (last visited Aug. 2, 2009).

3. Sample, *supra* note 1.

4. See Maggie Villiger, *The Arctic—Our Global Thermostat*, SCI. AM. FRONTIERS, June 15, 2004, <http://www.pbs.org/saf/1404/features/thermostat.htm> (last visited Aug. 2, 2009); Dagmar Budikova, *Albedo*, THE ENCYCLOPEDIA OF EARTH, Mar. 19, 2008, <http://www.eoearth.org/article/Albedo>; *Arctic Sea Ice Younger*, *supra* note 1.

that loss of all summer sea ice cover in the Arctic by 2030 may well be possible.<sup>5</sup>

The implications of these developments are stark for the region. While the loss of sea ice, like the Arctic ice pack, would not contribute to sea level rise, wildlife experts say it could alter the Arctic ecology, threatening polar bears and other mammals and sea life.<sup>6</sup> Scientists add that an ice-free Arctic could also accelerate global warming, as white-colored ice tends to deflect heat, while darker-colored water would absorb more heat.<sup>7</sup> The diminishing area of sea ice is not the only problem affecting Arctic sea ice. This ice is also getting thinner. An important consideration is the age of the ice—the older the ice, the thicker it is. Newly formed ice (about one or two years old) will only be about one meter thick, whereas ice that is closer to five years old will be between two and three meters thick.<sup>8</sup> Ice thickness is key to the survival of sea ice because thinner ice vanishes much faster in the summer than thicker ice.<sup>9</sup> In addition, the warming ocean exacerbates the diminution of sea ice in another way. Sea ice is not static; rather, it is pushed around by Arctic winds. These winds push the sea ice through places where the ocean water has warmed and the sea ice simply melts away. More ice is melting quicker than ever before.<sup>10</sup>

Now that global warming has rendered the Arctic waters more accessible to commercial navigation than ever—at the same time that the marine ecosystem is more fragile—a new competition has flared up for control of the trade routes at the top of the world and the rich deposits of resources that governments speculate might lie beneath the ice. Consequently, at the start of a new millennium, a race has begun to claim what was thought to be the icy wasteland of the frozen north and touched off increased polar rivalry among the Arctic “eight,” namely Russia, the United States, Canada, Denmark, Norway, Sweden, Finland, and Iceland.

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5. David Adam, *Loss of Arctic Ice Leaves Arctic Experts Stunned*, THE GUARDIAN (London), Sept. 4, 2007, available at <http://www.guardian.co.uk/environment/2007/sep/04/climatechange/print>.

6. See Diane Cole, *Climate Change Could Harm Penguins and Polar Bears*, U.S. NEWS & WORLD REP., Mar. 23, 2009, available at <http://www.usnews.com/articles/news/energy/2009/03/23/climate-change-could-harm-penguins-and-polar-bears.html> (last visited Aug. 2, 2009); *Endangered Arctic Animals*, 50 CONNECT, available at [http://www.50connect.co.uk/entertainment/film/new\\_releases/endangered\\_arctic\\_animals](http://www.50connect.co.uk/entertainment/film/new_releases/endangered_arctic_animals) (last visited Aug. 2, 2009).

7. Budikova, *supra* note 4.

8. See NASA, *Satellites Show Arctic Literally on Thin Ice* (Apr. 6, 2009), [http://www.nasa.gov/topics/earth/features/arctic\\_thinice.html](http://www.nasa.gov/topics/earth/features/arctic_thinice.html).

9. See Paul Eccleston, *Arctic Ice Thickness Drops by Up to 19 Per Cent*, THE TELEGRAPH, Oct. 28, 2008, available at <http://www.telegraph.co.uk/earth/earth-news/3353930/Arctic-ice-thickness-drops-by-up-to-19-per-cent.html>.

10. See Mark Kinver, *Arctic Ice Thickness 'Plummets'*, BBC NEWS, Oct. 28, 2008, <http://news.bbc.co.uk/2/hi/science/nature/7692963.stm>.

In early August 2007, a Russian expedition made a symbolic territorial claim to the Arctic floor's Lomonosov Ridge, along which superabundant submerged oil and gas deposits are believed to exist.<sup>11</sup> A pair of Russian mini-submarines descended to a depth of 14,000 feet beneath the ice-covered North Pole.<sup>12</sup> The subs planted a titanium metal Russian flag on the ocean floor, left a time capsule, "collected specimens of Arctic flora and fauna and videotaped their dives."<sup>13</sup> The symbolic Arctic mission, along with geologic data gathered by expedition scientists, is intended to bolster Russia's claims to more than 460,000 square miles of the Arctic shelf.<sup>14</sup> Some commentators estimate that the Arctic shelf might hold as much as 10 billion tons of hydrocarbon reserves<sup>15</sup> Russia now asserts that it has convincing scientific evidence to support its contention that the Lomonosov Ridge, a geological formation on the Arctic Ocean floor that stretches some 2000 km (1250 miles) from offshore Siberia to Canada's Arctic Archipelago, is actually an uninterrupted extension of their Siberian platform.<sup>16</sup> Thus, Russia contends that the ridge forms a geological continuation of its continental shelf,<sup>17</sup> and as such, it is rightly susceptible to claim by Russia under the contemporary law of the sea.<sup>18</sup> In reaction to this Russian assertion, Denmark counters that the Lomonosov Ridge is not an extension offshore Russia, but actually forms a continental shelf extension offshore Greenland, a Danish territory.<sup>19</sup> The United States is eyeing the continental shelf region offshore Alaska for possible hydrocarbon exploitation.<sup>20</sup>

Given the profoundly disturbing trends of pervasive ice melt in the Arctic, coupled with tensions arising from the likely acceleration of competitive offshore hydrocarbon development in the region, serious questions arise concerning the availability of a legal

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11. Charles Digges, *Russian Arctic Underwater Oil Expedition Researches North Pole*, ENV'T NEWS SERVICE, Aug. 2, 2007, <http://www.ens-newswire.com/ens/aug2007/2007-08-02-01.asp>.

12. *Id.*; see also Adrian Blomfield, *Russia Claims North Pole with Arctic Flag Stunt*, THE TELEGRAPH, Aug. 3, 2007, available at <http://www.telegraph.co.uk/news/worldnews/1559165/Russia-claims-North-Pole-with-Arctic-flag-stunt.html>; *Both Russian Mini-sub Surface After Symbolic North Pole Dive*, RIA NOVOSTI, Aug. 2, 2007, <http://en.rian.ru/russia/20070802/70229618.html>.

13. Digges, *supra* note 11.

14. RIA NOVOSTI, *supra* note 12.

15. Digges, *supra* note 11.

16. *Id.*

17. *Id.*

18. *Id.*

19. *Id.*

20. See Stephen Power, *Bush Moves to Update U.S. Policy in Arctic Region*, WALL ST. J., Jan. 8, 2009, available at <http://online.wsj.com/article/SB123146453521166747.html>; Jeannette J. Lee, *New Seafloor Maps May Bolster U.S. Arctic Claims*, ASSOCIATED PRESS, Feb. 12, 2008.

regime to effectively manage human activities there. A misconception pervasive among laymen and diplomats is that the Arctic region in general, and the Arctic Ocean in particular, suffers from the lack of a uniform regulatory international legal regime for governing the polar north. In fact, some commentators advocate that this condition necessitates negotiation of a special legal agreement that would regulate human activities specifically in the Arctic, inclusive of ocean space.<sup>21</sup> Presumably, such an agreement would be similar to the substance and objectives set out in the 1959 Antarctic Treaty that operates for forty-seven governments conducting activities in the polar south.<sup>22</sup> Yet, conditions of geography, glaciology, oceanography, and politics among the eight littoral states in the polar north seem likely to complicate such a comprehensive legal system being created for the Arctic Ocean within the foreseeable future.

A legal regime for governing Arctic Ocean space already exists, its central instrument being the 1982 United Nations Convention on the Law of the Sea ("1982 LOS Convention").<sup>23</sup> This framework agreement has become the core instrument of contemporary ocean law, as it firms up jurisdictional questions, sets out the rights and duties of state parties, and codifies the general rules, norms, and principles that govern the use of ocean space, including the Arctic. It is mainly, but not exclusively, from the 1982 LOS Convention that the various dimensions of the contemporary law for the Arctic Ocean are crystallized and can be more fully appreciated. These

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21. See Oran R. Young, *Whither the Arctic? Conflict or Cooperation in the Circumpolar North*, 45 POLAR REC. 73, 73 (2009); Scott G. Borgerson, *Arctic Meltdown: The Economic and Security Implications of Global Warming*, FOREIGN AFF., Mar.-Apr. 2008, at 63, 71-77; see also Robert Wade, *A Warmer Arctic Ocean Needs Shipping Rules*, FIN. TIMES, Jan. 15, 2008, available at [http://www.ft.com/cms/s/0/1c415b68-c374-11dc-b083-0000779fd2ac.html?nclick\\_check=1](http://www.ft.com/cms/s/0/1c415b68-c374-11dc-b083-0000779fd2ac.html?nclick_check=1).

22. On the Antarctic Treaty Regime, see CHRISTOPHER C. JOYNER, GOVERNING THE FROZEN COMMONS: THE ANTARCTIC REGIME AND ENVIRONMENTAL PROTECTION 54 (1998). See also CHRISTOPHER C. JOYNER, ANTARCTICA AND THE LAW OF THE SEA (Shigeru Oda, ed., Publications on Ocean Development Vol. 18, 1992). On the prospects for a new treaty, see Donald R. Rothwell, *The Arctic in International Affairs: Time for a New Regime?* (ANU College of Law Research Paper No. 08-37, Dec. 10, 2008). For a recent U.S. Presidential Directive that asserts that a new Arctic treaty is not "appropriate or necessary," see The White House, National Security Presidential Directive (66) and Homeland Security Presidential Directive (25), Jan. 9, 2009, available at <http://www.fas.org/irp/offdocs/nspd/nspd-66.htm>. See also Leigh Phillips, *Commission Backs Norway's Arctic Vision: No New Treaty*, EU OBSERVER, Nov. 13, 2008, <http://euobserver.com/880/27104>.

23. United Nations Convention on the Law of the Sea, Dec. 10, 1982, 1883 U.N.T.S. 397 (entered into force Nov. 16, 1994) [hereinafter 1982 LOS Convention]. As of February 2009, 157 states are parties to the 1982 LOS Convention. Importantly, the only Arctic state not a party to this critical instrument for regulating world ocean space is the United States. See U.N., Div. for Ocean Aff. & Law of the Sea, Chronological List of Ratifications, [http://www.un.org/Depts/los/reference\\_files/chronological\\_lists\\_of\\_ratifications.htm#The United Nations Convention on the Law of the Sea](http://www.un.org/Depts/los/reference_files/chronological_lists_of_ratifications.htm#The United Nations Convention on the Law of the Sea).

dimensions can be cast into nine broad, but interconnected issue-areas, for which a raft of international law has been created and implemented over the last four decades. These general issue-areas include ocean-related law for dealing with: (1) territorial jurisdiction; (2) fisheries management; (3) resource conservation; (4) pollution prevention; (5) anti-dumping and control of hazardous wastes; (6) regulation of international shipping; (7) management of global processes; (8) peace and arms control; and (9) criminal activities at sea.

While the 1982 LOS Convention is central to articulating rules for using the Arctic Ocean, two key points must be realized: first, there is already in place a diverse series of international agreements pertaining to ocean space in general, which can be applied to the Arctic in particular; and second, these and other instruments actually function as parts of a larger, more multifaceted legal regime for regulating human activities in Arctic Ocean space. These realizations point to the main purposes of this article, namely to identify and critically assess these agreements, with the express intent of relating how they legally impact on human activities in the Arctic Ocean. To this end, the next section briefly describes the geophysical nature of the Arctic Ocean as an integral part of the world ocean. It also addresses the legal implications for littoral states that flow from rules in the 1982 LOS Convention that govern offshore territorial delimitation in the region. The core analysis is contained in Part III, which evaluates the specifically agreed upon legal regulations that affect regional fisheries, nonliving resource development, and marine environmental protection in ocean space in general and the Arctic in particular. Also included in this section is an assessment of the international legal subregime negotiated for regulating international shipping that sails through ice-infested waters in the polar north. In this regard, several other relevant agreements that often go unnoted within the context of the law of the sea also relate to ocean activities, including those on Arctic high seas. Accordingly, Part IV examines ocean-related law pertaining to various global processes affecting ocean space, as well as instruments relevant to peace and arms control and criminal activities in the Arctic region. Finally, Part V offers some concluding thoughts for serious reflection about how the Arctic legal maritime regime might be improved in light of the persistent impacts of global climate change and accelerated offshore hydrocarbon development in Arctic waters.

## II. THE ARCTIC OCEAN

### A. *Geophysical Character*

Among the world's five oceans, the Arctic Ocean is the smallest.<sup>24</sup> It lies within a roughly circular basin covering an area that approximates 14.056 million square kilometers (5,427,000 square miles), which is slightly smaller than one and a half times the size of the United States.<sup>25</sup> The length of the Arctic Ocean's coastline extends 45,389 kilometers (28,200 miles), and is bounded by the landmasses of Eurasia, North America, Greenland, and several island formations.<sup>26</sup> Contained within the Arctic Ocean region are several notable bodies of water, among them Baffin Bay, Barents Sea, Beaufort Sea, Chukchi Sea, East Siberian Sea, Greenland Sea, Hudson Bay, Hudson Strait, Kara Sea, and the Laptev Sea.<sup>27</sup> Two important seasonal waterways are located in Arctic Ocean space, namely the Northwest Passage (linking northernmost Alaska in the United States and Canada) and the Northern Sea Route (running from northernmost Norway to Russia).<sup>28</sup> Also significant is that the Arctic Ocean is connected to the Pacific Ocean by the Bering Strait and to the Atlantic Ocean through the Greenland Sea and Labrador Sea.<sup>29</sup>

Throughout much of human history, the Arctic Ocean region was neglected as important ocean space, largely because the area was permanently covered by a massive ice sheet and thick sea ice. The central surface of the Arctic Ocean is still covered by a perennial drifting polar icepack that, on average, measures about three meters thick, although pressure ridges can generate three times that thickness.<sup>30</sup> This icepack is surrounded by open seas during the summer, but it more than doubles in size as it freezes over during the winter and extends to the surrounding landmasses. The Arctic ocean floor is comprised by nearly fifty percent continental shelf formations—the highest percentage of any ocean—with the remaining area being a central basin that is broken up by three submarine ridges: the Alpha Cordillera, the Nansen Cordillera, and the Lomonosov Ridge.<sup>31</sup>

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24. Cent. Intelligence Agency, World Fact Book, Arctic Ocean, <https://www.cia.gov/library/publications/the-world-factbook/geos/xq.html> (last visited Aug. 2, 2009).

25. *Id.*

26. *Id.*

27. *Id.*

28. *See id.*

29. *Id.*

30. *Id.*

31. *Id.*

### B. Ocean Law and Territorial Delimitation

The 1982 LOS Convention codifies offshore jurisdiction for coastal states through various zone delimitations with important implications for Arctic states. All eight arctic states have coastlines bordering the Arctic, and thus they are all affected by these zone delimitations<sup>32</sup> The Convention provides that a coastal state in the Arctic may claim a territorial sea out to twelve miles from the coastal baseline.<sup>33</sup> In the territorial sea, the sovereignty of the coastal state extends to the water column, the seabed, and all living and nonliving resources.<sup>34</sup> Foreign vessels may pass through this zone if the passage is deemed to be “innocent,” i.e., “not prejudicial to the peace, good order or the security of the coastal State.”<sup>35</sup> Fishing, polluting, testing weapons, and covert intelligence operations by foreign vessels are not considered “innocent” activities.<sup>36</sup>

The Convention creates a second offshore area, the contiguous zone.<sup>37</sup> A coastal state may claim beyond the twelve nautical mile limit an additional twelve nautical mile area of ocean space—which translates into twenty-four nautical miles from the coastal baseline of the territorial sea.<sup>38</sup> In this contiguous zone, Arctic littoral states can continue to enforce laws in the four specified areas of pollution, taxation, customs, and immigration.<sup>39</sup>

The 1982 LOS Convention also created for coastal states a special new offshore region, the exclusive economic zone (EEZ).<sup>40</sup> The EEZ extends 200 nautical miles offshore from a state’s coastal baseline, or 188 miles seaward beyond a state’s twelve-mile territorial sea.<sup>41</sup> Within this area, the eight Arctic coastal states retain sole exploitation rights over all living and nonliving natural resources.<sup>42</sup> Although this zone was introduced primarily to give coastal states

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32. Although the United States is the only one among the Arctic eight not to be a party to the 1982 LOS Convention, every U.S. administration since the Convention was negotiated has pledged U.S. adherence to all the Convention’s provisions, save for those in Part XI dealing with the deep seabed beyond the limits of national jurisdiction. See Statement on United States Actions Concerning the Conference on the Law of the Sea, 18 WEEKLY COMP. PRES. DOC. 877 (July 9, 1982), available at [www.presidency.ucsb.edu/ws/index.php?pid=42717](http://www.presidency.ucsb.edu/ws/index.php?pid=42717).

33. 1982 LOS Convention, *supra* note 23, art. 3.

34. *Id.* art. 2.

35. *Id.* art. 19.

36. *See id.*

37. *Id.* art. 33.

38. *Id.*

39. *See id.*

40. *Id.* Part V.

41. *Id.* art. 57.

42. *Id.* art. 56.

greater control over fishing rights, the prospect of exploring and exploiting offshore hydrocarbons within the littoral states' EEZs seems likely to become increasingly salient. Beyond the territorial seas, in the EEZ, foreign states have the freedoms of navigation and overflight, subject to regulation of the coastal states.<sup>43</sup> Foreign states may also lay submarine pipes and cables in the EEZ, as well as in ocean space beyond the limits of national jurisdiction.<sup>44</sup>

The final special area of ocean space created by the 1982 LOS Convention is the continental shelf.<sup>45</sup> This submarine area on the ocean floor is defined as the natural prolongation of the land territory to the continental margin's outer edge, or 200 nautical miles from the coastal state's baseline, whichever is greater. Coastal states enjoy no unilateral right to assert claims to the outer continental shelf beyond 200 nautical miles. Even so, the Convention permits a state to extend its continental shelf beyond 200 nautical miles, out to 350 nautical miles, so long as that shelf formation is a natural prolongation of the state's continental shelf. However, the continental shelf may not exceed 350 nautical miles from the baseline. Similarly, it may never exceed 100 nautical miles beyond the 2,500 meter isobath (i.e., the line connecting the depth of 2,500 meters).<sup>46</sup> Under Article 76 of the 1982 LOS Convention, scientific

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43. *Id.* art. 58.

44. *Id.*

45. *Id.* Part VI.

46. In full, Article 76 provides the following:

1. 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.

2. The continental shelf of a coastal State shall not extend beyond the limits provided for in paragraphs 4 to 6.

3. The continental margin comprises the submerged prolongation of the land mass of the coastal State, and consists of the seabed and subsoil of the shelf, the slope and the rise. It does not include the deep ocean floor with its oceanic ridges or the subsoil thereof.

4. (a) For the purposes of this Convention, the coastal State shall establish the outer edge of the continental margin wherever the margin extends beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured, by either:

(i) a line delineated in accordance with paragraph 7 by reference to the outermost fixed points at each of which the thickness of sedimentary rocks is at least 1 per cent of the shortest distance from such point to the foot of the continental slope; or

(ii) a line delineated in accordance with paragraph 7 by reference to fixed points not more than 60 nautical miles from the foot of the continental slope.

(b) 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

data substantiating that extended claim must be submitted by each government to a special Convention-created mechanism called the Commission on the Limits of the Continental Shelf, which will then make a determination regarding the validity of the claim asserted by each state.<sup>47</sup>

Critically important for the Arctic littoral states is that the 1982 LOS Convention gives coastal states the right to harvest mineral and non-living material in the subsoil of its continental shelf, to the exclusion of others.<sup>48</sup> Furthermore, Arctic coastal states are permitted to assert exclusive control over living resources “attached” to the continental shelf, but not to creatures living in the water column beyond the exclusive economic zone.<sup>49</sup> It is

gradient at its base.

5. The fixed points comprising the line of the outer limits of the continental shelf on the seabed, drawn in accordance with paragraph 4 (a)(i) and (ii), either shall not exceed 350 nautical miles from the baselines from which the breadth of the territorial sea is measured or shall not exceed 100 nautical miles from the 2,500 metre isobath, which is a line connecting the depth of 2,500 metres.

6. Notwithstanding the provisions of paragraph 5, on submarine ridges, the outer limit of the continental shelf shall not exceed 350 nautical miles from the baselines from which the breadth of the territorial sea is measured. This paragraph does not apply to submarine elevations that are natural components of the continental margin, such as its plateaux, rises, caps, banks and spurs.

7. The coastal State shall delineate the outer limits of its continental shelf, where that shelf extends beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured, by straight lines not exceeding 60 nautical miles in length, connecting fixed points, defined by coordinates of latitude and longitude.

8. Information on the limits of the continental shelf beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured shall be submitted by the coastal State to the Commission on the Limits of the Continental Shelf set up under Annex II on the basis of equitable geographical representation. The Commission shall make recommendations to coastal States on matters related to the establishment of the outer limits of their continental shelf. The limits of the shelf established by a coastal State on the basis of these recommendations shall be final and binding.

9. The coastal State shall deposit with the Secretary-General of the United Nations charts and relevant information, including geodetic data, permanently describing the outer limits of its continental shelf. The Secretary-General shall give due publicity thereto.

10. The provisions of this article are without prejudice to the question of delimitation of the continental shelf between States with opposite or adjacent coasts.

*Id.* art. 76. For an insightful analysis, see Alex G. Oude Elferink, *The Outer Continental Shelf in the Arctic: The Application of Arctic 76 of the LOS Convention in a Regional Context*, in *THE LAW OF THE SEA THE SEA AND POLAR MARITIME DELIMITATION AND JURISDICTION* 139-56 (Alex G. Oude Elferink & Donald R. Rothwell, eds., 2001).

47. 1982 LOS Convention, *supra* note 23, art. 76.

48. *Id.* art. 77.

49. *See id.* art. 77(4). Beyond the 200 nautical mile exclusive economic zone lies the high seas, to which all states have access to resources. *See id.* art. 87.

important to realize that in the Arctic Ocean, Russia, Canada, and Denmark all plan to assert claims to the Lomonisov Ridge, thought to be very rich in hydrocarbon deposits, and they all plan to submit their respective scientific justifications to the Shelf Commission before 2012. No less important is that the United States is not party to the 1982 LOS Convention and hence does not have access to the Continental Shelf Commission process. That means that if the U.S. government aims to seek extension of its continental shelf claim beyond the 200 nautical miles limit, it will lack the legitimacy to do so under international law, and its claim will go unrecognized by the rest of the world. Ironically, this consideration may prove to be the greatest motivation for the United States to finally ratify the LOS Convention nearly twenty-seven years after leading its negotiation.

### III. RESOURCES AND THE MARINE ENVIRONMENT

#### A. Fisheries Management

Fisheries management in the Arctic marine ecosystem is linked to scientific research, high seas freedoms, and resource conservation by littoral governments. Contemporary ocean law thus assigns great responsibility to coastal states for the protection and conservation of living resources in offshore maritime areas, and the Arctic is no exception. As mentioned above, the 1982 LOS Convention establishes a new offshore zone, the 200-mile EEZ. In this zone, the Arctic littoral state has exclusive rights not only to offshore fisheries, but also to regulate, exploit, and manage all living and nonliving resources therein. It is through the EEZ that the Arctic littoral state is allocated the principal role in preserving and protecting the marine ecosystem for at least 200 nautical miles seaward of its coast.<sup>50</sup>

Under the contemporary ocean law for the Arctic, coastal states retain the right to regulate certain matters that impinge upon their marine ecosystem offshore. Among these matters, *inter alia*, are the rights to: license fishermen, fishing vessels and harvesting equipment; determine which species might be caught and fix quotas and catch limits; regulate seasons and areas of fishing; set the age and size of fish and other species that may be harvested; require the conduct of specified research programs in order to gain new data about fisheries in the EEZ; and punish local and foreign fishermen who violate national fishing standards and regulations

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50. See 1982 LOS Convention, *supra* note 23, arts. 55-75.

within the EEZ.<sup>51</sup> All these activities contribute to better fisheries management and greater control over the exploitation of the ocean's living resources.

Regarding access to fisheries in ocean space, a relationship exists between implementation of enforced management and compliance by governments. Encouraging adherence to regulatory fishery measures can be done by inducement or coercion. Strengthening flag state responsibilities in order to extend jurisdiction over high seas fishing operations by vessels flying their flags; establishing procedures to detain non-flag states to inspect and detain fishing vessels on the high seas; and resorting to port-state controls, including inspections and prohibitions against port entry are means suggested for enforcing compliance with fishery laws.<sup>52</sup>

### 1. The FAO Compliance Agreement

In November 1993, the Food and Agriculture Organization of the United Nations (FAO) adopted the Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas.<sup>53</sup> This FAO instrument, which entered into force on April 24, 2003,<sup>54</sup> establishes minimum requirements to be applied by flag states to the registration and authorization of vessels intended for fishing on the high seas, inclusive of the Arctic. Its main objective is to prevent vessels from undermining the effectiveness of conservation and management measures by merely reflagging fishing vessels that have been caught poaching or violating international fishing laws.<sup>55</sup>

The success of the FAO Compliance Agreement remains dependent on the efficacy of states enforcing existing international conservation and management measures, which provide minimum standards that flag states must apply to their vessels on the high seas, the maximum standards that port states should apply to ves-

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51. *See id.* art. 62(4).

52. *See generally* Christopher C. Joyner, *Compliance and Enforcement in New International Fisheries Law*, 12 TEMP. INT'L & COMP. L.J. 271 (1998).

53. Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas, Nov. 24, 1993, 33 I.L.M. 968 [hereinafter FAO Compliance Agreement], available at <http://www.fao.org/DOCREP/MEETING/003/X3130m/X3130E00.HTM>.

54. All eight Arctic states are parties to the FAO Compliance Agreement.

55. *See* FAO Compliance Agreement, *supra* note 53, arts. III, IV, V & VI. The Compliance Agreement relies on flag-state responsibility as the major mechanism to promote compliance by a party of its fishing vessels on the high seas. This FAO instrument asserts that no party shall allow a vessel flying its flag to fish on the high seas without its authorization and no party may authorize a vessel to fish on the high seas if that vessel, regardless of whether it is registered to a party or non-party, has taken actions that undermine international conservation and management measures. *Id.* art. III.

sels in their ports, and, ostensibly, the maximum standards to be applied by a state other than the flag state under an agreement to take high seas enforcement action.

## 2. The Fish Stocks Agreement

Conflict in the 1990s between coastal states and distant water fishing fleets regarding international over-exploitation of fish stocks was sparked by weaknesses in the available legal framework for jurisdiction over straddling stocks. To redress jurisdiction and management of these fish without departing from the general framework of the law of the sea, in 1995 the UN Agreement for the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks was adopted.<sup>56</sup> Although applicable only beyond areas of national jurisdiction, a number of general principles of law are made binding upon coastal states, including those Arctic littoral nations. Among these are the duty of states to cooperate with each other to ensure the long-term sustainability of straddling stocks, to apply the precautionary approach to fisheries, to ensure compatibility of various conservation and management measures, and to adopt measures “based on the best scientific evidence available.”<sup>57</sup>

The UN Fish Stocks Agreement calls upon coastal and flag states to develop provisional arrangements and to inform each other about their respective national regulations and legislation. It also provides that, should no agreement be achieved on compatibility of conservation and management measures, “any of the States concerned” may bring the issue to binding and compulsory dispute settlement, using procedures set out in Part VIII of the Agreement.<sup>58</sup> The Fish Stocks Agreement appears to resolve concerns over the compatibility between conservation measures for the EEZ and adjacent high seas regions in a highly satisfactory and effective way.<sup>59</sup>

The 1995 Fish Stocks Agreement bolsters and extends the roles of regional and subregional organizations in conserving and managing straddling fish stocks, and even attempts to control entry and partici-

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56. Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of the Straddling Fish Stocks and Highly Migratory Fish Stocks, U.N. GAOR, 6th Sess., U.N. Doc. A/CONF.164/37 (Sept. 8, 1995) [hereinafter Fish Stocks Agreement], available at <http://daccessdds.un.org/doc/UNDOC/GEN/N95/274/67/PDF/N9527467.pdf?OpenElement>. In early 2009, seventy-five states are parties to the Fish Stocks Agreement, including all eight Arctic states. See U.N., Chronological List of Ratifications, *supra* note 23.

57. Fish Stocks Agreement, *supra* note 56, art. 5.

58. *Id.* art. 7.

59. See Olav Schram Stokke, *Conclusions*, in GOVERNING HIGH SEAS FISHERIES: THE INTERPLAY OF GLOBAL AND REGIONAL REGIMES 329 (Olav Schram Stokke, ed., 2001).

pation of states in those associations.<sup>60</sup> While the 1982 LOS Convention serves well as a framework agreement, application and enforcement of that general international law can be carried out more effectively by regional fishery organizations, as they are able to supervise and enforce regulations more strictly over localized fishing areas. To reinforce these regulations, in 1995 the FAO adopted an International Code of Conduct for Responsible Fishing.<sup>61</sup>

All states have the right for their nationals to fish on the Arctic high seas, subject to their treaty obligations and the rights and duties of coastal states.<sup>62</sup> In addition, all states have the duty to take such measures, in cooperation with other states, as may be necessary for the conservation and management of living resources of the high seas.<sup>63</sup> States are also mandated to ensure that their na-

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60. See Fish Stocks Agreement, *supra* note 56, art. 8.

61. FAO Fisheries Department, *Code of Conduct for Responsible Fisheries*, FAO Doc. COFI/93/10 (Oct. 31, 1995), available at <ftp://ftp.fao.org/docrep/fao/005/v9878e/v9878e00.pdf>. While the FAO code is nonbinding and voluntary, it furnishes critical guidelines as principles and standards for state conduct to conserve, manage, and develop global fisheries. Key among the general principles in Article 6 of the Code are the following:

- The right to fish carries with it the duty to conserve and manage living marine resources. *Id.* para. 6.1.
- “Conservation and management decisions for fisheries should be based on the best scientific evidence available.” *Id.* para. 6.4.
- “States and subregional and regional fisheries management organizations should apply a precautionary approach widely to conservation, management and exploitation of living aquatic resources.” *Id.* para. 6.5.
- “Within their respective competences and in accordance with international law, including within the framework of subregional or regional fisheries conservation and management organizations or arrangements, States should ensure compliance with and enforcement of conservation and management measures and establish effective mechanisms, as appropriate, to monitor and control the activities of fishing vessels and fishing support vessels.” *Id.* para. 6.10.
- “States authorizing fishing and fishing support vessels to fly their flags should exercise effective control over those vessels so as to ensure the proper application of this Code. They should ensure that the activities of such vessels do not undermine the effectiveness of conservation and management measures taken in accordance with international law and adopted at the national, subregional, regional, or global levels. States should also ensure that vessels flying their flags fulfill their obligations concerning the collection and provision of data relating to their fishing activities.” *Id.* para. 6.11.
- “States should . . . cooperate at subregional, regional and global levels through fisheries management organizations, other international agreements or other arrangements to promote conservation and management, ensure responsible fishing and ensure effective conservation and protection of living aquatic resources throughout their range of distribution, taking into account the need for compatible measures in areas within and beyond national jurisdiction.” *Id.* para. 6.12.
- And “States should cooperate in order to prevent disputes. All disputes relating to fishing activities and practices should be resolved in a timely, peaceful and cooperative manner, in accordance with applicable international agreements or as may otherwise be agreed between the parties.” *Id.* para. 6.15.

62. 1982 LOS Convention, *supra* note 23, art. 116.

63. *Id.* art. 117-118.

tionals comply with these measures.<sup>64</sup> To this end, governments should cooperate in establishing regional and subregional organizations to facilitate conservation and management of those resources.

International fisheries law in the Arctic creates a framework for formulating and enforcing conservation norms. Governments establish and empower multilateral arrangements that set membership qualifications and can adopt regulations to conserve and manage resources for ocean space. Under their constitutive rules, these fishery bodies formulate conservation norms and set primary rules for regulating the conduct of governments and nationals on the high seas. The constitutional structures and powers of associations entrusted with the management of fisheries resources largely determine the ability of their member governments to formulate, implement, monitor, and enforce conservation rules effectively.

International organizations such as the FAO,<sup>65</sup> the International Maritime Organization (IMO),<sup>66</sup> and the International Council for Science's Scientific Committee on Oceanic Research (SCOR)<sup>67</sup> play important legislative functions in the development of international fisheries law, inclusive of that in the Arctic. Their executive power to enforce compliance on agreed upon rules, however, is limited.

### *B. Resource Conservation and Management*

While marine resource conservation is linked to fisheries management, global processes, and provisions in the 1982 LOS Convention, much of its implementation actually is done in multilater-

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64. *Id.* art. 117.

65. See David J. Douman, *Technical Assistance in Fisheries Monitoring Control and Surveillance: A Historical Perspective of FAO's Role*, FAO Fisheries Circular No. 882 (1994). A catalogue of contemporary FAO activities relating to fisheries is available at Food & Agriculture Org. of U.N., Fisheries & Aquaculture Dept., <http://www.fao.org/fishery/en> (last visited Aug. 9, 2009).

66. Established by the United Nations in 1948 as the Inter-Governmental Maritime Consultative Organization, the IMO provides a means for its 168 Member States to cooperate on technical matters affecting international merchant shipping, including vessel safety and prevention and control of pollution from ships. See IMO, About IMO, <http://www.imo.org/> (last visited Aug. 9, 2009). All eight Arctic states are members of the IMO. See IMO, Member States, <http://www.imo.org/> (last visited Aug. 9, 2009). Under the IMO, thirteen international conventions (and protocols) have been negotiated for maritime safety, ten for marine pollution, eight for shipping liability and compensation, and four for other ocean-related subjects. See IMO, Conventions, List of Conventions, <http://www.imo.org/> (last visited Aug. 9, 2009).

67. Founded in 1957, SCOR works to promote cooperation among its thirty-five member states in planning and conducting major projects on oceanographic research. Scientific Comm. on Oceanic Res. (SCOR), <http://www.scor-int.org/> (last visited Aug. 9, 2009). All eight Arctic states are members of SCOR. See SCOR, Member Nations, <http://www.scor-int.org/memnats.htm>.

al regional for a through special arrangements. Indeed, Article 118 of the 1982 LOS Convention calls for the cooperation of states to conserve and manage living marine resources through subregional and regional fishery organizations.<sup>68</sup> Accordingly, even before the Convention, coordination of international efforts to conserve and manage living resources in the Arctic high seas was devised by states mainly according to specific resources, located in particular ocean subregions. In the northern Atlantic Ocean, the International Commission for the Conservation of Atlantic Tunas (ICCAT) exercises jurisdiction to set compliance measures with size and weight regulations and catch limits for annual landings of tuna.<sup>69</sup> ICCAT also established a port inspection scheme with minimum standards for conducting port inspection, which is designed to ensure compliance with management measures and to facilitate monitoring of each party's fishery catch.<sup>70</sup> Also for the North Atlantic, the Northwest Atlantic Fisheries Organization (NAFO) was created to protect and conserve fishery resources in the Northwest Atlantic.<sup>71</sup> Through its Commission, NAFO negotiates among its members a quota scheme for harvesting fish and also promotes compliance by non-contracting parties vessels with its conservation and enforcement measures.<sup>72</sup> Vessels belonging to non-contracting parties are presumed to be undermining NAFO conservation and enforcement measures, and can be boarded by NAFO inspectors to examine their log books, documents, fishing gear, catch on board, and any other matter relating to fishing activities. Contracting parties are expected to report on the findings of port inspections.

Other major fishery organizations whose regional scope overlaps portions of the Arctic include the North Atlantic Salmon Conservation Organization (NASCO), established by the NASCO Convention,<sup>73</sup> and the North East Atlantic Fisheries Commission

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68. 1982 LOS Convention, *supra* note 23, art. 118.

69. See ICATT, <http://www.iccat.int/en/> (last visited Aug. 9, 2009).

70. See generally ICATT, 2008 Commission, WG Monitoring Report, Report of the 5th Meeting of the Working Group on Integrated Monitoring Measures, ICATT Doc. No. COC-302/2008 (Oct. 15, 2008), available at [http://www.iccat.int/Documents/Meetings/Docs/MONITORING\\_%2008\\_ENG.pdf#search="port inspection"](http://www.iccat.int/Documents/Meetings/Docs/MONITORING_%2008_ENG.pdf#search=port%20inspection).

71. Convention on Future Multilateral Cooperation in the Northwest Atlantic Fisheries, Ottawa, Oct. 24, 1978, 1135 U.N.T.S. 369 (entered into force Jan. 1, 1979), available at <http://www.nafo.int/about/frames/convention.html>. Canada, Denmark, Iceland, Norway, Russia and the United States are all parties to NAFO. *Id.*

72. See generally *id.*

73. Convention for the Conservation of Salmon in the North Atlantic Ocean, Mar. 2, 1982, 1338 U.N.T.S. 33, available at [http://www.nasco.int/pdf/agreements/nasco\\_convention.pdf](http://www.nasco.int/pdf/agreements/nasco_convention.pdf). For general information on NASCO, see North Atl. Salmon Conservation Org., About NASCO, <http://www.nasco.int/> (last visited Aug. 9, 2009).

(NEAFC), established by the NEAFC Convention.<sup>74</sup> In the northern Pacific, the North Pacific Anadromous Fish Commission established by the NPAFC Convention,<sup>75</sup> coordinates national policies and regional strategies to regulate salmon fishing activities.

The 1973 Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) protects wildlife by setting up an international system for regulating trade in endangered and threatened species.<sup>76</sup> Among the marine creatures included on the CITES appendices' list of endangered creatures are species of whales, porpoises, dolphins, and seals<sup>77</sup>—all of which inhabit the Arctic high seas, but not all of which are close to extinction.

It also bears noting that a special agreement was negotiated in 1973 to protect and conserve polar bears, which often cross ice floes in search of food.<sup>78</sup> This 1973 agreement between the governments of Canada, Denmark, Norway, USSR (now Russia), and the United States “recognizes the responsibilities of the circumpolar countries for coordination of actions to protect polar bears.”<sup>79</sup> This agreement commits the parties “to manage polar bear populations in accordance with sound conservation practices.”<sup>80</sup> It also prohibits hunting, killing, and capturing bears except for limited purposes and by limited methods, and it commits all parties to protect the ecosystems of polar bears, especially denning and feeding

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74. Convention on Future Multilateral Cooperation in North-East Atlantic Fisheries, Nov. 18, 1980, 1285 U.N.T.S. 129, [http://www.nasco.int/pdf/nasco\\_convention.pdf](http://www.nasco.int/pdf/nasco_convention.pdf). Contracting parties include Denmark, Iceland, Sweden, Norway, and Russia, with Canada as a “cooperating non-contracting party.” Amendments were incorporated into the instrument in February 2007 to form a new convention that is provisionally operative until ratification. See Declaration on Interpretation and Implementation of Convention on Future Multilateral Cooperation in the North-East Atlantic Fisheries, available at [http://www.neafc.org/system/files/%252Fhome/neafc/drupal2\\_files/london-declaration\\_and\\_new\\_convention.pdf](http://www.neafc.org/system/files/%252Fhome/neafc/drupal2_files/london-declaration_and_new_convention.pdf) (last visited Aug. 9, 2009).

75. Convention for the Conservation of Anadromous Stocks in the North Pacific Ocean, Feb. 11, 1992, 22 LAW OF THE SEA BULLETIN 21 (1993), available at [http://www.npafc.org/new/publications/HandBook/English%20\(page1-44\).pdf](http://www.npafc.org/new/publications/HandBook/English%20(page1-44).pdf) (last visited Aug. 9, 2009). Members of this Commission include three Arctic states—Canada, the Russian Federation, and the United States—as well as Japan and Korea. *Id.*

76. Convention on International Trade in Endangered Species of Wild Flora and Fauna, Mar. 3, 1973, 27 U.S.T. 1087, T.I.A.S. 8249, 993 U.N.T.S. 243, (entered into force July 1, 1975) [hereinafter CITES], available at <http://www.cites.org/eng/disc/text.shtml>. “Trade” is defined as “export, re-export, import and introduction from the sea,” meaning “transportation into a State of specimens of any species which were taken in the marine environment not under the jurisdiction of any State.” *Id.* art. I. All eight Arctic states are parties to CITES. See CITES Homepage, <http://www.cites.org/> (last visited Aug. 9, 2009).

77. See CITES, *supra* note 76, apps. I, II & III, available at <http://www.cites.org/eng/app/E-Jul01.pdf> (valid from July 1, 2008).

78. Agreement on the Conservation of Polar Bears, Nov. 15, 1973, 27 U.S.T. 3918, 13 I.L.M. 13, available at <http://www.animallaw.info/treaties/itpolarbears1973.htm>. Of the eight Arctic states, Canada, Denmark, Norway, Russia, and the United States are parties to this agreement. *Id.*

79. *Id.* Summary.

80. *Id.*

areas and migration corridors.<sup>81</sup>

The critical consideration regarding all of these instruments is clear. These agreements articulate international conservation standards and legal prescriptions for states whose nationals are engaged in harvesting fish in the Arctic. In so doing, they aim to preserve and protect particular fishery resources in the Arctic marine environment. These contributions are important because they signal the need to protect and conserve certain targeted living resources and provide binding legal remedies for policy action by governments to do so.

A second important intergovernmental forum for conserving marine living resources is the International Whaling Commission (IWC). Established under the 1946 International Convention for the Regulation of Whaling,<sup>82</sup> The IWC was organized to regulate the whaling industry in order to “permit increases in the number of whales which may be captured without endangering these natural resources.”<sup>83</sup> The Convention applies to all waters where whaling is conducted, and the IWC establishes quotas and catch limits (now zero) for commercial whaling. In 1985, the Commission voted to impose a total moratorium on commercial whaling, which began in 1986.<sup>84</sup> The ban continues in 2009,<sup>85</sup> and only three states continue to hunt whales, two of which are Arctic—Norway and Iceland—and the third is Japan.<sup>86</sup>

### C. *Non-living Marine Resources*

Offshore hydrocarbon activity in the Arctic is increasing. Acce-

81. *Id.* arts. 1, 2 & 3. Significantly, in May 2008, the U.S. Department of Interior placed the polar bear as a “threatened” species under the Endangered Species Act of 1973. This decision was prompted by evidence that sea ice in the Arctic is vital for polar bear survival. This sea ice habitat has been substantially reduced in recent years, and this process is likely to continue. Estimates suggest that if conditions do not change in the Arctic to reverse this situation, the polar bear may be extinct within forty-five years. Determination of Threatened Status for the Polar Bear, 73 Fed. Reg. 28, 212 (May 15, 2008) (to be codified at 50 C.F.R. pt. 17). See also Larry Greenemeier, *U.S. Protects Polar Bears Under Endangered Species Act*, SCI. AM., May 14, 2008, available at <http://www.sciam.com/article.cfm?id=polar-bears-threatened>.

82. International Convention for the Regulation of Whaling, Dec. 2, 1946, T.I.A.S. 1849, 161 U.N.T.S. 72, available at [http://www.iwcoffice.org/\\_documents/commission/convention.pdf](http://www.iwcoffice.org/_documents/commission/convention.pdf). Save for Canada, all the other Arctic states are parties to the IWC Convention.

83. *Id.* pmbl.

84. See Revised Management Scheme of the IWC, June 19, 1985 (as an amendment to the Schedule of the IWC), available at <http://www.iwcoffice.org/conservation/rms.htm>.

85. Schedule to the International Convention for the Regulation of Whaling, June 2008 (as amended by the Commission at the 60th Annual Meeting).

86. Humane Soc’y Int’l, Pro-Whaling Nations, [http://www.hsus.org/hsi/oceans/whales/pro\\_whaling\\_nations](http://www.hsus.org/hsi/oceans/whales/pro_whaling_nations) (last visited Aug. 9, 2009).

lerated global warming brought about by increasing greenhouse gas emissions has caused dramatic melting of the Arctic Ocean ice cover, making more of the region accessible to hydrocarbon exploration.<sup>87</sup> Relatedly, new sea routes may become open for shipping for longer periods than in the past. Adding fuel to this fire, recent estimates have made incredible projections about the vast deposits of hydrocarbons in the Arctic. One estimate suggested that the Arctic seabed may hold as much as twenty-five percent of the world's undiscovered and unproven oil and natural gas reserves.<sup>88</sup> The U.S. Geological Survey concluded in 2007 that the sum of the mean estimates for each of thirty-three geological provinces "indicates that 90 billion barrels of oil, 1,669 trillion cubic feet of natural gas, and 44 billion barrels of natural gas liquids may remain to be found in the Arctic, of which approximately 84 percent is expected to occur in offshore areas."<sup>89</sup> Finally, another study asserts that the Chukchi Sea, located between northwest Alaska and eastern Siberia, may hold a mean volume of "15 billion barrels of recoverable oil and 77 trillion cubic feet of natural gas."<sup>90</sup> The adverse impacts of climate change on the amount, distribution, and thickness of ice in the Arctic, coupled with these superabundant estimates of potential resource deposits, strongly imply that within the next decade Arctic states will undertake accelerated offshore hydrocarbon development in the region.

If vastly increased oil and gas activities in the marine Arctic should proceed, the potential environmental consequences for the region will be profoundly disturbing. Particularly troublesome are the direct impacts of toxic pollution on fish, as well as on marine mammals (including the polar bear, seal, walrus, and sea otter). In addition, hydrocarbon pollution of the marine ecosystem can have indirect impacts, such as impeding fish migrations and poisoning indigenous mammals' food supplies.<sup>91</sup> Pollution is likely to come from oil seeps and oil spills associated with development

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87. See generally SUSAN JOY HASSOL, ARCTIC CLIMATE IMPACT ASSESSMENT: IMPACTS OF A WARMING ARCTIC (2004), available at <http://www.amap.no/acia/>.

88. Borgerson, *supra* note 21, at 67; ARCTIC MONITORING AND ASSESSMENT PROGRAMME (AMAP), ARCTIC OIL AND GAS 2007 at 17 (2008), available at <http://www.amap.no/oga/>.

89. CIRCUM-ARCTIC RES. APPRAISAL ASSESSMENT TEAM, U.S. GEOLOGICAL SURVEY, USGS ARCTIC OIL AND GAS REPORT: ESTIMATES OF UNDISCOVERED OIL AND GAS NORTH OF THE ARCTIC CIRCLE (USGS Fact Sheet 2008-3049, July 2008), available at <http://pubs.usgs.gov/fs/2008/3049/fs2008-3049.pdf>.

90. Welsey Loy, *Record Bids for Oil, Gas Leases in Chukchi Sea*, ANCHORAGE DAILY NEWS, Feb. 7, 2008, available at <http://www.adn.com/oil/story/307588.html>.

91. See generally Andrew Clarke & Colin M. Harris, *Polar Marine Ecosystems: Major Threats and Future Changes*, 30 ENVTL. CONSERVATION 1 (2003); World Wildlife Fed'n, *The Arctic: Threats*, <http://www.worldwildlife.org/what/wherewework/arctic/threats.html> (last visited Aug. 9, 2009).

activities.<sup>92</sup> As oil production in the Arctic moves progressively offshore, the potential for pollution from accidental leaks or blowouts grows. Concomitantly, a greater need will arise for closer monitoring and regulation of those activities by Arctic coastal states, as well as by the IMO. This offshore production, nearly all of which will come from wells drilled in the continental shelves within 350 nautical miles of coastal states, will be regulated by the states themselves under the special rights established for resource exploitation in exclusive economic zones and offshore continental shelf extensions.<sup>93</sup>

A number of global and regional agreements have prompted national governments to designate marine protected areas. Prominent among these are the 1972 Convention Concerning the Protection of the World Cultural and Natural Heritage, the 1971 Convention on the Conservation of Wetlands of International Importance especially as Waterfowl Habitat, the 1979 Convention on the Conservation of Migratory Species of Wild Animals, the 1992 Convention on Biological Diversity, and Chapter 17 of Agenda 21 of the United Nations Conference on Environment and Development, as well as protocols in certain UNEP regional conventions.<sup>94</sup> It seems prudent for the Arctic governments to review these principles of resource conservation and environmental protection before undertaking massive efforts to exploit prospective hydrocarbon resources off their coasts.

#### IV. GLOBAL PROCESSES

The Convention on Biological Diversity (or Biodiversity Convention)<sup>95</sup> entered into force in late 1993 to protect the genetic pool of all species, including those in the marine environment. The Convention emphasizes biodiversity in the oceans and the need to implement policies “with respect to the marine environment consistently with the rights and obligations of States under the law of

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92. AMAP, ARCTIC POLLUTION ISSUES: A STATE OF THE ARCTIC ENVIRONMENT REPORT 667-70 (1998), available at <http://www.amap.no/>.

93. See 1982 LOS Convention, *supra* note 23, art. 77.

94. See DIV. FOR OCEAN AFF. & LAW OF THE SEA, LAW OF THE SEA: MULTILATERAL TREATIES—A REFERENCE GUIDE TO MULTILATERAL TREATIES AND OTHER INTERNATIONAL INSTRUMENTS RELATED TO THE UNITED NATIONS CONVENTION ON THE LAW OF THE SEA, U.N. Sales No. E.97.V.9 (1996).

95. Convention on Biological Diversity, June 5, 1992, 31 I.L.M. 818 [hereinafter Biodiversity Convention], available at <http://www.cbd.int/doc/legal/cbd-un-en.pdf>. The United States is not a party to this instrument. *Id.* For a critical discussion, see Lakshman Guruswamy, *The Convention on Biological Diversity: Exposing the Flawed Foundations*, 26 ENVTL. CONSERVATION 79 (1999).

the sea.”<sup>96</sup> To this end, the Convention places responsibility squarely on Arctic littoral states for protection of biological variability in areas off their coasts. Parties are obligated to implement the Biodiversity Convention in accordance with and subject to customary ocean law, as well as with the specific stipulations contained in the 1982 LOS Convention.<sup>97</sup>

More recently, serious concerns have arisen in the IMO and the Biodiversity Convention’s Conference of Parties over the management of new or alien species that threaten marine and coastal ecosystems. To help remedy this situation, a special convention on the Control and Management of Ships’ Ballast Water and Sediments was adopted in 2004.<sup>98</sup>

The 1992 UN Framework Convention on Climate Change, which promotes intergovernmental cooperation to curtail greenhouse gas emissions that contribute to global warming, also relates to ocean law.<sup>99</sup> The relevance here is unmistakable: If global warming heats the atmosphere and the oceans, the polar ice caps could melt, thereby raising sea levels and flooding low-lying coastal regions. In the Convention’s preamble, the role of marine ecosystems as sinks and reservoirs for greenhouse gases is highlighted, as is the need to protect “areas beyond the limits of national jurisdiction” and to prevent “adverse effects of sea-level rise on islands and coastal areas.”<sup>100</sup> Article 4 commits parties to “promote and cooperate in the conservation and enhancement”<sup>101</sup> of coastal and marine ecosystems as sinks and reservoirs of all greenhouse gases, and to “develop and elaborate appropriate and integrated plans for coastal zone management . . . .”<sup>102</sup> The Kyoto Protocol to the UN

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96. Biodiversity Convention, *supra* note 95, art. 22(2).

97. *Id.* art. 22.

98. IMO, International Convention for the Control and Management of Ships’ Ballast Water and Sediments, Feb. 13, 2004 (not yet in force) *available at* [www.imo.org/conventions/mainframe.asp?topic\\_id=867](http://www.imo.org/conventions/mainframe.asp?topic_id=867). This instrument “will enter into force 12 months after ratification by 30 States, representing 35 per cent of world merchant shipping tonnage.” *Id.* The Convention stipulates that vessels using the ballast water exchange method should not discharge ballast water within 200 nautical miles of the nearest land or in waters less than 200 meters deep and must meet an efficiency of at least 95 percent volumetric exchange. *Id.* As of July 2009, only eighteen states have ratified it, accounting for only 15.36 percent of world tonnage. IMO, Status of Conventions, [http://www.imo.org/TCD/mainframe.asp?topic\\_id=247](http://www.imo.org/TCD/mainframe.asp?topic_id=247) (last visited Aug. 19, 2009).

99. United Nations Framework Convention on Climate Change, May 9, 1992, 1771 U.N.T.S. 107, U.N. Doc. A/AC.237/18 (PartII)/Add. 1 (entered into force Mar. 21, 1994) *available at* <http://unfccc.int/resource/docs/convkp/conveng.pdf>. As of 2009, 192 states are party to the Climate Change Convention, including all eight Arctic states. *See* United Nations Framework Convention on Climate Change, Parties & Observers, [http://unfccc.int/parties\\_and\\_observers/items/2704](http://unfccc.int/parties_and_observers/items/2704) (last visited Aug. 19, 2009).

100. United Nations Framework Convention on Climate Change, *supra* note 99, pmbl.

101. *Id.* art. 4.

102. *Id.*

Framework Convention on Climate Change is the instrument adopted to implement the general principles contained in the framework agreement.<sup>103</sup>

### A. *The Arctic Council*

Until very recently, the marine environment of the Arctic Ocean received far less international attention than any other part of the world's ocean. The first serious effort to implement an Arctic regime dealing with protection of the marine environment began in 1991 with the Arctic Environmental Protection Strategy (AEPS).<sup>104</sup> This Strategy sought to identify environmental problems in the Arctic and to propose action plans aimed at their management.<sup>105</sup> Among the more salient "problems and priorities" cited were persistent organic contaminants, oil, noise, heavy metals, radioactivity, and acidification.<sup>106</sup> To address these concerns, the AEPS formed six working program groups to propose strategies for implementing corrective and preventive actions.<sup>107</sup> These developments led to the creation of the Arctic Council in September 1996.<sup>108</sup> This intergovernmental forum, represented by Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden, and the United States, meets to coordinate international consultation and cooperation on Arctic issues and to promote sustainable development and environmental protection. Specifically, the Council meets "as a high level intergovernmental forum to provide a means for promoting cooperation, coordination and interaction among the Arctic States, with the involvement of the Arctic Indigenous communities and other Arctic inhabitants on common Arctic issues, in particular issues of sustainable development and

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103. Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 11, 1997, 37 I.L.M. 22, available at <http://unfccc.int/resource/docs/convkp/kpeng.pdf>. As of February 2009, there were 183 parties to the Protocol, although conspicuously absent among the Arctic states was the United States. Kyoto Protocol, Status of Ratification, [http://unfccc.int/files/kyoto\\_protocol/status\\_of\\_ratification/application/pdf/kp\\_ratification.pdf](http://unfccc.int/files/kyoto_protocol/status_of_ratification/application/pdf/kp_ratification.pdf) (last visited Aug. 19, 2009).

104. See Arctic Environmental Protection Strategy, June 14, 1991, 30 I.L.M. 162. All eight Arctic states—Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden, and the United States—are parties to the AEPS. *Id.*

105. *Id.* at 9-11.

106. *Id.* at 12.

107. The six programs were Arctic Contaminants Action Program (ACAP), AMAP, Conservation of Arctic Fauna and Flora (CAFF), Emergency Prevention, Preparedness and Response (EPPR), Protection of the Arctic Marine Environment (PAME), and Sustainable Development Working Group (SDWG). See Arctic Council, Working Groups, [http://arctic-council.org/section/working\\_groups](http://arctic-council.org/section/working_groups) (last visited Aug. 19, 2009).

108. See About Arctic Council, <http://arctic-council.org/article/about> (last visited Aug. 19, 2009).

environmental protection in the Arctic.”<sup>109</sup>

The Council is a promoter of soft law, i.e., nonbinding norms, and, as a consequence, no legally binding special programs or regional agreements for protecting Arctic ocean space have been adopted.<sup>110</sup> However, as the north polar marine environment clearly falls within the ambit of the Arctic Council's concerns, it has made a number of declarations and formal statements to promote an environmental protection strategy for the region.<sup>111</sup> Key among these is the work of the Protection of the Arctic Marine Environment Working Group, especially its Arctic Marine Strategic Plan and the Guidelines for Transfer of Refined Oil and Oil Products in Arctic Waters.<sup>112</sup> In addition, the Emergency Prevention, Preparedness and Response working group has produced several important nonbinding documents, among them the Arctic Guide for Emergency Prevention, Preparedness and Response (annually updated), a Field Guide for Oil Spill Response in Arctic Waters (1998), an Environmental Risk Analysis for Arctic Activities (1998), and a Circumpolar Map of Resources at Risk from Oil Spills in the Arctic (2002).<sup>113</sup>

In May 2008, representatives of Canada, Russia, Denmark, Norway, and the United States gathered in Greenland for a special Arctic Ocean Conference. This Conference was called by Denmark in reaction to rising tensions among these coastal states over still to be asserted claims to hydrocarbon deposits in the Arctic Ocean seafloor.<sup>114</sup> The product of these discussions was the Ilulissat Declaration, a statement of cooperative policy. Importantly, the Declaration noted that “the law of the sea provides for important rights and obligations concerning the delineation of the outer limits of the

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109. *Id.*

110. See generally Arctic Council, Documentation, <http://arctic-council.org/section/documentation> (last visited Aug. 19, 2009).

111. At least ten declarations have been adopted, among them the Salekhard Declaration (2006, dealing with climate change), the Inari Declaration (2002, dealing with human conditions, biodiversity conservation and sustainable use of resources, pollutants and climate change), the Rovaniemi Declaration (1991, dealing with protection of the arctic environment), the Reykjavik Declaration (2004, dealing with sustainable resources, climate change, pollutants, and biodiversity conservation, *inter alia*), and the Nuuk Declaration (1993, affirming the need for all Arctic governments to protect the Arctic environment). See *id.*

112. PAME, Guidelines for Transfer of Refined Oil and Oil Products in Arctic Waters (TROOP) (Nov. 2004), available at <http://old.pame.is/sidur/uploads/TROOP%20-%20English%202.pdf>.

113. See Arctic Council, Emergency, Prevention, Preparedness and Response, EPPR Resources, Products, available at <http://eppr.arctic-council.org/> (last visited Aug. 19, 2009). For discussion, see generally Timo Koivurova & David L. VanderZwaag, *The Arctic Council at 10 Years: Retrospect and Prospects*, 40 U. BRIT. COLUM. L. REV. 121 (2007).

114. See Arctic Economics, The Ilulissat Declaration, [http://benmuse.typepad.com/arctic\\_economics/2008/05/the-ilulissak-declaration.html](http://benmuse.typepad.com/arctic_economics/2008/05/the-ilulissak-declaration.html) (May 28, 2008, 21:39 EST).

continental shelf, the protection of the marine environment, including ice-covered areas, freedom of navigation, marine scientific research, and other uses of the sea.”<sup>115</sup> Further, it affirmed that these five Arctic states “remain committed to this legal framework and to the orderly settlement of any possible overlapping claims.”<sup>116</sup> The overarching theme of this statement seems clear: The 1982 Law of the Sea Convention, along with the International Maritime Organization and the Arctic Council, form the core features of the regime that governs the Arctic. In this regime, moreover, the five coastal states that border the Arctic Ocean retain primary responsibility for managing activities in the region, including resource development and environmental protection. In sum, the Ilulissat Declaration highlights the unique relationship of the five coastal nations to the Arctic, affirms the law of the sea treaty as central to the legal framework for development, asserts that the legal framework is best implemented through national action by the five coastal states, and asserts that no need exists to create a comprehensive new legal regime for management of the Arctic Ocean.<sup>117</sup>

### B. Pollution Prevention

#### 1. The 1982 LOS Convention

Protection of the Arctic region of the world’s ocean falls under international environmental law. The conceptual cornerstone of modern international environmental law is found in the 1972 Stockholm Declaration on the Human Environment,<sup>118</sup> in particular Principle 21 of that instrument. This Principle, which recognizes “the sovereign right [of states] to exploit their own resources pursuant to their own environmental policies,”<sup>119</sup> also asserts the correlative responsibility of states “to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.”<sup>120</sup> States are accordingly obligated not to pollute ocean

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115. The Ilulissat Declaration, Arctic Ocean Governing Conference, Ilulissat, Greenland, May 27-29, 2008, available at [http://www.oceanlaw.org/downloads/arctic/Ilulissat\\_Declaration.pdf](http://www.oceanlaw.org/downloads/arctic/Ilulissat_Declaration.pdf). Presumably, Finland, Iceland, and Sweden were not invited since they had no direct claims to the hydrocarbon-bearing Arctic continental shelves in question. See also *Summit Seeks Accord on Arctic Sovereignty*, THE CITIZEN, May 28, 2008.

116. Ilulissat Declaration, *supra* note 115.

117. *Id.*

118. Declaration of the United Nations Conference on the Human Environment, June 5-16, 1972, U.N. Doc. A/CONF. 48/14.

119. *Id.* Principle 21.

120. *Id.* The international precedent often cited as the genesis for this norm is the Trail

space beyond the limits of their sovereign jurisdiction.

Article 235 of the 1982 LOS Convention asserts that states are responsible for fulfilling “their international obligations concerning the protection and preservation of the marine environment.”<sup>121</sup> To this end, certain intergovernmental institutions were created to facilitate a coordinated approach for implementing ocean law designed to prevent marine pollution through the harmonization of national legislation and policy within the contemporary law of the sea.

Preeminent among these is the IMO, which provides a forum for cooperation among governments on technical matters affecting international merchant shipping. Membership in the IMO is intended to represent both traditional maritime states and states that rely on the shipping services of other countries. Though the IMO initially placed special emphasis on the safety of life at sea, in recent times its more visible focus has been the prevention and control of marine pollution from ships.<sup>122</sup> To wit, under Article 211 of the 1982 Law of the Sea Convention, the IMO is presumed to be the “competent” organization that is to authorize establishment of marine pollution standards.<sup>123</sup> Since its creation, the IMO has also assumed authority for enforcing the anti-pollution law on the high seas, as well for negotiating new international instruments designed to dissuade global marine pollution.<sup>124</sup>

The modern evolution of ocean law through the negotiation of various anti-pollution conventions has established a broad legal framework for protecting and preserving the marine environment beyond the limits of national jurisdiction, all of which inherently relate to Arctic waters. Principal concern was devoted to pollution of the seas by oil, and the 1969 International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties<sup>125</sup> and its 1973 Protocol on Substances other than Oil<sup>126</sup> codified the principle that parties may take measures on the high seas

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Smelter Arbitration between the United States and Canada. *See* Trail Smelter Arbitral Tribunal Decision, 35 AM. J. INT'L L. 684 (1941).

121. 1982 LOS Convention, *supra* note 23, art. 235.

122. Perusal of the chronology of conventions adopted by the IMO since 1958 clearly reveals this pattern of increasing concern over the past three decades for prevention of marine pollution and protection of the marine environment. *See* IMO, Status of Conventions, *supra* note 98. Nearly every major convention dealing with preventing pollution of the oceans negotiated since 1970 has been sponsored by the IMO. *See id.*

123. *See* 1982 LOS Convention, *supra* note 23, art. 211.

124. *See* IMO, Status of Conventions, *supra* note 98.

125. International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, Nov. 29, 1969, T.I.A.S. 8068. At least eighty-six states are currently parties to this Convention. *See* IMO, Status of Conventions, *supra* note 98.

126. Protocol Relating to Intervention on the High Seas in Cases of Marine Pollution by Substances Other than Oil, Nov. 2, 1973, T.I.A.S. 10561.

“to prevent, mitigate or eliminate grave and imminent danger to their coastline or related interests from pollution or threat of pollution of the sea by oil [or other substances], following upon a maritime casualty . . . which may reasonably be expected to result in major harmful consequences.”<sup>127</sup> The 1969 International Convention on Civil Liability for Oil Pollution Damage<sup>128</sup> and the 1971 International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage<sup>129</sup> established an international system of liability and compensation for oil pollution damage caused by ships.<sup>130</sup> Given the prospect of increased hydrocarbon exploration and exploitation activities in Arctic continental shelves areas in coming decades, these conventions undoubtedly will increase in relevance.

The 1982 LOS Convention furnishes the highest level global directives currently available for protecting and preserving the marine environment. The provisions contained in Part XII of the LOS Convention, “Protection and Preservation of the Marine Environment,”<sup>131</sup> are actually constitutional in character. They establish a comprehensive framework for the protection and preservation of the marine environment in the context of international law applicable to all ocean space.<sup>132</sup> In this respect, Part XII embodies the first serious effort to construct and codify a public international law framework that deals with the degradation of and threat to the global marine environment, inclusive of the Arctic. These provisions emphasize the need for global response to problems of marine pollution. Part XII does not merely furnish standard-setting principles. Rather, it supplies a blueprint for regionally responsive standards. As such, its provisions embody a general framework for anti-pollution measures designed to protect the world marine ecosystem.

The 1982 LOS Convention defines marine pollution in sweeping terms that hold special relevance for the preservation of marine biodiversity. As set out in Article 1, “pollution of the marine

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127. Convention on Intervention on the High Seas in Cases of Oil Pollution Casualties, *supra* note 125, art. 1.

128. International Convention on Civil Liability for Oil Pollution Damage, Nov. 29, 1969, 973 U.N.T.S. 3, 9 I.L.M. 45. For a discussion of the Convention, see IMO, International Convention on Civil Liability for Oil Pollution Damage (CLC), 1969, [http://www.imo.org/Conventions/contents.asp?doc\\_id=660&topic\\_id=256](http://www.imo.org/Conventions/contents.asp?doc_id=660&topic_id=256).

129. International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, Dec. 18, 1971, *available at* <http://www.admiraltylawguide.com/conven/oilpolfund1971.html>.

130. There are presently three intergovernmental organizations—the 1971 Fund, the 1992 Fund, and the Supplementary Fund—that provide compensation for oil pollution damage resulting from oil spills from tanker vessels. The International Oil Pollution Compensation Funds, Introduction, <http://www.iopcfund.org/intro.htm> (last visited Aug. 19, 2009).

131. 1982 LOS Convention, *supra* note 23, arts. 192-237.

132. *Id.* art. 192.

environment” means:

the introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities.<sup>133</sup>

The chief duty of national governments under the 1982 LOS Convention is to protect the ocean ecosystem: “States have the obligation to protect and preserve the marine environment.”<sup>134</sup> Article 194 underpins the legal duty not to pollute the oceans. The Convention is concerned with all sources that pollute the marine environment, and states are required to take, alone or in concert, “all measures . . . necessary to prevent, reduce and control pollution of the marine environment from any source, using for this purpose the best practicable means at their disposal and in accordance with their capabilities . . . .”<sup>135</sup> By the same token, states are responsible for undertaking efforts to ensure compliance with and enforcement of these obligations on their nationals.<sup>136</sup> Arctic littoral states are clearly obligated to uphold these rules.

The 1982 LOS Convention addresses the threat of high seas pollution from a source-oriented perspective. Six sources of marine pollution are treated: land-based, national seabed activities, activities in the international seabed area, dumping, vessel-source, and atmospheric.<sup>137</sup> Pollution from all these sources affects the marine ecosystem, though to varying degrees. The general thrust of these anti-pollution provisions is proactive, rather than reactive. That is, provisions are designed to prevent and dissuade manmade pollution activi-

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133. *Id.* art. 1(4).

134. *Id.* art. 192. Within the United Nations organization, the Joint Group of Experts on the Scientific Aspects of Marine Pollution (GESAMP) was constituted in 1969 as the expert scientific advisory body on marine pollution within the United System. The GESAMP is supported by other U.N. agencies, namely by the U.N. Division of Ocean Affairs and the Law of the Sea, in the Office of Legal Affairs; the United Nations Environmental Programme; the IOC under UNESCO; FAO; WHO; IMO; and IAEA. Its mission is to provide scientific advice to sponsoring agencies on the prevention, reduction, and control of the degradation of the marine environment. See U.N. Env'tl. Programme, GESAMP, <http://www.unep.ch/regionalseas/main/partners/gesamp.html> (last visited Aug. 19, 2009).

135. 1982 LOS Convention, *supra* note 23, art. 194(1).

136. *Id.* arts. 117-119. See generally Joyner, *Compliance and Enforcement in New International Fisheries Law*, *supra* note 52, at 52.

137. 1982 LOS Convention, *supra* note 23, arts. 207-212.

ties, rather than to stop or redress their harmful impacts.

The 1982 LOS Convention specifically recognizes the threat that land-based sources of pollution present for the marine environment. States are directed to take legislative action “to prevent, reduce and control pollution of the marine environment from land-based sources . . . taking into account internationally agreed rules, standards and recommended practices and procedures.”<sup>138</sup> National legislation should be “designed to minimize, to the fullest extent possible, the release of toxic, harmful or noxious substances, especially those which are persistent, into the marine environment.”<sup>139</sup> In terms of land-based sources of marine pollution, the main sources of information are reports from national governments, although a number of international organizations and nongovernmental organizations are increasingly making public assessments and reports on Arctic marine developments. For the Arctic Ocean, these reports consistently find that the potentially greatest threats are land-based pollutions that exacerbate global warming and the melting of the polar ice sheet and the prospect of increased shipping throughout the region, which could lead to more collisions between vessels and oil spills.<sup>140</sup>

The 1982 LOS Convention obligates states to establish international rules to regulate vessel-source pollution worldwide. National laws adopted by states are to be “no less effective”<sup>141</sup> than generally accepted international rules. Again, enforcement is left to coastal and port states.<sup>142</sup> The reasoning here is clear: National governments make anti-pollution law; vessels under the jurisdiction of national governments violate the law; therefore, national governments must enforce the law against those vessels—in port, in waters of national jurisdiction, or on the high seas. The chief responsibility thus falls to flag states to “adopt laws and regulations and take other measures necessary” for implementing those national laws and applicable international rules for their vessels sailing in international waters.<sup>143</sup> In this regard, flag states are expected to regulate the design, equipment, and operation of vessels, as well as to take measures for preventing

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138. *Id.* art. 207(1).

139. *Id.* art. 207(5).

140. See generally AMAP, ARCTIC OIL AND GAS, *supra* note 88; HASSOL, *supra* note 87; AMAP, ARCTIC POLLUTION ISSUES, *supra* note 92. See also, e.g., Press Release, Steve Ertel, World Wildlife Fund Says Arctic Governments and Industry Still Unprepared for Oil Spills 20 Years after Exxon Valdez (Mar. 19, 2009), available at <http://www.worldwildlife.org/who/media/press/2009/WWFPresitem11925.html>; PAME, Arctic Portal, Russian NPA-Arctic Reports, <http://arcticportal.org/pame/pame-document-library/russian-mpa-arctic-reports> (last visited Aug. 20, 2009).

141. 1982 LOS Convention, *supra* note 23, art. 208(3).

142. *Id.* arts. 213-218.

143. *Id.* art. 217(1).

accidents that might pollute the marine environment and bring harm to biological diversity in the oceans.<sup>144</sup>

The 1982 LOS Convention fixes international obligations for states to protect the oceans in three main ways. First, governments are explicitly obligated to protect and preserve that marine environment.<sup>145</sup> Governments have the duty not to pollute ocean space and must not condone the actions of nationals that do.

Second, governments are obligated to cooperate on both a global and regional basis.<sup>146</sup> This involves a fundamental commitment to make rules, regulations, and standards that undergird the first duty of protecting the marine environment.<sup>147</sup> The critical ingredient here, of course, is international cooperation, which includes information exchange, technological assistance, and implementation assistance.

Third, governments are obligated to adopt, enact, and enforce at the national level internationally agreed-upon standards for protecting the marine ecosystem.<sup>148</sup> This duty underpins protection of the marine environment. Only governments can make international law for protecting the oceans work effectively. Those governments that are not willing to do so—and thus remain outliers to the regime—might gain some competitive advantage in the short term but are likely to feel repercussions over the long run as other states react negatively to their recalcitrance.

## 2. MARPOL and Its Protocol

Since the harmful effects of manmade pollution on the world marine ecosystem have only recently been realized, serious efforts to control the problem globally are relatively new. Most attention to marine pollution has focused on oil and the prevention of maritime accidents. Intense media attention given to oil tanker disasters at sea since the mid-1960s led to greater international interest in marine pollution control. One signal outcome was the promulgation in 1973 of a new international agreement especially designed to replace the outdated 1954 Convention for the Prevention of the Pollution of the Sea by Oil.<sup>149</sup>

The jurisdictional reach of the new agreement, the 1973 International Convention for the Prevention of Pollution from Ships, as

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144. *See id.* art. 217(2).

145. *Id.* art. 207(1).

146. *Id.* art. 207(4).

147. *Id.*

148. *See id.* art. 192.

149. International Convention for the Prevention of Pollution of the Sea by Oil, May 12, 1954, 12 U.S.T. 2989.

modified by its Protocol of 1978 (MARPOL 73/78),<sup>150</sup> is global, inclusive of the Arctic. MARPOL 73/78 aims to remedy the “deliberate, negligent or accidental release of . . . harmful substances from ships” as well as “to achieve the complete elimination of intentional pollution of the marine environment by . . . harmful substances.”<sup>151</sup> This composite legal instrument aims to prevent and control pollution generated from ships into the marine environment. By so doing, MARPOL 73/78 works to preserve and protect the global marine environment. The agency responsible for sponsoring, promoting and modifying MARPOL 73/78 is the IMO.<sup>152</sup>

While MARPOL 73/78 mainly deals with pollution of the seas by oil,<sup>153</sup> its regulatory authority also extends to noxious liquid substances,<sup>154</sup> harmful packaged substance and freight containers,<sup>155</sup> sewage discharge from ships,<sup>156</sup> disposal of garbage and plastics from vessels at sea,<sup>157</sup> and air pollution from ships.<sup>158</sup> That authority stems from the special annexes that contain regulations for the enforcement and administration of pollution prevention.

As of 2009, MARPOL 73/78 contains six annexes, each of which pertains to a particular type of pollutant. Annexes I and II of

150. International Convention for the Prevention of Pollution from Ships, Nov. 2, 1973, IMCO Doc. MP/CPNF.WP.35/ ; Protocol of 1978 Relating to the International Convention for the Prevention of Pollution from Ships, Feb. 17, 1978, IMCO Doc. TSPP/CONF/11 [combined instrument hereinafter MARPOL 73/78]. The 1973 MARPOL Convention was not intended to enter into force or be applied on its own. The regime to be used by states party to the 1978 Protocol is that contained in the 1973 Convention, as modified by the 1978 Protocol. The acronym “MARPOL” is taken from the first three letters of the words “marine pollution.”

151. *Id.*

152. See IMO, International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL), [http://www.imo.org/TCD/contents.asp?doc\\_id=678&topic\\_id=258#1](http://www.imo.org/TCD/contents.asp?doc_id=678&topic_id=258#1) (last visited Aug. 21, 2009).

153. See International Convention for the Prevention of Pollution from Ships, 1973, Annex I, Regulations for the Prevention of Pollution by Oil, IMCO Doc. MP/CONF/WP.21 (1973).

154. See *id.* Annex II, Regulations for the Control of Pollution by Noxious Liquid Substances in Bulk. By 2009, 149 states accounting for 99.01 percent of world tonnage had contracted to this annex. IMO, Status of Conventions, *supra* note 98.

155. See MARPOL 73/78, *supra* note 150, Annex III, Regulations for the Prevention of Pollution by Harmful Substances Carried by Sea in Packaged Forms, or in Freight Containers, Portable Tanks or Road and Rail Tank Wagons. By 2009, 132 states having a combined tonnage of 95.76 percent had contracted to this annex. IMO, Status of Conventions, *supra* note 98.

156. See *id.* Annex IV, Regulations for the Prevention of Pollution by Sewage from Ships. By 2009, 122 states having a combined world tonnage of 80.75 percent had contracted to this annex. IMO, Status of Conventions, *supra* note 98.

157. See MARPOL 73/78, *supra* note 150, Annex V, Regulations for the Prevention of Pollution of Garbage from Ships (entered into force Dec. 31, 1988). By 2009, 138 states with a combined tonnage of 96.98 tons had contracted to this Annex. IMO, Status of Conventions, *supra* note 98.

158. See MARPOL 73/78, *supra* note 150, Annex VI, Regulations for the Prevention of Air Pollution from Ships, IMO Doc. MP/CONF.3/34 and Doc. MP/CONF.3/33/Rev. 1. By 2009, this instrument had fifty-six contracting parties, accounting for 83.46 percent of world tonnage. IMO, Status of Conventions, *supra* note 98.

MARPOL, which are mandatory, deal with oil and noxious liquid substances, respectively. These two annexes contain strict regulations for ship design, and acceptance of them became essential for MARPOL's entry into force.<sup>159</sup> A state that accepts MARPOL 73/78, however, is not obliged to accept Annexes III, IV, or V, known as the Optional Annexes.<sup>160</sup> This arrangement underscores the signal importance attached to the control of oil pollution in 1973 when the MARPOL Convention was negotiated.

Annexes III, IV, and V of the MARPOL Convention are concerned with containerized substances, ship sewage discharges, and ship garbage, respectively, as they might impact Arctic waters. Annex V of the MARPOL Convention only addresses the routine disposal of wastes at sea, not the issue of maritime accidents. Unlike Annexes I and II, Annex V omits consideration of vessel design regulations in the Arctic.

Most recently, in September 1998, a new annex to MARPOL 73/78 was adopted in line with the new rules and standards that states are required to establish under Article 211 of 1982 LOS Convention. Annex VI, which contains Regulations for the Prevention of Air Pollution from Ships,<sup>161</sup> came in response to concerns about ozone depletion and climate change from the greenhouse effect. Annex VI prohibits intentional emissions of ozone depleting substances (halons and chlorofluorocarbons) and sets limits on the emission of sulphur oxide and nitrogen oxide. Annex VI also prohibits the incineration on board ships of certain substances, such as polychlorinated biphenyls, and certain areas (*e.g.*, the Baltic Sea) are designated as sulphur oxide emission control areas.<sup>162</sup> A technical code on the control of emissions of nitrogen oxides from marine diesel engines was also adopted by Conference of Parties to MARPOL in 1998.<sup>163</sup>

MARPOL 73/78 only addresses vessel-source pollution in ocean space. Each annex to the Convention addresses a different type of harmful substance or effluent intentionally or accidentally discharged from a ship, all of which can pollute Arctic waters. In this

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159. Annexes I and II were brought into force as integral parts of MARPOL when it entered into force on October 2, 1983. IMO, International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL), *supra* note 152.

160. See MARPOL 73/78, *supra* note 150, art. 14(1).

161. See MARPOL 73/78, *supra* note 150, Annex VI, Regulations for the Prevention of Air Pollution from Ships. Annex VI was added via the adoption of the Protocol of 1997 to amend MARPOL 73/78.

162. *Id.*

163. Press Release, IMO, IMO Says Ship Engines Should Comply with NOx Code from 1 January 2000, available at [http://www.imo.org/About/mainframe.asp?topic\\_id=69&doc\\_id=560](http://www.imo.org/About/mainframe.asp?topic_id=69&doc_id=560) (last visited Jan. 21, 2010).

respect, vessel discharge should not be confused with ocean dumping, which concerns the disposal of land-generated wastes at sea. In fact, the MARPOL Convention was promulgated to fill in gaps left by the 1972 London Dumping Convention.<sup>164</sup> In this way, the MARPOL 73/78 and the London Dumping Convention, both authorized by the IMO, have become mutually cohesive for banning vessel-source pollution activities that harm the marine environment.

With regard to dumping, states are obligated under current ocean law to adopt regulations and take means necessary “to prevent, reduce and control pollution.”<sup>165</sup> The 1982 LOS Convention insists that dumping into the ocean not be allowed “without the permission of competent authorities of States.”<sup>166</sup> States are directed to “endeavor to establish global and regional rules,”<sup>167</sup> and their national anti-pollution legislation “shall be no less effective . . . than the global rules and standards.”<sup>168</sup> It falls upon national governments, therefore, to ensure that dumping from their vessels is formally prohibited, not only in waters of national jurisdiction, but also on the high seas. Responsibility also accrues to national governments—in particular the coastal state whose waters may be affected or the flag state whose vessel is actually engaged in dumping—to enforce these prohibitions.

### 3. Ocean Dumping

The 1972 London Dumping Convention contributes substantially to reinforcing the norms against marine pollution.<sup>169</sup> “Dumping” is defined in Article 3 as “any deliberate disposal at sea . . . .”<sup>170</sup> The Convention goes on to obligate contracting parties “to take all practicable steps to prevent the pollution of the sea by the dumping of waste and other matter that is liable to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the

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164. Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, Dec. 29, 1972, 26 U.S.T. 2403, 1046 U.N.T.S. 120 [hereinafter London Dumping Convention]. In Article 3, para. 1(b)(i), the London Dumping Convention actually proclaims that dumping excludes “the disposal at sea of wastes or other matter incidental to, or derived from the normal operations of vessels. . . .” In early 2009, eighty-five states were parties to this Convention, including all eight Arctic states. IMO, Status of Conventions, *supra* note 98.

165. 1982 LOS Convention, *supra* note 23, art. 210(1).

166. *Id.* art. 210(3).

167. *Id.* art. 210(4).

168. *Id.* art. 210(6).

169. London Dumping Convention, *supra* note 164.

170. *Id.* art. 3.

sea.”<sup>171</sup> To this end, the agreement specifically prohibits or restricts certain “black” or “grey-listed substances” from being dumped into “all marine waters other than the internal waters of states.”<sup>172</sup> Contracting parties are obliged not to dump harmful substances—including toxins, plastics, and petrochemicals—into the oceans.<sup>173</sup>

This instrument provides a list of prohibited materials and sets international standards for evaluating materials not specifically listed. Important for protecting marine biodiversity, among those materials banned from disposal are plastics and other persistent synthetic materials that float or remain suspended in ocean waters such that they materially interfere with fishing, navigation and other legitimate uses of the oceans.

The 1972 London Convention is not self-implementing. It relies upon appropriate statutes passed by individual contracting parties for its enforcement. Jurisdiction of each state extends to vessels and aircraft registered in its territory, flying its flag, or which are loading matter to be dumped within that state’s territory or territorial seas, as well as to vessels and platforms under the jurisdiction of a member party believed to be engaged in acts of dumping at sea.<sup>174</sup>

The 1972 London Convention establishes international rules to regulate ocean dumping (including ocean incineration). It bans the dumping of certain substances and limits the dumping of others, with all allowed dumping to be regulated by system of permits. In 1996, a Protocol was adopted to strengthen and clarify provisions in the London Convention,<sup>175</sup> and in October 1997 contracting parties to the London Convention adopted Guidelines for the Assessment of Wastes or Other Matter that May Be Considered for Dumping. These guidelines provide guidance for national authorities in deciding what waste materials may be lawfully dumped at sea by license or otherwise. Relatedly, the problem of harmful aquatic organisms in ballast water dumped by ocean-going vessels has arisen. Estimates suggest that ten billion tons of ballast water are transferred and discharged each year, providing a prominent medium for transporting new and alien species from one region to another. These alien species can produce disastrous effects on local

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171. *Id.* art. 1.

172. *Id.* art. 1(3).

173. *See generally id.*

174. *See id.* art. 7.

175. Protocol amending the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 (London Convention). *See* The Secretary-General, *Report of the Secretary-General on Oceans and the Law of the Sea*, U.N. Doc. A/52/487, paras. 288-95 (Oct. 20, 1997).

ecosystems by causing algae blooms, releasing pathogens, and infecting fish species. To minimize this threat, in 1998 IMO adopted its Guidelines for the Control and Management of Ships' Ballast Water to Minimize the Transfer of Harmful Aquatic Organisms and Pathogens,<sup>176</sup> which also contributes to objectives in the Biodiversity Convention to protect conservation and sustainable use of biological diversity in marine ecosystems, inclusive of the Arctic.

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal<sup>177</sup> relates to use of the oceans, since considerable amounts of hazardous wastes are transported by ocean-going vessels. The Basel Convention obligates parties to control and reduce international movements of hazardous waste materials, and to prevent and punish illegal traffic in them. Consent must be obtained from transit countries, environmentally sound management of wastes must be ensured, and all import and transit states must be notified of proposed waste movements. To effect these obligations, rules are set out in the Basel Convention to determine the hazardous nature of the waste materials and whether they are coming or going to final disposal or recovery.

Finally, increased exploration and exploitation for oil and gas resources have occurred worldwide, and most recently these efforts have focused prospective development of these resources in the Arctic Ocean. To accomplish hydrocarbon exploration and exploitation activities in the maritime polar north, construction of new offshore installations and structures must be undertaken. Under Articles 60 and 80 of the 1982 LOS Convention, the coastal state has the exclusive right to erect and regulate the construction, operation and use of these artificial islands, installations and structures in its exclusive economic zone.<sup>178</sup> Though the offshore industry has largely been self-regulatory under the aegis of the coastal state, the IMO's Maritime Safety Committee has sought in recent years to set out safety standards and guidelines for removal and disposal of these facilities. Thus, in 1989, the IMO adopted the Guidelines and Standards for the Removal of Offshore Installations and Structures on the Continental Shelf and in the Exclusive Economic Zone<sup>179</sup> to provide generally accepted standards for the removal of

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176. See IMO, *Guidelines for the Control and Management of Ships' Ballast Water to Minimize the Transfer of Harmful Aquatic Organisms and Pathogens*, IMO A 20/Res. 868 (1997).

177. Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, Mar. 22, 1989, U.N. Doc. UNEP/WG.190/4, UNEP/IG.80/3, available at <http://www.basel.int/text/con-e.pdf>.

178. 1982 LOS Convention, *supra* note 23, arts. 60 & 80.

179. See IMO, *Guidelines and Standards for the Removal of Offshore Installations and Structures on the Continental Shelf and in the Exclusive Economic Zone*, IMO Doc.A 16/Res.

offshore installations. In addition, the 1992 Convention for the Protection of the Marine Environment of the North-East Atlantic prohibits dumping of disused offshore installations within specified maritime areas.<sup>180</sup>

### C. Shipping Regulation

Current marine shipping in the polar north has been intra-Arctic, which tends to concentrate in the Canadian Arctic and around the east and west coasts of Greenland. However, reduced sea ice caused by global warming, greater access to resources and higher costs for hydrocarbons seem likely to increase marine transportation activities throughout the region. Should these developments eventuate, the environmental impacts on the region could be seriously consequential. Among these are: the greater possibility of shipping incidents, which would result in accidental discharges of pollutant substances from cargo or fuel losses and physically impact the Arctic marine ecosystem; operational discharges from fuel incineration and garbage and sewage disposal; navigation byproducts such as noise pollution and disruption of marine animal behavior; and the introduction of alien organisms from ballast water exchanges and species' attachment to hulls.<sup>181</sup> It seems increasingly obvious that a genuine need exists for new rules particular to the Arctic to regulate shipping in the region.<sup>182</sup>

The 1982 LOS Convention provides that coastal states have the right to regulate waters in ice-covered areas that are within their national jurisdiction. In this regard, Article 234 asserts that:

Coastal States have the right to adopt and enforce non-discriminatory laws and regulations for the pre-

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672 (Oct. 19, 1989), available at [http://www.imo.org/Environment/mainframe.asp?topic\\_id=1026](http://www.imo.org/Environment/mainframe.asp?topic_id=1026).

180. Convention for the Protection of the Marine Environment of the North-East Atlantic, Sept. 22, 1992 [hereinafter OSPAR Convention].

181. Erik Molenaar & Robert Corell, Background Paper: Arctic Shipping 11 (Sept. 4, 2008), available at <http://arctic-transform.org/download/ShipBP.pdf>. See also ARCTIC COUNCIL, ARCTIC MARINE STRATEGIC PLAN (Nov. 24, 2004), available at [http://arcticportal.org/uploads/vx/IW/vxIWcyCi\\_7UnSBwZDbPVug/AMSP-Nov-2004.pdf](http://arcticportal.org/uploads/vx/IW/vxIWcyCi_7UnSBwZDbPVug/AMSP-Nov-2004.pdf).

182. See Bob Weber, *U.S. Agency Joins Calls for International Rules on Arctic Shipping, Resources*, CANADIAN PRESS, Feb. 3, 2009, available at <http://www.canadaeast.com/news/article/560152>. The report by the National Oceanic and Atmospheric Administration underscores the fact that there are few international rules protecting northern ecosystems. *Id.* Accordingly, standards need to be made mandatory and northern users should contribute to a new fund to help pay for inevitable environmental accidents or search-and-rescue efforts. *Id.*; see also COASTAL RESPONSE RES. CTR., OPENING THE ARCTIC SEAS: ENVISIONING DISASTERS AND FRAMING SOLUTIONS (2009), available at [http://www.crrc.unh.edu/workshops/arctic\\_spill\\_summit/arctic\\_summit\\_report\\_final.pdf](http://www.crrc.unh.edu/workshops/arctic_spill_summit/arctic_summit_report_final.pdf).

vention, reduction and control of marine pollution from vessels in ice-covered areas within the limits of the exclusive economic zone, where particularly severe climatic conditions and the presence of ice covering such areas for most of the year create obstructions or exceptional hazards to navigation, and pollution of the marine environment could cause major harm to or irreversible disturbance of the ecological balance. Such laws and regulations shall have due regard to navigation and the protection and preservation of the marine environment based on the best available scientific evidence.<sup>183</sup>

This provision was drafted by Canada mainly to accommodate that government's national interests in the Arctic. Within waters that are considered ice-covered for most of the year, coastal states are permitted to adopt non-discriminatory laws and regulations to prevent and reduce marine pollution that might adversely impact that oceanic environment. This pattern has been adopted by the other Arctic littoral states in regulating foreign shipping activities navigating through their ice-covered territorial seas and EEZs.

Given continued ice melt in the Arctic Ocean, two main routes seem likely possibilities for vessel passage through the region, the Northwest Passage and the Northern Sea Route. The Northern Sea Route includes all routes across the Russian Arctic coastal seas from Kara Gate (located at the southern tip of Novaya Zemlya) to the Bering Strait.<sup>184</sup> The Northwest Passage refers to the marine routes between the Atlantic and Pacific Oceans that cross the straits and sounds of the Canadian Arctic archipelago along the far northern coast of North America.<sup>185</sup> Since it lies wholly within Russia's sovereign waters, little controversy surrounds the legal status of the Northern Sea Route. On the other hand, the legal status of the Northwest Passage is complicated by marked disagreement between Canada and the United States. Canada asserts that the passage lies within Canada's sovereign archipelagic waters, and thus empowers Canada with full jurisdictional rights and control over vessel passage through it. Contrariwise, the United

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183. 1982 LOS Convention, *supra* note 23, art. 234. For an insightful treatment, see also Rob Huebert, *Article 234 and Marine Pollution Jurisdiction in the Arctic*, in GOVERNING HIGH SEAS FISHERIES 249-67, *supra* note 59.

184. See Leonid Tymchenko, *The Northern Sea Route: Russian Management and Jurisdiction over Navigation in Arctic Seas*, GOVERNING HIGH SEAS FISHERIES 269, *supra* note 59.

185. On the detailed legal issues pertaining to the status of the Northwest Passage, see Donat Phrand, *The Arctic Waters and the Northwest Passage: A Final Revisit*, 38 OCEAN DEV. & INT'L L. 3 (2007).

States asserts that the Northwest Passage is in fact an international strait, and thus ships are free to pass through it as is guaranteed under the regime of transit passage.<sup>186</sup> In any event, this dispute is not likely to negatively impact international efforts to make the Northwest Passage safer for future marine navigation.

Routing systems for ships are established to improve the safety of navigation in converging areas or in areas where the density of vessel traffic is great, where freedom of vessel movement is impeded by restricted ocean space, and where there exist “obstructions to navigation, limited depths, or unfavorable meteorological conditions.”<sup>187</sup> The fact remains that at present no comprehensive mandatory or even voluntary IMO routing system exists for vessels navigating through the Arctic marine area in its entirety or even in part. Thus far, because of the prevalence of sea ice frozen year round, the international shipping industry appears to have omitted the Arctic from being assigned its own scheme for shipping lanes there. In the near future, though, the impending growth of Arctic marine shipping will necessitate adopting such a strategy. One interesting proposal meriting consideration could treat possible future shipping routes through the Arctic marine region as resembling the situation of archipelagic sea lanes as established in the 1982 LOS Convention.<sup>188</sup> The procedure laid down in Article

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186. Mark Jarashow, Michael B. Runnels & Tait Swenson, *UNCLOS and the Arctic: The Path of Least Resistance*, 30 *FORDHAM INT'L. L.J.* 1587, 1592 (2007); Lee Clark, *Canada's Oversight of Arctic Shipping: The Need for Reform*, 33 *TUL. MAR. L. J.* 79, 91 (2008).

187. Transport Canada, General Provisions on Ships' Routing, Part II(1.1), in Marine Safety Directorate, Routing Standards No. TP 1802 (1991), available at <http://www.tc.gc.ca/marineSafety/TP/TP1802/part2.htm>.

188. 1982 LOS Convention, *supra* note 23, art. 53. In full, Article 53 avers that:

1. An archipelagic State may designate sea lanes and air routes thereabove, suitable for the continuous and expeditious passage of foreign ships and aircraft through or over its archipelagic waters and the adjacent territorial sea.

2. All ships and aircraft enjoy the right of archipelagic sea lanes passage in such sea lanes and air routes.

3. Archipelagic sea lanes passage means the exercise in accordance with this Convention of the rights of navigation and overflight in the normal mode solely for the purpose of continuous, expeditious and unobstructed transit between one part of the high seas or an exclusive economic zone and another part of the high seas or an exclusive economic zone.

4. Such sea lanes and air routes shall traverse the archipelagic waters and the adjacent territorial sea and shall include all normal passage routes used as routes for international navigation or overflight through or over archipelagic waters and, within such routes, so far as ships are concerned, all normal navigational channels, provided that duplication of routes of similar convenience between the same entry and exit points shall not be necessary.

5. Such sea lanes and air routes shall be defined by a series of continuous axis lines from the entry points of passage routes to the exit points. Ships and aircraft in archipelagic sea lanes passage shall not deviate more than 25 nautical miles to either side of such axis lines during passage, provided

53, implemented by the IMO General Provisions on Ships' Routing, could prove a suitable model for proposing an "Arctic Sea Lanes" scheme to IMO.<sup>189</sup>

International regulation of shipping safety standards to ensure environmental protection is primarily carried out by the International Maritime Organization, specifically by its Marine Environment Protection Committee and by the Maritime Safety Committee, especially in its Sub-Committee on Navigation and its Sub-Committee on Design and Equipment. Regarding substantive standards or legal rules, the binding international legal framework for the Arctic is generic, not regionally specific. That is, there are no special IMO discharge, emission, or ballast water exchange standards for the Arctic marine area; there is no comprehensive mandatory or voluntary IMO ships' routing system for the entire Arctic marine area or even a substantial portion of it; and there are no legally binding special construction, design, equipment, and manning standards—even for fuel composition and ballast water treatment—for the Arctic marine area.

The 1982 LOS Convention requires in articles 94 (Duties of the Flag State), 217 (Enforcement by the Flag State), and 219 (Measures relating to Seaworthiness of Vessels to Avoid Pollution) that states implement international regulations and standards govern-

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that such ships and aircraft shall not navigate closer to the coasts than 10 per cent of the distance between the nearest points on islands bordering the sea lane.

6. An archipelagic State which designates sea lanes under this article may also prescribe traffic separation schemes for the safe passage of ships through narrow channels in such sea lanes.

7. An archipelagic State may, when circumstances require, after giving due publicity thereto, substitute other sea lanes or traffic separation schemes for any sea lanes or traffic separation schemes previously designated or prescribed by it.

8. Such sea lanes and traffic separation schemes shall conform to generally accepted international regulations.

9. In designating or substituting sea lanes or prescribing or substituting traffic separation schemes, an archipelagic State shall refer proposals to the competent international organization with a view to their adoption. The organization may adopt only such sea lanes and traffic separation schemes as may be agreed with the archipelagic State, after which the archipelagic State may designate, prescribe or substitute them.

10. The archipelagic State shall clearly indicate the axis of the sea lanes and the traffic separation schemes designated or prescribed by it on charts to which due publicity shall be given.

11. Ships in archipelagic sea lanes passage shall respect applicable sea lanes and traffic separation schemes established in accordance with this article.

12. If an archipelagic State does not designate sea lanes or air routes, the right of archipelagic sea lanes passage may be exercised through the routes normally used for internal navigation.

*Id.* art. 53.

189. Molenaar & Corell, *supra* note 181, at 23.

ing ship construction, equipment, and seaworthiness.<sup>190</sup> These are standards essentially contained in the Safety of Life at Sea Convention (SOLAS)<sup>191</sup> and the 1966 Load Lines Convention,<sup>192</sup> as augmented by a raft of codes, recommendations, and guidelines which, while not legally binding, have been broadly implemented by states.<sup>193</sup>

The 1974 SOLAS Convention, as modified by its 1978 and 1988 Protocols,<sup>194</sup> intends to promote safety of life at sea by ensuring that a ship is fit for international service on the oceans. In general, SOLAS sets forth minimum standards for vessels regarding construction, stability, machines, fire protection, lifesaving, communications, carriage of dangerous goods, surveys, and certification of vessels and navigation safety.<sup>195</sup> Flag states are responsible for ensuring their ships comply with SOLAS requirements, as evidenced by prescribed certification.<sup>196</sup> Contracting states may inspect vessels of other parties if reasonable grounds exist for believing a ship and its equipment are not in compliance with Convention requirements.<sup>197</sup> The 1978 Protocol, with crude oil and other product carriers in mind, added unscheduled inspections, mandatory annual surveys, and port state control requirements to the SOLAS regulations. The 1988 Protocol introduced a new system of surveys and certification that aims to bring SOLAS more in line provisions in

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190. *Id.* arts. 94, 217 & 219.

191. International Convention for the Safety of Life at Sea, 1974, Nov. 1, 1974, 32 U.S.T. 47 [hereinafter SOLAS]. In 2009, 159 states are party to this instrument. IMO, Status of Conventions, *supra* note 98.

192. International Convention on Load Lines, 1966, Apr. 5, 1966 (entered into force July 21, 1968) 18 U.S.T. 1857, 640 U.N.T.S. 133, *available at* <http://images.io.gov.mo/bo/i/99/50/dlar-49209-69-eng.pdf>. In 2009, 159 states are contracting parties to this instrument. IMO, Status of Conventions, *supra* note 98.

193. Some examples include: the International Safety Management Code; the Life Saving Appliance Code; the International Code for Application of Fire Test Procedures; the International Code for Construction and Equipment of Ships Carrying Liquefied Natural Gas in Bulk; the International Code for the Construction and Equipment of Ships Carrying Dangerous Chemicals in Bulk; and the Guidelines on the Enhanced Programme of Inspections during Surveys of Bulk Carriers on Oil Tankers (1994).

194. International Conference on Tanker Safety and Pollution Prevention, 1978. Final Act of the Conference with attachments, including the Protocol of 1978 relating to the International Convention for the Safety of Life at Sea, 1974; Protocol of 1978 relating to the International Convention for the Prevention of Pollution from Ships, 1973. Feb. 16, 1978, IMO Docs. TSPP/CONF/10 and 10/Add. 1; Protocol, Mar. 2, 1978, TSPP/CONF 11 of 16 Feb. 1978; TSPP/CONF 12; Conference on the Harmonized System of Survey and Certification, Final Act of the Conference with resolution and the Protocol of 1988 relating to the International Convention for the Safety of Life at Sea, 1974. London, IMO 1989 ed. IMO Docs. HSSC/CONF/11 and Corr. 1. *See* IMO, Safety Conventions, [http://www.imo.org/inforesource/mainframe.asp?topic\\_id=829#04](http://www.imo.org/inforesource/mainframe.asp?topic_id=829#04) (last visited Aug. 21, 2009).

195. *See* SOLAS, *supra* note 191.

196. IMO, International Convention for the Safety of Life at Sea (SOLAS), 1974, [http://www.imo.org/TCD/contents.asp?topic\\_id=257&doc\\_id=647](http://www.imo.org/TCD/contents.asp?topic_id=257&doc_id=647).

197. *Id.*

the 1966 Load Lines Convention and MARPOL 73/78.<sup>198</sup> Amendments to SOLAS are made by the Maritime Safety Committee.

The 1966 International Convention on Load Lines sets standards and limits on the draught to which a ship may be loaded, principally for the vessel's safety. The Convention sets limits in the form of freeboards based on watertight integrity and damage stability calculations. The regulations also take into account hazards in special zones and seasonal areas.<sup>199</sup> In 1988, a Protocol was adopted to harmonize the Convention's survey and certification requirements with those in SOLAS and MARPOL 73 with 78. The Protocol additionally introduces the "tacit acceptance" amendment procedure into the Load Lines Convention, by which an amendment automatically enters into force by a particular date unless one-third of the parties specifically reject it.<sup>200</sup>

The 1978 IMO International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW)<sup>201</sup> constitutes the "generally accepted international regulations, procedures and practices" referred to in Article 94(5) of the 1982 LOS Convention, with which national measures are to conform.<sup>202</sup> The STCW Convention establishes basic requirements for training, certification, and watchkeeping to be used by seafarers. The technical provisions of the convention are contained in an annex, which deals with the procedures of keeping navigational watches, engineering watches, radio watchkeeping, training, and qualifications for the officers of tanker vessels, and mandatory minimum requirements for survival craft. In 1995, special amendments in the form of a STCW Code were adopted that substantially revised the 1978 convention.<sup>203</sup> Among these amendments was the requirement that detailed information had to be supplied to the IMO on the administrative measures taken to comply with the Convention, as well as enhanced procedures to allow for quicker intervention by port states in the event a vessel poses a danger to persons, property, or the environment.<sup>204</sup>

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198. *Id.*

199. See IMO, International Convention on Load Lines, Annex II, 1966, [http://www.imo.org/conventions/mainframe.asp?topic\\_id=254](http://www.imo.org/conventions/mainframe.asp?topic_id=254).

200. See *id.*

201. International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, July 7, 1978, reprinted in 6D BENEDICT ON ADMIRALTY, Doc. 14-6, at 14-483 (7th rev. ed. 1998). In 2009, 153 states are contracting parties to this convention. IMO, Status of Conventions, *supra* note 98.

202. 1982 LOS Convention, *supra* note 23, art. 94(5).

203. See IMO, International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, 1978, [http://www.imo.org/TCD/contents.asp?doc\\_id=651&topic\\_id=257](http://www.imo.org/TCD/contents.asp?doc_id=651&topic_id=257) (last visited Aug. 21, 2009).

204. *Id.*

In recent years, a problem has arisen over the abandonment of seafarers after accidents, sinkings, or bankruptcy. The applicable international instruments governing labor conditions is the 1982 LOS Convention in Article 94, paragraph 3(b), consisting of labor standards set by International Labour Organization (ILO), which includes the ILO conventions on the Repatriation of Seamen<sup>205</sup> and the Merchant Shipping Convention.<sup>206</sup> While the ILO Conventions on Repatriation and Merchant Shipping have attracted few ratifications, the latter is applied widely.<sup>207</sup>

The 1972 Convention on the International Regulations for Preventing Collisions at Sea, or COLREGS,<sup>208</sup> in line with Article 39 of the 1982 LOS Convention, sets forth detailed rules relating to the operation of vessels, including safe speeds, rights of way, actions to avoid collisions, lighting, signaling, fishing vessels, and provisions for traffic separation schemes for ocean navigation. If the Arctic were to become increasingly ice-free, and more vessel navigation were to occur, this instrument will become essential for insuring safe transit through the region. Much like “rules of the road,” vessels using these schemes are required to proceed in the appropriate traffic lane, in the general direction of traffic flow for that lane, and avoid crossing traffic lanes. It is the IMO’s Maritime Safety Committee (MSC) which will adopt resolutions dealing with traffic separation schemes, routing measures and designation of archipelagic sea lanes, and ship reporting systems for ocean transit through Arctic waters.<sup>209</sup>

As mandated by Article 41 of the 1982 LOS Convention, the IMO’s MSC Subcommittee on the Safety of Navigation submits reports and recommendations for changes to rules on navigation through international straits. The MSC also considers proposals for the adoption, de-

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205. International Labour Organization, Repatriation of Seamen Convention of 1926, C. 23, available at <http://www.ilo.org/ilolex/cgi-lex/convde.pl?C023> (last visited Aug. 21, 2009).

206. International Labour Organization, Convention Concerning (Minimum Standards) in Merchant Ships, C. 147 (1976), 15 I.L.M. 1288.

207. While the ILO Repatriation Convention has forty-six parties, the Minimum Standards Conventions has fifty-five parties. International Labour Organization, Database of International Labour Standards, <http://www.ilo.org/ilolex/english/convdisp1.htm> (click on the name of convention, then “See the ratifications for this Convention”) (last visited Jan. 21, 2010).

208. Convention on the International Regulations for Preventing Collisions at Sea, Oct. 20, 1972, 28 U.S.T. 3459. As of 2009, at least 153 states are contracting parties to this convention. IMO, Status of Conventions, *supra* note 98. For discussion of COLREGS, see also IMO, Convention on the International Regulations for Preventing Collisions at Sea, 1972 (COLREGs), [http://www.imo.org/Conventions/contents.asp?doc\\_id=649&topic\\_id=257](http://www.imo.org/Conventions/contents.asp?doc_id=649&topic_id=257).

209. IMO, *General Principles for Ship Reporting Systems and Ship Reporting Requirements, Including Guidelines for Report Incidents Involving Dangerous Goods, Harmful Substances, and/or Marine Pollutants*, IMO Doc. A 20/Res. 851 (20) (1997), revising IMO Doc. A 16/Res. 648 (1989).

signation, and substitution of archipelagic sea lanes in the Arctic. Input is given by the International Civil Aviation Organization (ICAO) concerning any implications for overflight and the safety of international air navigation in the Arctic, and by the International Hydrographic Organization for the symbols used to depict archipelagic sea lanes on charts. Coordinates of sea lanes are published in the United Nations' *Law of the Sea Bulletin*.

With increased volume of ocean traffic in the Arctic, such traffic navigation services allow for identification and monitoring of vessels, strategic planning of vessel movements, and provides navigational information and assistance. Ship reporting is mandatory for vessels passing through straits. To facilitate more uniform coordination of these services, the IMO Assembly in 1998 revised its 1989 General Principles for Ship Reporting Systems and Ship Reporting Requirements, Including Guidelines for Reporting Incidents Involving Goods, Harmful Substances and/or Marine Pollutants,<sup>210</sup> and adopted a set of Guidelines for Vessel Traffic Services (VTS), including Guidelines on Recruitment, Qualifications and Training of VTS Operators.<sup>211</sup>

Article 98 of the 1982 LOS Convention obligates ships to render assistance to any persons in distress or in danger of being lost at sea, a critical concern in the Arctic.<sup>212</sup> To this end, the International Convention on Maritime Search and Rescue (SAR Convention) was adopted in 1979 to redress incongruities in national plans and standardized procedures.<sup>213</sup> The SAR Convention is designed to establish a global system for responding to emergencies at sea, as it develops rescue and search plans to cover thirteen areas of the world's ocean whenever accidents occur or the rescue of persons in distress is necessary. Operation of the SAR Convention is facilitated by the Global Maritime Distress and Safety System (GMDSS) that was adopted in 1988 and entered into force in 1992 to provide more efficient communications support.<sup>214</sup> All passenger ships and cargo vessels over 300 gross tons on international voyages are required to carry equipment for satellite emergency radio

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210. See Transport Canada, Guidelines for Reporting Incidents Involving Goods, Harmful Substances and/or Marine Pollutants (1995), available at <http://www.tc.gc.ca/marinesafety/tp/tp9834/TP9834E.pdf>.

211. See IMO, *Guidelines for Vessel Traffic Services*, IMO Doc. A 20/Res. 857 (1997). See also IMO, *Vessel Traffic Services*, [http://www.imo.org/Safety/mainframe.asp?topic\\_id=387](http://www.imo.org/Safety/mainframe.asp?topic_id=387) (last visited Aug. 21, 2009).

212. 1982 LOS Convention, *supra* note 23, art. 98.

213. International Convention on Maritime Search and Rescue, Apr. 27, 1979, T.I.A.S. 11093. In early 2009, the SAR Convention has 95 parties, representing 59.76 percent of the world's tonnage. IMO, *Status of Conventions*, *supra* note 98.

214. See GMDSS OVERVIEW: An Overview of the Global Maritime Distress & Safety System, <http://www.navcen.uscg.gov/marcomms/gmdss/> (last visited Aug. 21, 2009).

beacons to improve chances of rescue after an accident and radio transponders to aid in location of ships or survival craft.<sup>215</sup> These rescue efforts should be aided considerably by satellite-based communication systems such as Global Positioning System (GPS) and the Global Navigation Satellite System.<sup>216</sup>

Finally, from 1991 to 2002, the IMO sponsored negotiations for a special international polar navigation code to regulate ship traffic through the Arctic, and in December 2002, it “approved Guidelines for ships operating in Arctic ice-covered waters.”<sup>217</sup> The main purpose of this Code is to unify and internationalize ship standards in order to ensure ice-strengthening for ships, proper training and certification for polar navigators, appropriate navigation and survival equipment, a unified system of classification of ice conditions, and adequate standards for vessel propulsion power and hull strength. While the Code is nonbinding, its ultimate intention is bring the complex array of national standards into an international code that can be pragmatically followed to make ice-infested ship navigation safer and consonant with the arctic environmental protection strategy being promoted by the Arctic Council.<sup>218</sup> As maritime activities in the circumpolar north increase, the need for such a comprehensive polar navigation code undoubtedly will become patently obvious.

Primary responsibility for the enforcement of international rules and standards in Arctic waters rests with the flag state. Article 94 of 1982 LOS Convention requires each state to effectively exercise its jurisdiction and control over ships flying its flag and to ensure that their flagged vessels take measures to ensure safety at sea.<sup>219</sup>

The major initiative by the IMO to improve flag state jurisdiction is the International Safety Management Code, which became mandatory on June 1, 1998, for all tankers, bulk carriers, gas carriers, passenger ships, and high speed cargo craft over 500 gross tons. This Code requires that ship-owners or operators establish a safety

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215. In 1997, the IMO Assembly adopted a Code for the Investigation of Marine Casualties and Incidents to determine causes of accidents. Shipowners and operators of ships are also encouraged in this code to install Voyage Data Recorders on vessels. IMO, *Code for the Investigation of Marine Casualties and Incidents*, IMO Doc. A 20/Res.849 (1997).

216. See General Information on GPS, <http://www.navcen.uscg.gov/gps/default.htm> (last visited Aug. 21, 2009).

217. IMO, Guidelines for Ships Operating in Arctic Ice-Covered Water, MSC/Circ.1056/MEPC/Circ.399 (Dec. 23, 2002), available at [http://www.imo.org/includes/blastDataOnly.asp/data\\_id%3D6629/1056-MEPC-Circ399.pdf](http://www.imo.org/includes/blastDataOnly.asp/data_id%3D6629/1056-MEPC-Circ399.pdf). For an analysis of this Code and its potential relevance for the south polar seas, see Christopher C. Joyner, *The Emerging Legal Regime for Navigation through Antarctic Ice-Covered Waters*, in GILLIAN TRIGGS & ANNA RIDDELL, *ANTARCTICA: LEGAL AND ENVIRONMENTAL CHALLENGES FOR THE FUTURE* 61 (2007).

218. See Arctic Environmental Protection Strategy, *supra* note 104, at 14, 20, 26.

219. 1982 LOS Convention, *supra* note 23, art. 94.

management system containing safety and environmental protection policies, instructions, and procedures for ensuring safety and environmental protection and procedures for reporting and responding to accidents and emergencies. Responsibility for verifying the implementation of the Code rests with state governments.<sup>220</sup>

Port state control has become an important consideration for ensuring that ship-owners, insurers, or flag state administrators uphold their responsibilities. Port states can resort to several enforcement measures, including inspection of vessels visiting ports to ensure that they meet ship safety and marine pollution standards, as well as detaining vessels and barring entry to ships that fail to comply with the ISM Code.<sup>221</sup>

#### *D. Peace and Arms Control*

##### 1. Weapons of Mass Destruction

To make ocean space, including the Arctic, free from violence is a principal ambition among diplomats. Accordingly, negotiation of arms control arrangements flows from the aspiration that the oceans should be used for peaceful purposes. Indeed, as stated in the preamble of the 1982 LOS Convention, a cardinal purpose is to “promote the peaceful uses of the seas and oceans.”<sup>222</sup> Moreover, Article 88 of the Convention asserts that, “[t]he high seas shall be reserved for peaceful purposes.”<sup>223</sup> Toward that end, a number of international agreements have been adopted in recent decades.

The 1963 Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water (Test Ban Treaty)<sup>224</sup> provides that each party undertakes to prohibit any nuclear weapon test or any other nuclear explosion at any place under its control “in the atmosphere . . . or underwater, including . . . [the] high seas.”<sup>225</sup> The treaty further asserts in Article II that each party undertakes “to refrain from causing, encouraging, or in any way participating in,” any nuclear weapon explosion, anywhere underwater or in the atmosphere, or if it causes radioactive debris outside its territory.<sup>226</sup>

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220. IMO, International Management Code for the Safe Operation of Ships and For Pollution Prevention, A 18/Res. 741(1993) [hereinafter ISM Code 1993].

221. See 1982 LOS Convention, *supra* note 23, art. 25(2).

222. 1982 LOS Convention, *supra* note 23.

223. *Id.* art. 88.

224. Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water, Aug. 5, 1963, 14 U.S.T. 1313, 43 U.N.T.S. 480.

225. *Id.* art. I, (1)(a).

226. *Id.* art. I(2).

The 1971 Treaty on the Prohibition of the Emplacement of Nuclear and other Weapons of Mass Destruction on the Seabed and the Ocean Floor and in the Subsoil Thereof clearly applies to all maritime area in the Arctic.<sup>227</sup> Pursuant to this seabed arms control agreement, parties pledge “not to emplant or emplace on the seabed and the ocean floor and in the subsoil thereof . . . any nuclear weapons or any other types of weapons of mass destruction . . . or [means] for storing, testing, or using, such weapons.”<sup>228</sup> Though this agreement was limited to fixed installations, which none of the major maritime powers in the Arctic intended to deploy, it still provides for the right of state inspection to monitor and enforce compliance with its provisions.

The 1972 Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction<sup>229</sup> also is relevant to Arctic ocean law. This Convention provides that each party take all necessary measures to “prohibit and prevent the development, production, stockpiling, acquisition or retention of the [biological] agents, toxins, weapons, equipment and means of delivery . . . under its jurisdiction or under its control anywhere.”<sup>230</sup> “[A]nywhere” includes a party’s activities in Arctic ocean space, be it within or beyond that state’s territorial sea limits.

The 1977 Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (ENMOD)<sup>231</sup> prohibits parties from using military or other hostile environmental

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227. Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Sea-bed and the Ocean Floor and in the Subsoil Thereof, Feb. 11, 1971, 23 U.S.T. 701, 955 U.N.T.S. 115, *available at* <http://www.un-documents.net/seabed.htm> (last visited Aug. 21, 2009). All eight Arctic states are parties to this Seabed Arms Control Treaty (signatories), <http://www.state.gov/www/global/arms/treaties/seabed3.txt> (last visited Aug. 21, 2009).

228. *Id.* art. I(1).

229. Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction, Apr. 10, 1972, 26 U.S.T. 583, 1015 U.N.T.S. 163 [hereinafter Biological Weapons Convention], *available at* <http://www.opbw.org/convention/conv.html>. All eight Arctic littoral states are parties to this instrument. U.N. Office at Geneva, Disarmament: Membership of the Biological Weapons Convention, [http://www.unog.ch/80256EE600585943/\(httpPages\)/7BE6CBBEA0477B52C12571860035FD5C?OpenDocument](http://www.unog.ch/80256EE600585943/(httpPages)/7BE6CBBEA0477B52C12571860035FD5C?OpenDocument) (click on “States Parties”) (last visited Aug. 21, 2009).

230. Biological Weapons Convention, *supra* note 229, art. VI.

231. Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques, May 18, 1977, 31 U.S.T. 333 [hereinafter ENMOD], *available at* <http://www.un-documents.net/enmod.htm> (last visited Aug. 21 2009). All Arctic states, save for Iceland, are contracting parties to this Convention. U.N. Office for Disarmament Affairs, ENMOD (in alphabetical order), *available at* [http://disarmament.un.org/TreatyStatus.nsf/ENMOD%20\(in%20alphabetical%20order\)?OpenView](http://disarmament.un.org/TreatyStatus.nsf/ENMOD%20(in%20alphabetical%20order)?OpenView) (last visited Aug. 21, 2009).

techniques against another state party.<sup>232</sup> The ENMOD Convention deals with environmental changes produced by “deliberate manipulation of natural processes” in war that result in adverse impacts on the environment.<sup>233</sup> This agreement forbids manipulation of natural processes (including the biota, lithosphere, hydrosphere, or atmosphere) as an instrument of armed conflict if their effects are “widespread, long-lasting, or severe. . . .”<sup>234</sup> Inclusion of the hydrosphere clearly brings within the scope of this Convention activities affecting the use of Arctic Ocean space.

Dispute settlement occupies a critical place in contemporary ocean law and in the 1982 LOS Convention. The Convention requires, in Article 279, that parties settle disputes by “peaceful means in accordance with Article 2, paragraph 3 of the Charter of the United Nations.”<sup>235</sup> To this end, parties may resort to the use of negotiation, inquiry, mediation, conciliation, arbitration, judicial settlement, regional arrangements, or any other peaceful means of their choice. These provisions apply no less to disputes concerning Arctic waters.<sup>236</sup>

## 2. International Criminal Law

Related to peaceful uses and national security considerations is the universal desire to suppress and punish various crimes at sea, in particular, smuggling illicit goods such as narcotic drugs and persons from one country to another, slave traders, piracy, and armed robbery. Article 108 of the 1982 LOS Convention<sup>237</sup> and Ar-

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232. ENMOD, *supra* note 231, art. 1.

233. *Id.* art. 2.

234. *Id.* art. 1(1).

235. 1982 LOS Convention, *supra* note 23, art. 279.

236. The 1982 LOS Convention actually provides for special dispute settlement mechanisms to resolve ocean-related disputes. The International Tribunal for the Law of the Sea, created by the Convention and in existence since 1996, has four standing chambers to deal with Seabeds Disputes, Summary Procedure, Fisheries Disputes, and Marine Environmental Disputes. The diplomatic complement to this judicial institution, the Agreement on the Privileges and Immunities of the International Tribunal for the Law of the Sea, was opened for signature on July 1, 1997. In addition, conflict prevention is to be enhanced by establishment of a special maritime Boundary Commission, and other dispute settlement mechanisms include resort to arbitration as set out in Annex VIII of the Convention. Alternatively, parties may opt to submit a dispute to conciliation procedures, as furnished in Annex V of the Convention. Special Arbitration procedures are even provided for in Annex VIII of Convention to deal with disputes relating to fisheries, protection and preservation of the marine environment, marine scientific research or navigation including pollution from vessels and from dumping. The modern law for the oceans, including the Arctic, aspires to create a maritime environment free from violence or conflict. Imposing limits on the reach of certain weapons systems and providing for viable means to resolve disputes offers greater opportunities for Arctic Ocean space to be used exclusively for peaceful purposes.

237. 1982 LOS Convention, *supra* note 23, art. 108. This provision asserts that:

1. All States shall cooperate in the suppression of illicit traffic in narcotic

article 17 of the 1988 United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances<sup>238</sup> furnish the legal framework for international cooperation aimed at suppressing illicit traffic of these substances at sea.

As transoceanic travel has increased, so too has concern over the safety of passengers from various forms of unlawful acts. A number of international agreements have been negotiated with the express intent of suppressing international criminal activities on or over high seas areas, beyond the limits of national jurisdiction. While these instruments clearly are intended to promote peaceful purposes as stipulated in the 1982 LOS Convention, they are more specifically directed toward certain types of conduct that threaten the safety of persons in high seas areas, even in the Arctic region.

The 1963 Convention on Offences and Certain Other Acts Committed on Board Aircraft<sup>239</sup> applies to acts that might jeopardize the safety and security of aircraft “in flight . . . or on the surface of the high seas or of any other area outside the territory of any State.”<sup>240</sup> The state of registration is obligated to establish jurisdiction over offenses committed on board its aircraft, whether in flight over national territory or the high seas,<sup>241</sup> including the Arctic Ocean.

The 1970 Hague Anti-Hijacking Convention<sup>242</sup> provides that it is an offense for any person to seize or attempt to seize an aircraft in flight, including over the high seas—i.e., beyond the limits of

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drugs and psychotropic substances engaged in by ships on the high seas contrary to international conventions.

2. Any State which has reasonable grounds for believing that a ship flying its flag is engaged in illicit traffic in narcotic drugs or psychotropic substances may request the co-operation of other States to suppress such traffic.

*Id.*

238. United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances, Dec. 20, 1988, Document of the U.N. Economic and Social Council Doc. E/CONF.82/15, Corr.1 and Corr.2, available at [http://www.incb.org/pdf/e/conv/1988\\_convention\\_en.pdf](http://www.incb.org/pdf/e/conv/1988_convention_en.pdf). All eight Arctic states are party to this Convention. See Treaties Office Database, Summary of Treaty: UN Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances, <http://ec.europa.eu/world/agreements/prepareCreateTreatiesWorkspace/treatiesGeneralData.do?step=0&redirect=true&treatyId=526>.

239. Convention on Offences and Certain Other Acts Committed on Board Aircraft, Sept. 14, 1963, 20 U.S.T. 2941, 704 U.N.T.S. 219, available at <http://www.un.org/chinese/terrorism/1963E.pdf>. All eight Arctic states are parties to this Convention. ICAO, Tokyo Convention Parties, <http://www.icao.int/icao/en/leb/Tokyo.pdf> (last visited Jan. 21, 2010).

240. Convention on Offences and Certain Other Acts Committed on Board Aircraft, *supra* note 239, art. 1.

241. See *id.* art. 3.

242. Convention for the Suppression of Unlawful Seizure of Aircraft, Dec. 16, 1970, 22 U.S.T. 1641, available at <http://www.privacyinternational.org/article.shtml?cmd%5B347%5D=x-347-146570>. All eight Arctic states are parties to this Convention. ICAO (Hague Convention Parties), <http://www.icao.int/icao/en/leb/Hague.pdf>.

national jurisdiction.<sup>243</sup> Each party is expected to establish jurisdiction over the offense either on grounds of the aircraft being registered in that state, or as the state in whose territory the aircraft lands with an offender on board.<sup>244</sup> There is, moreover, the duty of the landing state to either extradite or prosecute those offenders taken into custody.<sup>245</sup>

The 1971 Montreal Sabotage Convention<sup>246</sup> applies to international acts that damage or destroy aircraft in service or in flight, if the place of takeoff or landing is outside the state of registry; its provisions make no distinction between flight over land territory or the high seas.<sup>247</sup> Should an offense be committed above the Arctic high seas, beyond the limits of national jurisdiction, a party is nonetheless obligated to establish jurisdiction over the offender aboard its registered aircraft.<sup>248</sup>

The 1988 Convention for the Suppression of Unlawful Acts Against the Safety of Maritime Navigation,<sup>249</sup> and its Protocol for the Suppression of Unlawful Acts Against the Safety of Fixed Platforms Located on the Continental Shelf<sup>250</sup> were promulgated as anti-terrorism measures in the aftermath of the *Achille Lauro* episode in 1985.<sup>251</sup> The principal purpose of this Convention is to en-

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243. Convention for the Suppression of Unlawful Seizure of Aircraft, *supra* note 242, pmb1.

244. *Id.* art. 7.

245. *Id.* art. 8.

246. Convention for the Suppression of Unlawful Acts against the Safety of Civil Aviation, Sept. 23, 1971, 24 U.N.T.S. 564, available at <http://cns.miis.edu/inventory/pdfs/aptcivair.pdf>. All eight Arctic states are parties to this Convention. U.N. Conventions on Terrorism, App. XII: U.N. Conventions on Terrorism, <http://www.cns.miis.edu/inventory/pdfs/apmunter.pdf> (last visited Aug. 21, 2009).

247. See Convention for the Suppression of Unlawful Acts against the Safety of Civil Aviation, *supra* note 246, arts. 1, 2.

248. *Id.* art. (5)(1)(b).

249. Convention for the Suppression of Unlawful Acts Against the Safety of Maritime Navigation, Mar. 10, 1988, 1687 U.N.T.S. 222, available at <http://untreaty.un.org/English/Terrorism/Conv8.pdf>. All eight Arctic states are parties to this Convention.

250. Protocol for the Suppression of Unlawful Acts Against the Safety of Fixed Platforms Located on the Continental Shelf, Mar. 10, 1988, 1678 U.N.T.S. 304, available at <http://untreaty.un.org/English/Terrorism/Conv9.pdf> (last visited Feb. 3, 2009). All eight Arctic states are parties to this Protocol.

251. On October 7, 1985, four heavily armed men representing the Palestine Liberation Front seized control of the Italian-flagged *Achille Lauro* cruise ship as it sailed from Alexandria to Port Said. The hijackers had been surprised by a crew member and acted prematurely. Holding the 400 passengers and crew hostage, they directed the vessel to sail to Tartus, Syria, and demanded the release of 50 Palestinians then in Israeli prisons. After being refused permission to dock at Tartus, the hijackers murdered a disabled American tourist, wheelchair-bound Leon Klinghoffer, and threw his body and wheelchair overboard. The vessel headed back towards Port Said and the hijackers agreed to abandon the liner in exchange for safe conduct and a flight to Tunisia aboard an Egyptian commercial airliner. Infuriated that a U.S. national had been murdered during the seizure, U.S. President Ronald Reagan ordered that the plane be intercepted by U.S. Navy F-14 fighters and forced to land in Sicily. Italian authorities took the terrorists into custody and subsequently tried

sure that persons who commit unlawful acts of violence that endanger the safe navigation of ships are either tried in the state where they are found or extradited to another state for prosecution.<sup>252</sup> The Convention also aims to provide a legal means to punish persons who commit acts of maritime terrorism on the high seas, as opposed to acts of piracy, anywhere in ocean space, including in Arctic seas.<sup>253</sup>

### CONCLUSION

The legal regime governing Arctic Ocean space is now a vast and complex network of treaty law mainly associated with the agreements comprising the contemporary law of the sea. This collection of rules, regulations, principles, and norms can regulate the activities of national governments in their uses of Arctic waters in several dimensions, ranging from freedom of the Arctic seas, the conservation of fisheries and other marine resources to prohibitions against marine pollution and dumping to regulations that ensure safe shipping, carriage and navigation and efforts to ensure peaceful uses of that ocean. What makes these developments especially impressive is that the bulk of world ocean law has been created during the last four decades, and the Arctic region is no less a beneficiary than any other ocean space.

Some general conclusions can be posited about this rapid evolution of contemporary ocean law for the Arctic. For one, marine environmental law has developed mostly on an *ad hoc* basis. International ocean law has emerged largely in reaction to accidents or to some perceived environmental crisis situation. Its relevance in the twenty-first century is highlighted by the increasing prospect of more vessels transiting Arctic waters and accelerated hydrocarbon development in offshore Arctic waters. Second, the international law for protecting and managing the global marine environment

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them in Italy, where they were convicted of murder and unlawfully endangering the passengers and crew. See MICHAEL K. BOHN, *THE ACHILLE LAURO HIJACKING: LESSONS IN THE POLITICS AND PREJUDICE OF TERRORISM* (Potomac Books, 2004). For the legal issues involved, see Christopher C. Joyner, *The 1988 IMO Convention on the Safety of Maritime Navigation: Towards a Legal Remedy for Terrorism at Sea*, 31 GERMAN Y.B. INT'L L. 230 (1989); Malvina Halberstam, *Terrorism on the High Seas: The Achille Lauro, Piracy and the IMO Convention on Maritime Safety*, 82 J. INT'L L. 269 (1988).

252. Convention for the Suppression of Unlawful Acts Against the Safety of Maritime Navigation, *supra* note 249, arts. 7, 8.

253. The definition of piracy under contemporary international law is provided in Article 101 of the 1982 LOS Convention. Piracy is defined as all "illegal acts of violence, detention or any act of depredation, committed for private ends by the crew or the passengers of a private ship . . ." 1982 LOS Convention, *supra* note 23, art. 101. The Convention goes on to assert that naval piracy can take place only "on the high seas" or "outside the jurisdiction of any State." *Id.*

and, hence that for the Arctic as well, has evolved piecemeal during the past three decades. The law has been created as patchwork obligations, rather than as a carefully premeditated, internationally-coordinated effort aimed at constructing a coherent legal regime for conserving and protecting biological diversity in the world's oceans. Yet, this process differs little from the manner in which a domestic system operates through its constitution, legislature, courts, bureaucracies, and sub-national governments. The facts remain that at the beginning of the new millennium the 1982 LOS Convention serves as the hub of the contemporary law of the sea regime for all ocean space, around which a corpus of international law for protecting and managing the Arctic Ocean has evolved in broad scope and is firmly in place.

In the coming decades, states must adopt a precautionary approach to ocean management in the Arctic region. That is, to manage activities affecting the Arctic Ocean, both national and international approaches must be taken in which governments anticipate, prevent, and arrest the causes of environmental degradation, even in cases where full scientific certainty is not available. The attitudes of Arctic littoral governments must be changed in order to establish more marine protected areas, conserve threatened species, ensure that fishing is carried out in a sustainable manner, reduce and eliminate marine pollution, and promote better integrated coastal management in the region. The widespread misperceptions that the world's oceans, including the Arctic, furnish unlimited resource bounty and are a global toilet into which the wastes of the world can be flushed, dissolved, or dissipated must be replaced with the view that the oceans entail a critical part of Earth's delicate life support system that must be preserved and protected, not destroyed. This is especially true in the polar north, given the fragility and relative pristine of the Arctic marine ecosystem. It is this realization that must guide the further evolution and policy implementation by governments of the legal regime for the Arctic Ocean.

Promotion of a comprehensive legal regime for protecting, conserving, and managing the Arctic Ocean must intensify throughout this century. The creation of the maritime legal agreements available to date has been *ad hoc* and difficult. Implementing, sustaining, and adjusting those rules and regulations for the Arctic in the coming decades will not be easy. Even so, the effectiveness of international ocean law in the Arctic rests on the genuine commitment by national governments to make it work. Governments make international law prohibiting pollution and over-fishing of the seas, and governments must enforce those laws against na-

tionals who violate them. In the final analysis, then, blame for possible degradation of the Arctic marine environment in the coming century will not lie in weak law. The legal regime for prudent use of Arctic Ocean space is present and plain, and most Arctic states acknowledge the application of most of these rules most of the time. Instead, the blame will fall to those governments that fail to comply with that law, or to enforce it when necessary.

In that fundamental regard, the legal regime for managing the Arctic Ocean in the coming decades will mirror the same preeminent challenges confronted by governments in the past. That said, the contemporary law of the sea will not fail in the Arctic. If failure does occur, it will lay with those governments who circumvent or undercut the law in order to exploit Arctic seas more extensively. They bear the ultimate responsibility for making good law work in the Arctic Ocean and for ensuring its compliance and enforcement. They also bear responsibility for failing to make the law work well. Nonetheless, in the wake of accelerated global warming and enormously increased hydrocarbon development, the threat of widespread degradation and living resource displacement in the Arctic marine ecosystem appear all the more likely. Given the relatively pristine nature of north polar ocean space today, that consequence seems an exorbitantly high environmental price to pay for the sake of a few Arctic governments who wish to exercise their myopic selfish national interests at the expense of disrupting living resources and indigenous people in the region.



**CANADA, THE EU, AND ARCTIC OCEAN GOVERNANCE:  
A TANGLED AND SHIFTING SEASCAPE AND FUTURE  
DIRECTIONS**

T. KOIVUROVA, E.J. MOLENAAR, AND D.L. VANDERZWAAG\*

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## I. INTRODUCTION

It is now widely accepted that global climate change will have dramatic impacts for the Arctic. The rapid warming of the Arctic climate was the first and most prominent of the ten key findings of the 2004 Arctic Climate Impact Assessment (ACIA)<sup>1</sup>. In September 2007, the Arctic ice cap was 23% below the last record, set in 2005.<sup>2</sup> This 2007 record exceeded the computer model predictions used to prepare the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (AR4) in 2007.<sup>3</sup> Perhaps even more important than ice-coverage as such, is the increasing percentage of first-year sea ice. Many scientists fear that the “Arctic meltdown” has become irreversible, even though the 2007 record remained intact in 2008.

Of particular importance to this paper are ACIA’s key findings number four, “[a]nimal species’ diversity, ranges, and distribution will change” and number six, “[r]educd sea ice is very likely to increase marine transport and access to resources.”<sup>4</sup> While the former predicts changes in the composition of the Arctic marine ecosystem in quantitative, qualitative, spatial, and temporal terms, the latter predicts increased pressure on this ecosystem due to more intensive exercise of existing maritime uses as well as new

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1. SUSAN JOY HASSOL, IMPACTS OF A WARMING ARCTIC: ARCTIC CLIMATE IMPACT ASSESSMENT 10 (2004).

2. Press Release, Nat’l Snow & Ice Data Ctr., Arctic Sea Ice Shatters All Previous Record Lows (Oct. 1, 2007), [http://nsidc.org/news/press/2007\\_seaiceminimum/20071001\\_pressrelease.html](http://nsidc.org/news/press/2007_seaiceminimum/20071001_pressrelease.html).

3. Press Release, Nat’l Ctr. for Atmosphere Res., Arctic Ice Retreating More Quickly than Computer Models Project (Apr. 30, 2007), <http://www.ucar.edu/news/releases/2007/seaiice.html>.

4. HASSOL, *supra* note 1, at 10-11.

uses. Examples of these are maritime navigation (for the transport of persons and cargo, including for tourism and military purposes), exploration and exploitation of living (e.g., fishing) and non-living (e.g., oil and gas) marine resources, construction of artificial installations, laying of cables and pipelines, overflight and marine scientific research (including bio-prospecting).

In view of these current and predicted threats to the Arctic marine ecosystem, the question logically arises if existing Arctic governance and regulatory regimes are adequately responding to these threats.<sup>5</sup> The Arctic is covered by a variety of governance and regulatory regimes relating to the protection and preservation of the marine environment and the conservation and sustainable use of marine biodiversity. However, some commentators perceive the planting of the flag of the Russian Federation on the deep-sea bed of the North Pole in August 2007 as the start of the last “scramble for territory and resources”<sup>6</sup> in human history, likely even to lead to armed conflicts. One of the key messages of the May 2008 Ilulissat Declaration by the five Arctic Ocean coastal states<sup>7</sup> is that this perception is fundamentally flawed.

The objective of this paper is to examine (in a historical perspective) the roles of the European Union (EU) and Canada in governance and regulation of human activities in the Arctic Ocean. Section two describes the existing “tangled” nature of governance in the Arctic with a focus on law of the sea, approaches and challenges in the region, as well as on EU and Canadian participation in the activities of the Arctic Council. The “shifting seascape” in governance is next highlighted in section three with a review of increasing calls for change from scholars and other groups, recent governance initiatives from the United States and Arctic Ocean coastal states, and evolving EU and Canadian perspectives towards ocean governance. The paper concludes with section four, which surveys possible future directions for strengthening ocean

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5. For a recent discussion on Arctic fisheries, see ERIK J. MOLENAAR & ROBERT CORELL, BACKGROUND PAPER: ARCTIC FISHERIES (2009), available at <http://www.arctic-transform.org/download/FishBP.pdf>. For a recent discussion on Arctic shipping, see Erik J. Molenaar, *Arctic Marine Shipping: Overview of the International Legal Framework, Gaps and Options*, 18 FLA. ST. J. TRANSNAT'L L. & POL'Y 289 (2009). For a cross-sectional discussion, see TIMO KOIVUROVA & ERIK J. MOLENAAR, INTERNATIONAL GOVERNANCE AND REGULATION OF THE MARINE ARCTIC: OVERVIEW AND GAP ANALYSIS (2009), available at <http://www.panda.org/arctic>.

6. Scott G. Borgerson, *Arctic Meltdown: The Economic and Security Implications of Global Warming*, FOREIGN AFF., Mar.-Apr. 2008, at 63.

7. Arctic Ocean Conference, *Ilulissat Declaration* (May 28, 2008), available at <http://arctic-council.org/filearchive/Ilulissat-declaration.pdf>. [hereinafter *Ilulissat Declaration*]. The five are: Canada, Denmark (on behalf of Greenland), Norway, the Russian Federation and the United States.

governance in the Arctic, with the spectrum of options including, among others, expanding the spatial scopes of the North-East Atlantic Fisheries Commission (NEAFC), established by the NEAFC Convention<sup>8</sup>, and the OSPAR Commission, established by the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) Convention,<sup>9</sup> and reform by means of an Implementing Agreement under the United Nations Convention on the Law of the Sea (LOS)<sup>10</sup>.

## II. TANGLED GOVERNANCE

### A. *The Law of the Sea and the Arctic Ocean*

#### 1. Introduction

The cornerstones of the current international law of the sea are the LOS Convention and its two Implementing Agreements, the Part XI Deep-Sea Mining Agreement,<sup>11</sup> and the Fish Stocks Agreement.<sup>12</sup> The current international law of the sea applies to the marine environment of the entire globe; including, therefore, the entire marine environment of the Arctic Ocean, however defined.

The LOS Convention's overarching objective is to establish a universally accepted, just, and equitable legal order, or "Constitution," for the oceans that lessens the risk of international conflict and enhances stability and peace in the international community. The LOS Convention currently has 160 parties, the Part XI Deep-Sea Mining Agreement has 138 parties, and the Fish Stocks Agreement has 77 parties. All Arctic states are parties to these three treaties, except for the United States, which is not a party to either the LOS Convention or the Part XI Deep-Sea Mining Agreement.<sup>13</sup> The European Community (EC) is party to all three

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8. Convention on Future Multilateral Co-Operation in North-East Atlantic Fisheries, Nov. 18, 1980, 1285 U.N.T.S. 129 [hereinafter NEAFC].

9. Convention for the Protection of the Marine Environment of the North-East Atlantic, Sept. 22, 1992 [hereinafter OSPAR Convention], available at [http://www.ospar.org/html\\_documents/ospar/html/OSPAR\\_Convention\\_e\\_updated\\_text\\_2007.pdf](http://www.ospar.org/html_documents/ospar/html/OSPAR_Convention_e_updated_text_2007.pdf) (in force Mar. 25, 1998); *id.*, Annex V (in force Aug. 30, 2000); *id.* art. 27(2).

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

11. Agreement Relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982, July 28, 1994, 33 I.L.M. 1309.

12. Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982, Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, Aug. 4, 1995, 34 I.L.M. 1542.

13. See United Nations, Table Recapitulating the Status of the Convention and of the

treaties. This is important in view of the fact that Denmark, Finland, and Sweden are Member States of the European Union<sup>14</sup> and Iceland and Norway are parties to the European Economic Area (EEA) Agreement.<sup>15</sup>

The LOS Convention recognizes the sovereignty, sovereign rights, freedoms, rights, jurisdiction, and obligations of states within several maritime zones. The most important of these, for the Arctic, are internal waters, territorial sea, exclusive economic zone (EEZ), continental shelf, high seas, and the "Area."<sup>16</sup> Internal waters lie landward of the baselines. The maximum breadth of the territorial sea is twelve nautical miles (1 nautical mile = 1,852 meters) measured from the baselines. Twenty-four nautical miles is the maximum breadth for the contiguous zone as is 200 nautical miles for the EEZ. However, in many geographical settings these maximum breadths cannot be reached due to the proximity of the baselines of opposite states. In such circumstances, maritime boundaries have to be agreed on by the opposite states. Several of these maritime boundaries have already been established in the Arctic Ocean and negotiations on several others are still ongoing.

The LOS Convention recognizes the sovereignty of a coastal state over its internal waters, archipelagic waters and territorial sea, the airspace above, and its bed and subsoil. Sovereignty entails exclusive access and control of living and non-living resources and all-encompassing jurisdiction over all human activities, unless states have in one way or another consented to restrictions thereon. The LOS Convention also recognizes specific economic and resource-related sovereign rights and jurisdiction of a coastal state with respect to its EEZ and, where relevant, outer continental shelf. Nevertheless, other states have navigational rights or freedoms within the maritime zones of coastal states and with respect to their EEZ, and, where relevant, outer continental shelf, also the freedoms of overflight, laying of submarine cables and pipelines and "other internationally lawful uses of the sea related to these freedoms . . . ."<sup>17</sup>

Article 76 of the LOS Convention also recognizes that in certain circumstances the continental shelf extends beyond 200 nauti-

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Related Agreements, as at 5 February 2009, [http://www.un.org/depts/los/reference\\_files/status2008.pdf](http://www.un.org/depts/los/reference_files/status2008.pdf) (last visited July 19, 2009).

14. Even though EU membership of Denmark does not encompass Greenland.

15. Agreement on the European Economic Area, March 17, 1993, O.J. No. L 1, 3.1.1994. Note that the EEA Agreement does not apply to Svalbard.

16. The LOS Convention defines "[a]rea" as "the seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction." LOS Convention, *supra* note 10, art. 1(1)(1).

17. LOS Convention, *supra* note 10, art. 58(1).

cal miles from the baselines. This is the so-called “outer continental shelf.” Coastal states that take the view that they have an outer continental shelf must submit information on their outer limits on the basis of the criteria in Article 76 to the Commission on the Limits of the Continental Shelf (CLCS).<sup>18</sup> “The limits of the [outer continental] shelf established by a coastal state on the basis of these recommendations [of the CLCS] shall be final and binding.”<sup>19</sup> So far, only the Russian Federation and Norway have made submissions to the CLCS in relation to their outer continental shelves that lie within the Arctic Ocean. The CLCS has, up until now, only made an interim recommendation in relation to the submission of the Russian Federation.<sup>20</sup> The CLCS essentially recommended that the Russian Federation make a revised submission as regards the central Arctic Ocean basin.<sup>21</sup> The Russian Federation is expected to do this in 2010. Canada, Denmark (in relation to Greenland), and the United States are all engaged in activities to enable them to make submissions to the CLCS, despite the fact that the United States is not yet party to the LOS Convention.<sup>22</sup> Canada has to make its submission by December 2013 and Denmark by December 2014.<sup>23</sup> It should be noted that it is likely that there will be two pockets of the Area in the central Arctic Ocean and one large high seas pocket.

In the high seas, all states have the freedoms already mentioned above as well as the freedom to construct artificial islands and other installations, the freedom to fish, and the freedom to conduct scientific research. These freedoms are all subject to conditions and obligations.<sup>24</sup> The Area and its resources are the “common heritage of mankind” and the International Sea-Bed Authority (ISA) is charged with organizing and controlling all activities of exploration for, and exploitation of, the resources of the Area.<sup>25</sup>

## 2. Rights, Interests, and Obligations of the EU and Its Member States

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18. *Id.* art. 76.

19. *Id.* art. 76(8).

20. The Secretary-General, *Addendum to Report of the Secretary-General on the Oceans of the Law and the Sea, delivered to the General Assembly*, U.N. Doc. A/57/57/Add.1 (Oct. 8, 2002), available at <http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N02/629/28/PDF/N0262928.pdf?OpenElement>.

21. *Id.* ¶ 41.

22. See National Security Presidential Directive No. 66 & Homeland Security Presidential Directive No. 25: Arctic Region Policy at sec. D(4)(a) (Jan. 9, 2009) [hereinafter Presidential Policy Directive], available at <http://www.whitehouse.gov>.

23. See LOS Convention, *supra* note 10, annex II, art. 4.

24. *Id.* art. 87(1).

25. *Id.* arts. 1(1)(3), 136, 156, 157(1).

The competence of the EU and its Member States regarding the Arctic Ocean is determined by general international law as well as by European Community (EC) law. It goes without saying that EU Member States cannot confer more extensive competence to the EU than they themselves possess in accordance with international law.

The fact that none of the current EU Member States are coastal states with respect to the Arctic Ocean (not even via the EEA Agreement or via Greenland, which chose in the mid-1980s to withdraw from the then EEC, and hence is not part of the EC or EU) is clearly a major feature and constraint of EU policy regarding the Arctic Ocean. While neither the EU nor its Member States can act as coastal states with respect to the Arctic Ocean, they can still act in a wide range of other capacities. For instance, they may act as flag states, port states, market states, or with respect to their natural and legal persons. In a flag state capacity, the EU and its Member States are able to exercise their rights and discharge their obligations with respect to the Arctic Ocean, most notably the freedoms of the high seas in the high seas pockets in the Arctic Ocean (*e.g.*, marine scientific research and the laying of cables and pipelines), the navigational rights and freedoms in the maritime zones of Arctic Ocean coastal states, and the obligations relating to marine living resources and the marine environment connected to these rights and freedoms.

In addition to these rights and obligations, the EU and its Member States may also have various user and non-user interests in the Arctic Ocean. The main user interests would be related to the exploration and exploitation of offshore hydrocarbon resources. As traditional energy resources will be of paramount importance to all EU Member States for at least the next few decades, access to the hydrocarbon resources in the Arctic will be an important security issue. The main non-user interests include the protection and preservation of the marine environment and safeguarding marine biodiversity. The EU and its Member States could argue that they want to become involved in the governance and regulation of the marine Arctic to safeguard these non-user interests, in their own right, or, together with non-Arctic states, on behalf of the international community. Such participation may for instance be aimed at monitoring and ensuring that obligations with respect to the Arctic marine area are complied with.

In case the EU would act, it would also need to have shared or exclusive competence. The distribution of competence between the EU and its Member States is determined by the EC Treaty, the EU

Treaty,<sup>26</sup> and other treaties concluded within the framework of the EC and the EU. The scope and extent of EC and EU competence is governed by the principle of conferral and the use of conferred (exclusive) competence is, *inter alia*, governed by the principles of subsidiarity and proportionality.<sup>27</sup> The distribution of competence is a dynamic matter in which the judgments of the European Court of Justice (ECJ) play a key role. While adjustments of competence can be a consequence of increasing importance of EC legislation and acts by the EC Commission, it can also be negotiated between EU Member States. The latter adjustments can lead to more competence being conferred to the EC and EU but also to competence being delegated back to EU Member States.

The spheres in which the EC has competence can be gleaned from Article 3 of the EC Treaty, which lists the activities the EC shall undertake for the purposes set out in Article 2. While Article 3 sets out the policy areas which the EU may address, it does not in itself provide a legal basis for specific legislative acts. The specific measures available to the EC are set out in other parts of the EC Treaty. Included in this list are fishing, shipping (transport), and environmental protection.<sup>28</sup> In addition, Article 6 of the EC Treaty stipulates, “[e]nvironmental protection requirements must be integrated into the definition and implementation of the Community policies and activities referred to in Article 3, in particular with a view to promoting sustainable development.”<sup>29</sup>

EU Member States are generally free to pursue their own policies alongside the EU, unless the EU’s or EC’s competence is exclusive or a subject matter in shared competence is dealt with exhaustively by the EU, leaving the Member States no room for additional measures. The ECJ already ruled in 1981 that the EC has exclusive competence in fisheries conservation and management.<sup>30</sup> This exclusiveness relates to community waters and probably also seaward thereof, but is also subject to some exceptions, for instance in relation to enforcement.<sup>31</sup> The consequential external

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26. Consolidated Version of the Treaty on European Union, 2008 O.J. (C 115) 13 [hereinafter EU Treaty].

27. See Consolidated Version of the Treaty Establishing the European Community, art. 5, 2006 O.J. (C 321) E1 [hereinafter EC Treaty]; EU Treaty, *supra* note 26, arts. 4-5.

28. The sectors and spheres listed in Article 3 of the EC Treaty are addressed in more detail in other provisions in the EC Treaty. As regards fisheries, see EC Treaty, *supra* note 27, arts. 32-38; as regards shipping, see *id.* arts. 70-80; as regards environmental protection, see *id.* arts. 6, 174-176.

29. *Id.* art. 6.

30. *Comm’n of the Eur. Community. v. U.K.*, 1981 E.C.R. 1045.

31. See Eur. Community, *Declaration Upon Signature of the Fish Stocks Agreement* (June 27, 1996), available at [http://www.un.org/Depts/los/convention\\_agreements/fish\\_stocks\\_agreement\\_declarations.htm#EC](http://www.un.org/Depts/los/convention_agreements/fish_stocks_agreement_declarations.htm#EC); Eur. Community, *Declaration Upon*

competence of the EC in the sphere of fisheries implies that the EC represents EU Member States, for instance in negotiations with non-EU Member States and in regional fisheries management organizations (RFMOs). Subject to some exceptions, EU Member States cannot become members of RFMOs alongside the EC. One of these exceptions relates to “overseas countries and territories” and enables, *inter alia*, Denmark to become a member of RFMOs alongside the EC on behalf of the Faroe Island, Greenland, or both.

Competence with regards to shipping and environmental protection is shared between the EU and its Member States. This mixed competence also means that the EC cannot represent EU Member States in international fora, like the International Maritime Organization (IMO). So far, the EC has, as an intergovernmental organization, concluded an agreement on cooperation with the IMO.<sup>32</sup> In areas of shared competence, agreements are often signed by the EC as well as by EU Member States (so-called “mixed agreements”).<sup>33</sup> This requires close cooperation between them.

Competence over offshore hydrocarbon activities is a much less straightforward matter. While the list in Article 3 of the EC Treaty does not include the specific term “offshore hydrocarbon activities,” it could be argued it falls within the scope of the broader term or sphere of “energy” referred to in Article 3(1)(u). As Article 3 does not give the EC a general legal basis for legislation in the field of energy,<sup>34</sup> the EC may be able to adopt enactments that rely on one or more of the other bases in Article 3 or pursue one or more of the objectives set out in Article 2 that in one way or another impact offshore hydrocarbon activities undertaken within the maritime zones of EU Member States or seaward thereof by EU Member States or their natural or legal persons. Environmental protection would be an example. It is clear that, at the most, competence would be shared and not exclusive.

### 3. Canada and the Law of the Sea in the Arctic

Canada might be described as a pioneer in developing state

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*Ratification of the Fish Stocks Agreement* (Dec. 19, 2003), available at [http://www.un.org/Depts/los/convention\\_agreements/fish\\_stocks\\_agreement\\_declarations.htm#EC](http://www.un.org/Depts/los/convention_agreements/fish_stocks_agreement_declarations.htm#EC)

32. Int'l Mar. Org. [IMO], *Mitropoulos and EC Commissioner Barrot in Agreement Across Wide-Ranging Agenda*, Feb. 11, 2005, available at [http://www.imo.org/about/mainframe.asp?topic\\_id=1018&doc\\_id=4701](http://www.imo.org/about/mainframe.asp?topic_id=1018&doc_id=4701).

33. It is also possible that the agreement is signed only by the EC or only by the EU Member States.

34. EC measures and legislation have mostly been based on the common market.

practice and law of the sea in relation to Arctic marine shipping. Following the 1969 trial transit of the ice-adapted oil tanker, the *S.S. Manhattan*, through the Northwest Passage,<sup>35</sup> Canada unilaterally responded to the threat of possible future foreign tanker transits by enacting the *Arctic Waters Pollution Prevention Act*.<sup>36</sup> The Act, which is still in force today, established a 100 nautical mile pollution prevention zone in Arctic waters and prohibited all deposits of waste by any person or ship except as provided in regulations.<sup>37</sup> The Act also authorized the Governor in Council (federal cabinet) to subdivide Arctic waters into shipping safety control zones and to pass regulations for the control of shipping within the zones, including construction, equipment, and crewing standards.<sup>38</sup>

Subsequent legal measures followed. Through a *Shipping Safety Control Zones Order*,<sup>39</sup> Canada divided its Arctic waters into sixteen shipping safety control zones. Through *Arctic Shipping Pollution Prevention Regulations*,<sup>40</sup> Canada established a complex array of shipping control measures including a prohibition on the discharge of oil or oily mixtures, with narrow exceptions such as engine exhaust and for the purpose of saving the loss of a ship.<sup>41</sup>

To help the codification of the law of the sea “catch up” with the need to protect vulnerable Arctic waters from shipping pollution, Canada also worked multilaterally within the negotiations for the LOS Convention. Working together with the Soviet Union and the United States, Canada was successful in obtaining the insertion of Article 234 into the Convention, which recognizes the special legislative and enforcement powers of coastal states to control marine pollution from vessels in ice-covered waters within the limits of the EEZ.<sup>42</sup>

The transit of the United States Coast Guard vessel, *Polar Sea*, through the Northwest Passage in August 1985, without officially seeking permission from Canada, raised further law of the sea tensions, to which Canada responded.<sup>43</sup> On September 10, 1985, Ex-

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35. For a detailed discussion, see John Kirton & Don Munton, *The Manhattan Voyages and Their Aftermath*, in *POLITICS OF THE NORTHWEST PASSAGE* 67-97 (F. Griffiths ed., 1987).

36. Arctic Waters Pollution Prevention Act, R.S.C. 1985, c. A-12 (1970) (Can.).

37. *Id.* § 4(1).

38. *Id.* §§ 11(1), 12.

39. Shipping Safety Control Zones Order, C.R.C. c. 356 (Can.).

40. Arctic Shipping Pollution Prevention Regulations, C.R.C. c. 353 (Can.).

41. *Id.* § 29(c).

42. 4 UNITED NATIONS CONVENTION ON THE LAW OF THE SEA 1982: A COMMENTARY 392-98 (Myron H. Nordquist et al. eds., 1991).

43. For a further review of the incident and Canadian responses, see Suzanne Lalonde, *Increased Traffic through Canadian Arctic Waters: Canada's State of Readiness* 38 *REVUE JURIDIQUE THEMIS* 49, 65-69 (2004).

ternal Affairs Minister, Joe Clark, formalized Canada's sovereignty claim over Arctic waters by announcing the drawing of straight baselines (effective January 1, 1986) around the Canadian Arctic Archipelago.<sup>44</sup> He also declared a governmental intention to construct a Polar Class 8 icebreaker to ensure a greater Canadian presence in the North,<sup>45</sup> but that icebreaker was never built.

The international legal validity of enclosing the Canadian Arctic Archipelago with straight baselines remains contentious. The United States, the EC, and other countries lodged formal protests against Canada's action.<sup>46</sup> Whether Canada can justify its claim of internal waters status for the enclosed waters based upon their being historic waters is in doubt.<sup>47</sup> Whether Canada's straight baseline system meets law of the sea customary or convention requirements has been subject to debate.<sup>48</sup>

A further law of the sea issue hovering over Canada's Arctic waters is whether the Northwest Passage is a strait used for international navigation. The United States and Canada have a long-standing dispute on that front, with the United States considering the Northwest Passage a strait subject to the LOS Convention's transit passage regime,<sup>49</sup> where coastal state controls would be very limited.<sup>50</sup> Since the LOS Convention does not define what is meant by "used for international navigation," there is room for argument. Various factors might be used to determine the level of required use, including, among others, the number of ships transiting the strait, the shipping tonnage, and the number of flag states involved.<sup>51</sup> Whether actual or potential use is necessary for a strait to qualify as "used for international navigation" may be a further point of contention.<sup>52</sup>

In 1988, Canada and the United States reached a "stalemate"

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44. Right Honourable Joe Clark, Can. Sec'y of State for External Affairs, Statement in the House of Commons on Canadian Sovereignty, 85/49 (Sept. 10, 1985).

45. *Id.*

46. See ERIK FRANCKX, MARITIME CLAIMS IN THE ARCTIC: CANADIAN AND RUSSIAN PERSPECTIVES 133 (1993).

47. See DONAT PHARAND, CANADA'S ARCTIC WATERS IN INTERNATIONAL LAW 121-25 (1988).

48. See *id.* at 131-84; FRANCKX, *supra* note 46, at 104-07.

49. BUREAU OF OCEANS & INT'L ENVTL. & SCIENTIFIC AFFAIRS, LIMITS IN THE SEAS: UNITED STATES RESPONSES TO EXCESSIVE NATIONAL MARITIME CLAIMS 73 (1992).

50. Pursuant to Article 42 of the LOS Convention, States bordering straits may only adopt marine safety and pollution laws giving effect to international regulations, and pursuant to Article 41, bordering States may designate sea lanes and traffic separation schemes where necessary to promote the safe passage of ships, but only after seeking and receiving IMO approval.

51. See Donat Pharand, *The Arctic Waters and the Northwest Passage: A Final Revisit*, 38 OCEAN DEV. & INT'L L. 3, 34-35 (2007).

52. *Id.* at 35-36.

agreement on Arctic cooperation.<sup>53</sup> They agreed to set aside their jurisdictional dispute over the legal status of the Northwest Passage. The United States agreed that its icebreakers would be subject to Canadian consent for transits within waters claimed by Canada to be internal. The countries also agreed to share research information regarding the marine environment gained through icebreaker navigation.

Many questions still surround Article 234 of the LOS Convention. What is the precise meaning of waters covered by ice for most of the year? What is the significance of giving special coastal state powers only in the EEZ? Some writers have suggested the EEZ limitation implies that coastal states are granted no greater powers over foreign ships than in the territorial sea,<sup>54</sup> while another interpretation supports a bestowing of much broader powers, including the right to unilaterally adopt special design, construction, crewing, and equipment requirements.<sup>55</sup> Such interpretive questions may also relate to straits used for international navigation since Article 233 of the Convention, which seeks to safeguard the legal regime of straits, does not exempt straits from the application of Article 234.<sup>56</sup>

Canada has two ocean boundary disputes in the Arctic in addition to a disagreement with Denmark/Greenland over the ownership of Hans Island. Canada and the United States continue to dispute the location of the ocean boundary in the Beaufort Sea, with some 6250 square nautical miles of area having good potential for hydrocarbon deposits at stake.<sup>57</sup> Canada maintains that the 141st west meridian should be the boundary line, in light of 1825 and 1867 treaties, while the United States has argued for a strict equidistance line.<sup>58</sup> Canada and Denmark/Greenland, while delimitating most of the continental shelf through a 1973 agreement, have yet to complete the northern portion of the boundary in the Lincoln Sea.<sup>59</sup> Canada and Denmark/Greenland also dispute own-

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53. Agreement Between the Government of the United States of America and the Government of Canada on Arctic Cooperation and Accompanying Notes, 28 I.L.M. 141 (1989) [hereinafter Agreement on Arctic Cooperation].

54. See D.M. McRae & D.J. Goundrey, *Environmental Jurisdiction in Arctic Waters: The Extent of Article 234*, 16 U. BRIT. COLUM. L. REV. 197, 221 (1982).

55. Pharand, *supra* note 51, at 47-48.

56. See Cynthia Lamson & David VanderZwaag, *Arctic Waters: Needs and Options for Canadian-American Cooperation*, 18 OCEAN DEV. & INT'L L. 49, 81 (1987).

57. DAVID VANDERZWAAG ET AL., GOVERNANCE OF ARCTIC MARINE SHIPPING at App. C (2008).

58. Karen L. Lawson, *Delimiting Continental Shelf Boundaries in the Arctic: The United States-Canada Beaufort Sea Boundary*, 22 VA. J. INT'L L. 221, 241-43 (1982).

59. Dawn Russell, *International Ocean Boundary Issues and Management Arrangements*, in CANADIAN OCEAN LAW AND POLICY 490 (David VanderZwaag ed., 1992).

ership of the uninhabited Hans Island, located in Nares Strait.<sup>60</sup> The island represents a tiny “gap” in the continental shelf delimitation agreed to in 1973.<sup>61</sup>

Through the *Oceans Act*, Canada has brought its offshore jurisdictional zones into line with the LOS Convention. Canada has formally established a twelve nautical mile territorial sea,<sup>62</sup> a twenty-four nautical mile contiguous zone,<sup>63</sup> a 200 nautical mile EEZ<sup>64</sup> and a continental shelf of at least 200 nautical miles measured from the territorial sea baselines or to the outer edge of the continental margin.<sup>65</sup> For Arctic waters, of course, those maritime zones extend outward from the straight baseline system established in 1986 around the Arctic islands.

### B. *The Arctic Council and the Marine Environment*

#### 1. Introduction

During the Cold War, Arctic-wide cooperation was not possible, except in very limited policy areas, such as the conclusion of the 1973 Polar Bear Treaty<sup>66</sup> between the five Arctic range states. This was due to the fact that the two superpowers and their allies confronted each other in the Arctic, which was estimated by many as one of the major military strategic hot spots during the Cold War. After all, NATO was a neighbor to the Soviet Union via Norway, and the United States and the Soviet Union shared a border in the Bering and Chukchi Seas. It was the *perestroika* and *glasnost* that opened up opportunities for pan-Arctic cooperation. Secretary-General Gorbachev’s speech in Murmansk in 1987 proposed pan-Arctic cooperation in a number of fields, one of these being the protection of the Arctic environment. Inspired by Gorbachev’s speech outlining various areas for Arctic cooperation, Finland took the initiative in 1989 for pan-Arctic co-operation in one of these policy areas, that of environmental protection; in 1991 the Arctic Environmental Protection Strategy (AEPS) was adopted by the eight Arctic states by means of a declaration.<sup>67</sup>

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60. *Id.*

61. *Oceans Act*, S.C., 1996, c. 31 (Can.).

62. *Id.* § 4.

63. *Id.* § 10.

64. *Id.* § 13.

65. *Id.* § 17.

66. Agreement on the Conservation of Polar Bears, U.S.-Can.-Den.-Nor.-Russ., Nov. 15, 1973, 13 I.L.M. 13 (1973), available at <http://pbsg.npolar.no>.

67. Arctic Environmental Protection Strategy § 2.1(v), U.S.-Can.-Den.-Fin.-Ice.-Nor.-Russ.-Swed., June 14, 1991, 30 I.L.M. 1624 (1991).

The AEPS achieved one important thing. Even though the cooperation itself was a fairly low-committal exercise with weak institutional structure, it enabled us to start thinking of societal and environmental problems for the first time from the Arctic perspective (rather than from the perspective of individual country's northern or Arctic region) and tackle them with policy measures.

The AEPS is also vastly important for understanding the current functioning of the Arctic Council,<sup>68</sup> and the proposals to renew it, since, even though the Arctic cooperation ostensibly was transformed from the AEPS to the Arctic Council during the transitional period of 1996-1998, the basic elements of the cooperation have been in place from 1991, with only slight changes taking place.

Even though there is a new mandate on sustainable development in the Council, the AEPS had a task force on sustainable development and utilization in the Arctic, which had more ambitious goals than the present Sustainable Development Working Group (SDWG).<sup>69</sup> There are still the same participants in the cooperation, although the Declaration establishing the Council strengthened the status of Arctic indigenous peoples' organizations as permanent participants with power to influence decision-making (they were observers in the AEPS). The same institutional structure has been retained, ministerial meetings convened every two years and senior arctic officials (SAOs) managing the day-to-day activities of the Council. The four environmental protection working groups of the AEPS, namely Conservation of Arctic Flora and Fauna (CAFF), Protection of the Arctic Marine Environment (PAME), Emergency Prevention, Preparedness and Response (EPPR), and the Arctic Monitoring and Assessment Programme (AMAP), were integrated into the structure of the Council. In addition, two new working groups were established, the SDWG and the Arctic Contaminants Action Program (ACAP).

To date, there is no permanent secretariat in the Council, as was the case in the AEPS, although the three Scandinavian states have agreed to maintain the secretariat in Tromsø till 2012.<sup>70</sup> As

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68. See Joint Communiqué and Declaration on the Establishment of the Arctic Council, U.S.-Can.-Den.-Fin.-Ice.-Nor.-Russ.-Swed., Sept. 19, 1996, 35 I.L.M. 1382 (1996) [hereinafter Joint Communiqué].

69. Task Force on Sustainable Development and Utilization (TFSDU) identified five major areas for consideration: first, trade policies, opportunities, and barriers (focusing on the harvesting of marine mammals and fur bearing animals); second, case studies of sustainable renewable resource use; third, an environmental impact assessment; fourth, a communication and education strategy; and fifth, regional applications of Agenda 21. See Evelyn M. Hurwich, *Arctic*, 6 Y.B. OF INT'L ENVTL. L. 298, 302 (1996). Compare this to the present work of the SDWG, <http://portal.sdwg.org/> (last visited Dec. 17, 2009).

70. "A joint secretariat, led by the Chair of Senior Arctic Officials (SAO), will be established in Tromsø for the period 2006-2012," Arctic Council, Norwegian, Danish,

was the case in the AEPS, there is no permanent, mandatory funding mechanism in the Council, although a project support instrument has been created to pool resources for funding of individual projects.<sup>71</sup> Finally, and importantly, both the AEPS and the Arctic Council were established via a declaration as soft-law organizations, not inter-governmental organizations having binding decision-making power.

Hence, even though many have cherished the argument that the Council can be formalized into an inter-governmental organization, given that Arctic cooperation has already once been revised in its short life-cycle, it is important to keep in mind that the foundation of the cooperation has remained much the same, allowing us to conclude that the Arctic Council is fairly resistant to change.

But even though the structure has remained much the same, the Arctic Council has become a stronger forum for cooperation over the years of its existence. In addition to the changes identified above, the working groups have become stronger in status and in terms of their deliverables. This is due to the fact that it was bound to take a few years before these working groups could start functioning effectively. Increasingly, their strategies and deliverables have become more ambitious. The Council ministers have also adopted important, albeit not very strong, policy recommendations connected with major scientific assessments, such as the ACIA. After the release of the ACIA, climate change considerations have become a cross-cutting issue in the Council, placing pressure on the working groups to adjust their work to future challenges. There is also more interest in the work of the Council; major states (like China) are interested in becoming observers.

## 2. The Role of the EU

The EU plays an important role in the Council even though it participates only as an ad hoc observer. Three of the eight Arctic Council members are Member States of the Union; namely Finland, Sweden and Denmark. Moreover, seven out of the eight non-Arctic states observers to the Council are Member States of the Union: Italy (ad hoc status), Spain, France, the Netherlands, Poland, Germany, and the United Kingdom, who are increasingly de-

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Swedish common objectives for their Arctic Council chairmanships 2006-2012, [http://arctic-council.org/article/2007/11/common\\_priorities](http://arctic-council.org/article/2007/11/common_priorities) (last visited Dec. 17, 2009). Individual working groups have had their secretariats from the beginning of the AEPS.

71. See Nordic Env't Fin. Corp., Arctic Council Project Support Instrument, [http://www.nefco.org/financing/arctic\\_council\\_project\\_support](http://www.nefco.org/financing/arctic_council_project_support) (last visited July 25, 2009).

manding a better position in the Council.<sup>72</sup> The current Arctic Council chair, Norway, is trying to meet these expectations in its chair-period by enhancing their participation in the work of the Council.<sup>73</sup> As studied below, the Commission is currently planning its future Arctic policy, which may lead to the EU demanding a better position in the Arctic Council.

### 3. The Role of Canada

Canada played a leadership role in creating the Arctic Council. Canadian Prime Minister Brian Mulroney proposed the idea of the Council during a visit to Leningrad in November 1989.<sup>74</sup> In November 1990, the Canadian Secretary of State for External Affairs, Joe Clark, declared that he would bring the issue of the Arctic Council to the attention of the other States.<sup>75</sup> On September 19, 1996, Canada hosted a meeting in Ottawa where representatives from the eight Arctic states signed the Declaration on the Establishment of the Arctic Council.<sup>76</sup>

Canada continues to play an active role in Arctic Council administration and project activities. Canada recently vice-chaired the PAME Working Group.<sup>77</sup> Canada, along with the United States and Finland, is leading the Arctic Marine Shipping Assessment (AMSA).<sup>78</sup> Canada, together with Iceland, took a lead role in updating and revising the Arctic Regional Programme of Action for the Protection of the Marine Environment from Land-based Activities.<sup>79</sup>

While Norway, as part of its chairmanship, has committed to reviewing the effectiveness and efficiency of the Arctic Council,<sup>80</sup>

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72. See *Non-Arctic Countries Want Membership in Arctic Council*, BARENTSOBSERVER.COM, Oct. 10, 2003, <http://www.barentsobserver.com/non-arctic-countries-want-membership-in-arctic-council.4516094-16174.html>.

73. See *id.*

74. David VanderZwaag et al., *The Arctic Environmental Protection Strategy, Arctic Council and Multilateral Environmental Initiatives: Tinkering While the Arctic Marine Environment Totters*, 30 DENV. J. INT'L L. & POL'Y 131, 154 (2002).

75. *Id.*

76. Joint Communiqué, *supra* note 68.

77. That vice-chair was Chris Cuddy, Indian and Northern Affairs Canada. For more information on PAME, see Arctic Council, Prot. of the Marine Env't Working Group, Chairmanship 2006-2008, [http://arctic-council.org/working\\_group/pame](http://arctic-council.org/working_group/pame) (last visited Dec. 17, 2009).

78. See Arctic Council, PROT. OF MARINE ENV'T, ARCTIC MARINE SHIPPING ASSESSMENT 2009 REPORT (2009) 10, available at [http://pame.is/images/stories/PDF\\_Files/AMSA\\_2009\\_report\\_2nd\\_print.pdf](http://pame.is/images/stories/PDF_Files/AMSA_2009_report_2nd_print.pdf)

79. PROT. OF MARINE ENV'T WORKING GROUP, DRAFT WORKING GROUP MEETING REPORT NO. I-2008 12 (2008).

80. Senior Arctic Officials have in fact placed the topic "Effectiveness and Efficiency" as a standing item on the SAO agenda. See ARCTIC COUNCIL, MEETING OF SENIOR ARCTIC

Canada has not taken an active role in trying to envision the future of the Council. Academic commentary in Canada has been critical of the Canadian Government's disproportionate emphasis on national defense and security, the marginalization of circumpolar diplomacy, and the lack of a leadership role in promoting regional cooperation.<sup>81</sup> One Canadian author has urged development of a national Arctic strategy that, among other things, should address ways to bring the Arctic Council into the twenty-first century.<sup>82</sup>

### III. SHIFTING SEASCAPE

#### A. Introduction

As discussed above, the Arctic Council is the predominant inter-governmental forum dealing with the Arctic in general, including also Arctic marine issues. The Council has done important assessment work (sometimes with policy recommendations) relating to the Arctic Ocean and produced non-legally binding guidelines and manuals of good practice. These have often been influential in many international environmental protection processes. Of the Arctic Council Working Groups, the most important marine policy work is done by PAME.

PAME's agenda has become increasingly ambitious with the adoption of its 2004 Arctic Marine Strategic Plan (AMSP), which encourages actions on many fronts.<sup>83</sup> PAME developed the AMSP through the various Arctic Council working groups and mechanisms, as well as via regional and global bodies.<sup>84</sup> The AMSP identi-

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OFFICIALS: FINAL REPORT (2008), available at <http://arctic-council.org/filearchive/Sao%20Svolvaer%20Final%20Report.pdf> [hereinafter 2008 ARCTIC COUNCIL SENIOR REPORT].

81. See P. Whitney Lackenbauer, Can. Int'l Council Junior Fellow, *Arctic Front, Arctic Homeland: Re-Evaluating Canada's Past Record and Future Prospects in the Circumpolar North* (Can. Int'l Council, Preliminary Paper, July 2008), available at [http://www.canadianinternationalcouncil.org/download/resourcece/archives/foreignpol/cic\\_laeken](http://www.canadianinternationalcouncil.org/download/resourcece/archives/foreignpol/cic_laeken); P. Whitney Lackenbauer, Can. Intl. Council Junior Fellow, *From Polar Race to Polar Saga: An Integrated Strategy for Canada and the Circumpolar World* (Foreign Policy for Canada's Tomorrow No. 3, July 2009), available at <http://www.canadianinternationalcouncil.org/download/resourcece/archives/foreignpol/cicfpctno3>.

82. Franklyn Griffiths, Can. Int'l Council Senior Fellow, *Towards a Canadian Arctic Strategy* (Can. Int'l Council, Preliminary Paper, July 2008), available at <http://www.canadianinternationalcouncil.org/download/research/foreignpol/towardsaca~2/cicfpctno1>; Franklyn Griffiths, Can. Int'l Council Senior Fellow, *Towards a Canadian Arctic Strategy* (Foreign Policy for Canada's Tomorrow No. 1, July 2009), available at <http://www.canadianinternationalcouncil.org/download/research/foreignpol/towardsaca~2/cicfpctno1>.

83. ARCTIC COUNCIL, ARCTIC MARINE STRATEGIC PLAN (2004), available at [http://www.pame.is/images/stories/AMSP\\_files/AMSP-Nov-2004.pdf](http://www.pame.is/images/stories/AMSP_files/AMSP-Nov-2004.pdf)

84. *Id.* at 1.

fies the largest drivers of change in the Arctic to be climate change and increasing economic activity and suggests actions in many areas, for instance: conducting a comprehensive assessment of Arctic marine shipping, which led to the AMSA being finalized in 2009; developing guidelines and procedures for port reception facilities for ship-generated wastes and residues; examining the adequacy of Arctic Council's Arctic Offshore Oil and Gas Guidelines, with revision, in 2009; identifying potential areas where new guidelines and codes of practice for the marine environment are needed; promoting application of the ecosystem approach; promoting the establishment of marine protected areas, including a representative network; calling for periodic reviews of both international and regional agreements and standards; and promoting implementation of contaminant-related conventions or programs and possible additional global and regional actions.

Overall, the Council has clear strengths. It now serves as a high-level platform for all the Arctic, internationally oriented, actors (not those who actually govern the Arctic, such as the Arctic sub-units of federal states and other administrative units).<sup>85</sup> It has also produced scientific assessments, mainly via its strongest working group, AMAP, which has made a significant difference to regional and even global environmental negotiation processes.<sup>86</sup> The Council is also the only inter-governmental forum that accords indigenous peoples a very strong status as permanent participants (not NGOs as they are usually deemed).<sup>87</sup>

Yet, it must be acknowledged that with the present weak institutional structure, lack of any permanent funding mechanism, lack of legal status, etc., the Council cannot reasonably be expected to continue to be more than a platform for discussions on Arctic issues and a producer of scientific assessments and non-legally binding guidelines, rather than a governing body. Hence, from the viewpoint of governing the Arctic Ocean (or Arctic marine areas in general) and the coming climate change challenges, it is fairly

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85. Even the Northern Forum, an observer to the Council, which ostensibly represents many counties in the north, does not really represent the interests of the counties but serves more as a low-key forum for their mutual cooperation. Contrast this to the draft Arctic Region Council proposal circulated by Canada in AEPS negotiations, which would have directly included those administrative units in its institutional structure.

86. See, e.g., Lars-Otto Reiersen et al., *Circumpolar Perspectives on Persistent Organic Pollutants: the Arctic Monitoring and Assessment Programme*, in *NORTHERN LIGHTS AGAINST POPS: COMBATING TOXIC THREATS IN THE ARCTIC* 60 (David Leonard Downie & Terry Fenge eds., 2003).

87. It is good to remember that these organizations do not directly represent the Arctic governance bodies that represent indigenous peoples, but are their international organizations (and need to represent either many indigenous peoples in one Arctic country or one indigenous people in many Arctic countries).

clear that the Arctic Council is limited with its present structure and mandate.

*B. Challenges to the Present Regime from the Part of Observers to the Arctic Council*

Increasingly, scholars, as well as international and non-governmental organizations that are observers to the Council, have started to criticize the way it conducts its work in general and its environmental protection mandate, in particular. The various processes by IUCN, WWF Arctic, UNEP Grid-Arendal and Arctic parliamentarians that have studied the possibility of an Arctic treaty have ended up with recommendations containing two features: an audit to assess the effectiveness and relevance of existing regimes as a basis for the second step and a discussion concerning the possibility of developing an Arctic treaty.<sup>88</sup> In their August 2006 meeting in Kiruna, the Conference of Arctic Parliamentarians asked that their governments and the institutions of the European Union, “[i]n light of the impact of climate change, and the increasing economic and human activity, initiate, as a matter of urgency, an audit of existing legal regimes that impact the Arctic and to continue the discussion about strengthening or adding to them where necessary.”<sup>89</sup>

In a seminar co-hosted by UNEP, Grid-Arendal, and the Standing Committee of the Arctic Parliamentarians on Multilateral Agreements and Their Relevance to the Arctic, in September 2006, the participants agreed on one overall recommendation:

The participants of the Arendal Seminar recommend that UNEP, the Arctic Parliamentarians, the Arctic Council, the Nordic Council of Ministers, and Contracting Parties, governing bodies and secretariats to the MEAs [multilateral environmental agreements] support and cooperate on an audit to assess the effectiveness and relevance of MEAs in the Arctic and to examine the need and options for improving the existing regime as well as the need and options for devel-

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88. The only exception is the Nordic Council, which went further and adopted the following recommendation: “[t]he Nordic Council recommends to the Nordic Council of Ministers . . . that efforts be made, in co-operation with the Arctic Council, to establish an Arctic treaty.” Nordic Council, Committee Proposal on Jurisprudential Research in the Marine Areas in the North and an Arctic Treaty 3 (Apr. 26, 2006) (on file with author) (emphasis in original).

89. MARTIN PALM, THE SEVENTH CONFERENCE OF THE PARLIAMENTARIANS OF THE ARCTIC REGION 23 (2007).

oping an Arctic Treaty or Arctic Framework Convention. The audit should take into account recommendations from the Kiruna Conference of the Parliamentarians of the Arctic Region and the Arendal Seminar.<sup>90</sup>

A similar conclusion was reached by the IUCN, which convened an expert meeting in Ottawa on March 24-25, 2004 to discuss whether the Antarctic Treaty System (ATS) could provide the needed input for the development of environmental protection in the Arctic. The expert meeting was divided over the way in which environmental protection could and should be developed in the Arctic and whether a treaty approach was needed. The main approach to Arctic governance advanced at the meeting was not to borrow from the Antarctic experience but to first study which environmental threats to the Arctic should be addressed at which level: *i.e.*, universal (global treaties and processes), regional (the Arctic Council), bilateral, national and sub-national.<sup>91</sup>

Hence, there clearly seems to be pressure from the abovementioned commentators of the Arctic Council to at least examine the applicable treaties carefully, studying in particular how these treaties are implemented in the region and whether, on the basis of that analysis, a comprehensive/framework instrument for the Arctic is called for. What these actions by observers of the Arctic Council serve to demonstrate is that pressures are building to adopt a treaty approach. Yet, the ultimate problem for those who push for an Arctic treaty is that, at least at present, there are no real signs from the Council and its member states that they would be ready to support the treaty approach, at least in the immediate future.

### *C. Recent Initiatives from the United States and the Arctic Ocean Coastal States*

There are interesting recent developments, some of which can be seen even as challenging the Arctic Council as the main inter-governmental platform for governing the Arctic Ocean.

For many parts of the Arctic Ocean, the presence of ice for most of the year has, so far, rendered national fisheries regulation for those areas unnecessary. But, as diminishing ice-coverage may at-

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90. NORDIC COUNCIL OF MINISTERS, THE ARENDAL SEMINAR ON MULTILATERAL ENVIRONMENTAL AGREEMENTS AND THEIR RELEVANCE TO THE ARCTIC 2 (2006).

91. See Wolfgang E. Burhenne, *The Arctic: Towards a New Environmental Regime?*, 37 ENVTL. POL'Y & L. 249, 255 (2007).

tract fishing vessels looking for possible new fishing opportunities, Arctic states may be required to develop national regulations in order to discharge their obligations under international law, including those under the LOS Convention and the Fish Stocks Agreement. The United States is currently engaged in this process with regard to fishing in the maritime zones off Alaska north of the Bering Strait. In the United States, competence over fisheries is shared by the individual states (in this case Alaska) within three nautical miles from shore, and the federal government in the remainder of the United States maritime zones. The North Pacific Fishery Management Council (NPFMC) plays a key role in federal regulation with regard to the maritime zones of the United States in the North Pacific. The NPFMC has adopted various fishery management plans (FMPs) that apply as far north as the Bering Strait, and its King and Tanner Crab and Scallop FMPs also apply to that part of the Chukchi Sea that lies between the Bering Strait and Point Hope. In June 2007, the NPFMC closed the Northern Bering Sea to bottom trawling and directed a research plan to be developed for that area.<sup>92</sup>

Since October 2006, the NPFMC has also specifically focused its attention on Arctic fishery management. This has led to the development of an Arctic FMP which is likely to be adopted at the February 2009 meeting of the Council. The Draft Arctic FMP proposes, *inter alia*, to “close the Arctic to commercial fishing until information improves so that fishing can be conducted sustainably and with due concern to other ecosystem components.”<sup>93</sup>

As some of the fish stocks in the EEZ off Alaska are likely to be transboundary, reference should be made to United States Senate joint resolution (S.J. Res.) No. 17 of 2008, directing the United States to “. . . initiate international discussions and take necessary steps with other Arctic nations to negotiate an agreement or agreements for managing migratory, transboundary, and straddling fish stocks in the Arctic Ocean. . . .”<sup>94</sup> The House of Repre-

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92. NEWS & NOTES (N. Pacific Fishery Mgmt. Council), June 2007, at 2, *available at* <http://www.fakr.noaa.gov/npfmc/newsletters/news606.pdf>.

93. N. PACIFIC FISHERY MGMT. COUNCIL, PRELIMINARY PUBLIC REVIEW DRAFT ENVIRONMENTAL ASSESSMENT / REGULATORY IMPACT REVIEW / INITIAL REGULATORY FLEXIBILITY ANALYSIS FOR THE ARCTIC FISHERY MANAGEMENT PLAN AND AMENDMENT 29 TO THE FISHERY MANAGEMENT PLAN FOR BERING SEA/ALEUTIAN ISLANDS KING AND TANNER CRABS at iii (2008), *available at* [http://www.fakr.noaa.gov/analyses/arctic/ArcticFMP\\_EA1108.pdf](http://www.fakr.noaa.gov/analyses/arctic/ArcticFMP_EA1108.pdf). At its February 2009 meeting, the Council still needs to decide on different “alternatives” and “options” linked to them. *See* NEWS & NOTES (N. Pacific Fishery Mgmt. Council), Dec. 2008, at 2, *available at* <http://www.fakr.noaa.gov/npfmc/newsletters/news1208.pdf>.

94. S.J. Res. 17-2, 110th Cong. (2007) (enacted) (passed by the House of Representatives on May 21, 2008, and signed by President George W. Bush on June 3, 2008, thereafter Pub. L. No. 110-243, 122 Stat. 1569).

sentatives voted in favor of S.J. Res. No. 17 in May 2007, and the President signed it on June 4, 2008. The current United States Administration has so far informed Canada and the Russian Federation of S.J. Res. No. 17 of 2008, and has expressed its willingness to engage in exploratory talks on the issue. The United States also brought S.J. Res. No. 17 of 2008 to the attention of SAOs during their meeting in November 2007. During the discussion that followed “[t]here was strong support for building on and considering this issue within the context of existing mechanisms.”<sup>95</sup> This would seem to indicate that a considerable majority of the Arctic states does not want the Arctic Council to become directly involved in fishery management and conservation.

Pursuant to S.J. Res. No. 17 of 2008, the United States has also approached a number of relevant players, including the other Arctic Ocean coastal states, on their willingness to support a process which would culminate in a general statement or declaration on present and future Arctic fisheries. At the Session of the Committee on Fisheries (COFI) of the United Nations Food and Agriculture Organization (FAO) in March 2009, the United States plans to convene a side event to discuss this process. The United States may approach another Arctic Ocean coastal state, for instance Norway, to co-sponsor this initiative. At this side event, the United States may offer to host a high-level conference on Arctic fisheries in 2010, during which such a general statement or declaration could be adopted.<sup>96</sup> The European Commission’s Arctic Communication<sup>97</sup> would seem to be supportive of such an initiative.<sup>98</sup> Finally, it should be mentioned that on January 9, 2009, President Bush approved the long-awaited Arctic Region Policy<sup>99</sup> of the United States.

Perhaps the most significant development in regard to managing the Arctic Ocean comes from the part of the five Arctic Ocean coastal states. They started their cooperation with the meeting between senior officials in October 2007 in Norway. This was followed by the May 2008 meeting in Greenland, where the political

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95. ARCTIC COUNCIL, MEETING OF SENIOR ARCTIC OFFICIALS: FINAL REPORT 12 (2007), available at <http://arctic-council.org/filearchive/Narvik%20-FINAL%20Report-%2023Apr08.doc>.

96. Information based on conversations between Erik J. Molenaar and a governmental official of the United States in December 2008 and January 2009. Presidential Policy Directive, *supra* note 22, § III(H)(6), does not refer to the possibility of such a process in the relevant implementation section.

97. *Communication from the Commission to the European Parliament and the Council: The European Union and the Arctic Region*, COM (2008) 763 (Nov. 20, 2008) [hereinafter *Arctic Region Communication*].

98. It is observed “[u]ntil a conservation and management regime is in place for the areas not yet covered by such a regime, no new fisheries should commence.” *Id.* at 8.

99. See Presidential Policy Directive, *supra* note 22.

representatives of these countries outlined an agenda for action. In their conference declaration (Ilulissat Declaration) they note that they “. . . see no need to develop a new comprehensive international legal regime to govern the Arctic Ocean” but are willing to work within the framework of existing treaties and institutions, especially the law of the sea.<sup>100</sup> Yet, they did outline several areas for future cooperating including work through the IMO against ship-based pollution, strengthening their search and rescue capabilities, cooperation in sharing data on continental shelf, etc. Interestingly, they also affirmed their intent to continue in the Arctic Council, but also in other relevant forums, signaling that they indeed may pursue a new form of cooperation focusing on the Arctic Ocean.

This new incipient form of cooperation, if it really takes off, may over time challenge the Arctic Council, in that the other three members of the Council have not been invited to these two meetings. It may be that with the melting ice, the Arctic Ocean coastal state cooperation will grow stronger, given that there is a need to take stronger policy actions in higher stake policy areas (fisheries and shipping) than those that can be pursued in the Arctic Council with respect to the Arctic marine area, in particular the Arctic Ocean. This move by the five Arctic Ocean coastal states has already caused friction between them and the three Council members not invited to the Greenland meeting. In the Narvik SAO meeting, Iceland expressed concern over why the Arctic Council members were not invited.<sup>101</sup> On the other hand, just before the Greenland meeting, Denmark briefed the SAOs that the meeting would not compete with the Arctic Council.<sup>102</sup>

#### D. EU Arctic Policy Developments

In connection with its climate policy work, the EU also pro-

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100. *Ilulissat Declaration*, *supra* note 7, at 2.

101. See ARCTIC COUNCIL, *supra* note 90, at 20 (providing that Iceland “expressed concerns that separate meetings of the five Arctic states, Denmark, Norway, US, Russia and Canada, on Arctic issues without the participation of the members of the Arctic Council, Sweden, Finland and Iceland, could create a new process that competes with the objectives of the Arctic Council. If issues of broad concern to all of the Arctic Council Member States, including the effect of climate change, shipping in the Arctic, etc. are to be discussed, Iceland requested that Denmark invite the other Arctic Council states to participate in the ministerial meeting. Permanent participants also requested to participate in the meeting. Denmark responded that the capacity of the venue may be an issue.”).

102. In the Svolvaer SAO meeting (23-24.4.2008), it was provided that “Denmark updated on preparations for its meeting of the 5 Arctic coastal states. The meeting will focus on issues of concern for the 5 states and is intended to strengthen, and not compete with, other relevant fora. PPs inquired as to their role in the meeting and Denmark confirmed that the conference is intended for governments”. See 2008 ARCTIC COUNCIL SENIOR REPORT, *supra* note 80, at 15.

posed to revisit the governance framework applicable to the Arctic marine area.<sup>103</sup> The Climate Change and International Security paper identified one policy option to “[d]evelop an EU Arctic policy based on the evolving geo-strategy of the Arctic region, taking into account, [*inter alia*], access to resources and the opening of new trade routes.”<sup>104</sup> The EU is also developing its Arctic policy as part of its newly adopted integrated maritime policy wherein the Commission (DG Mare) promises to produce a report “on strategic issues relating to the Arctic Ocean” within the year 2008.<sup>105</sup>

Most recently, the Commission issued its Arctic Communication.<sup>106</sup> In the Introduction to the thirteen page document, the Commission sets out EU interests and proposes action for EU Member States and institutions around three main policy objectives:

- Protecting and preserving the Arctic in unison with its population
- Promoting sustainable use of resources
- Contributing to enhanced Arctic multilateral governance<sup>107</sup>

The Communication is structured along these three main policy objectives. One of the salient features within “[p]romoting sustainable use of resources” is the proposal to extend the spatial scope of the NEAFC Convention (see subsection IV.B.). As the section “[c]ontributing to enhanced Arctic multilateral governance” is of most interest for this paper, some more attention is devoted to it

103. HIGH REPRESENTATIVE & EUR. COMM’N TO EU. COUNCIL, CLIMATE CHANGE AND INTERNATIONAL SECURITY (2008), *available at* [http://www.consilium.europa.eu/ueDocs/cms\\_Data/docs/pressData/en/reports/99387.pdf](http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/reports/99387.pdf).

104. *Id.* at 11. See also *id.* at 8, which states, “[t]he Arctic: [t]he rapid melting of the polar ice caps, in particular, the Arctic, is opening up new waterways and international trade routes. In addition, the increased accessibility of the enormous hydrocarbon resources in the Arctic region is changing the geo-strategic dynamics of the region with potential consequences for international stability and European security interests. The resulting new strategic interests are illustrated by the recent planting of the Russian flag under the North Pole. There is an increasing need to address the growing debate over territorial claims and access to new trade routes by different countries which challenge Europe’s ability to effectively secure its trade and resource interests in the region and may put pressure on its relations with key partners.”

105. The adopted integrated maritime policy provides that, “[a]ttention will also be given to the geopolitical implications of climate change. In this context, the Commission will present in 2008 a report on strategic issues relating to the Arctic Ocean”. *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: An Integrated Maritime Policy for the European Union*, at §4.4, COM (2007) 574 final (Oct. 10, 2007), *available at* <http://eur-lex.europa.eu/LexUriServ/LexUrierv.do?uri=COM:2007:0575:FIN:EN:PDF> [hereinafter *Integrated Maritime Policy*].

106. See *Arctic Region Communication*, *supra* note 97.

107. *Id.* at 3.

here. As a general comment, it should be noted that the section contains quite a few sentences that would raise the eyebrows of international lawyers and would have benefited from more accurate drafting. The section contains the following policy objectives:

- The EU should work to uphold the further development of a cooperative Arctic governance system based on the UNCLOS which would ensure:
  - security and stability
  - strict environmental management, including respect of the precautionary principle
  - sustainable use of resources as well as open and equitable access
- The full implementation of already existing obligations, rather than proposing new legal instruments should be advocated. This however should not preclude work on further developing some of the frameworks, adapting them to new conditions or Arctic specificities.
- The EU should promote broad dialogue and negotiated solutions and not support arrangements which exclude any of the Arctic EU Member States or Arctic EEA EFTA countries.
- Arctic considerations should be integrated into wider EU policies and negotiations.<sup>108</sup>

Subsequently, a list of policy actions is offered. These include:

- Explore the possibility of establishing new, multi-sector frameworks for integrated ecosystem management. This could include the establishment of a network of marine protected areas, navigational measures and rules for ensuring the sustainable exploitation of minerals.
- Enhance input to the Arctic Council in accordance with the Community's role and potential. As a first step, the Commission will apply for permanent observer status in the Arctic Council.
- . . . .
- Explore all possibilities at international level to promote measures for protecting marine biodiversity in areas beyond national jurisdiction, including through the pursuit of an UNCLOS Implementing Agreement.

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108. *Id.* at 10.

- Work towards the successful conclusion of international negotiations on marine protected areas on the high seas.<sup>109</sup>

A few comments are offered here. First, the preference for implementation “rather than proposing new legal instruments” in the section on policy objectives does not seem to be very absolute in view of the support for the “possibility of establishing new, multi-sector frameworks for integrated ecosystem management.”<sup>110</sup> The words “based on UNCLOS”, in the section on policy objectives, nevertheless, indicate that the option of an Implementing Agreement under the LOS Convention is no longer being pursued. At the end of the discussion of this option, in subsection IV.E., some attention is also devoted to an earlier EU proposal for an Implementing Agreement under the LOS Convention. It is not altogether clear, however, why such an initiative with a global scope should be listed in this Arctic Communication. The same comment also applies to the last policy action that is quoted above. While the precise meaning and intention of this policy action is not clear,<sup>111</sup> it seems to relate to a process at the global level that is intended to have output that applies throughout the globe and not just the Arctic. Or does it imply that the high seas in the Arctic Ocean should be designated as a marine protected area?

The European Parliament and individual Member States have also pressed for stronger positions in their Arctic policy. The European Parliament, in its resolution of October 9, 2008 on Arctic governance:

Suggests that the 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 supplemented by the Madrid Protocol signed in 1991, but respecting the fundamental difference represented by the populated nature of the Arctic and the consequent rights and needs of the peoples and nations of the Arctic region; believes, however, that as a minimum starting-point such a treaty could at least cover the unpopulated and unclaimed area at the centre of the

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109. *Id.* at 11.

110. *Id.*

111. The sentences quoted in *infra* note 163 indicate that this policy action should have been merged with the policy action on the Implementation Agreement.

Arctic Ocean.<sup>112</sup>

Arguably, however, priority in reform lies with areas within national jurisdiction because the impacts of climate change and the ensuing human activities will occur there first. Limiting reform to areas beyond national jurisdiction would place coastal states in a more advantageous position, vis-à-vis other states, due to lower costs/higher profits or transboundary effects.

The individual EU Member States that have a status of observer to the Arctic Council, which form seven out of eight non-Arctic states observers to the Council, have also started to demand a better position in the Arctic Council, some even suggesting to apply for membership.<sup>113</sup>

It can be asked whether the Arctic Ocean coastal state cooperation can be seen as a threat from the perspective of the EU. The EU has participated in the ministers of the Council as an ad hoc observer, given that three of its member states (Finland, Sweden, and Denmark) are members of the Council. In addition, Iceland and Norway have to implement much of the EU regulation as parties to the EEA agreement. On the other hand, it is important to note that Greenland, Svalbard, and their adjacent maritime zones are not covered by the EU or the EEA Agreement, since Greenland chose to exit the then EEC in 1985, following a referendum, and Svalbard was excluded from the EEA agreement given that it is governed by the international 1920 Svalbard Treaty.<sup>114</sup> The EU, thus, does not have any Arctic coastline, but it does possess significant fisheries and shipping interests in the opening new sea area, now studied under its climate policy and integrated maritime policy. If the Arctic Ocean coastal state cooperation continues in real, and Greenland self-rule from Denmark is increasing by the day, some even predicting independence in a foreseeable future,<sup>115</sup> the

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112. EUR. PARL. DOC. P6\_TA-PROV(2008)0474 3 (2008).

113. It was reported in *Barents Observer*, e.g., that "Italian Foreign Minister Franco Frattini said his country wants to become member of the organisation because of 'the geopolitical and strategic importance of the Arctic region. . .'". *Non-arctic Countries Want Membership in Arctic Council*, BARENTSOBSERVER.COM, Oct. 3, 2008, available at <http://www.barentsobserver.com/non-arctic-countries-want-membership-in-arctic-council.4516094-16174.html> [hereinafter *Non-Arctic Countries*].

114. Treaty Concerning the Archipelago of Spitsbergen, Feb. 9, 1920, 2 L.N.T.S. 8. A special Protocol was adopted as part of the EEA Agreement to the effect that Norway may decide whether to apply the EEA Agreement to Svalbard or not (Protocol 40). Norway decided to exclude the Islands. See also GEIR ULFSTEIN, *THE SVALBARD TREATY: FROM TERRA NULLIUS TO NORWEGIAN SOVEREIGNTY* 299 (1995).

115. See ArcticPortal.org, *From Remote Island to Self-Government - Greenland's Journey Towards Independence*, <http://arcticportal.org/features/2009/from-remote-island-to-self-government-greenlands-journey-towards-independence> (recent news release on Arctic Council's website) (last visited Dec. 18, 2009).

EU will find itself excluded from this cooperation altogether. Hence, it is one possible trajectory that the EU will continue to push for other kinds of governance arrangements, where it can play a more influential role than in the Arctic Council or in the Arctic Ocean coastal state cooperation. This would seem to prompt the EU to push for a more comprehensive Arctic legal governance arrangement, at least from the longer term perspective.

### *E. The Role of Canada*

Canada has not been an advocate of formalizing regional cooperation among the Arctic Ocean coastal states, but instead has largely preferred bilateral cooperative arrangements.<sup>116</sup> In 1983, Canada forged a marine environmental cooperation agreement with Denmark,<sup>117</sup> which pledges the provision of information and consultation over proposed undertakings carrying a significant risk of transboundary pollution in the Nares Strait, Baffin Bay, and Davis Strait region. The agreement has also established joint marine contingency plans for pollution incidents from shipping or offshore hydrocarbon exploration/exploitation. In 1977, Canada agreed with the United States to establish a joint marine contingency plan for the Beaufort Sea and the plan has been periodically revised.<sup>118</sup> Canada and the Russian Federation have entered into various agreements relating to environmental and economic cooperation.<sup>119</sup>

In the wake of the Ilulissat Declaration, it seems likely that

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116. For a more detailed summary of Canada's cooperative arrangements relating to marine environmental protection and living marine resource management, see R. Siron, David L. VanderZwaag & H. Fast, *Ecosystem-based Ocean Management in the Canadian Arctic*, in BEST PRACTICES IN ECOSYSTEM-BASED OCEANS MANAGEMENT IN THE ARCTIC (Hakon Hoel ed., Norwegian Polar Inst., Report Series No. 129, Tromsø, Nor. 2009) (published under the auspices of the Arctic Council).

117. Agreement Between the Government of Canada and the Government of the Kingdom of Denmark for Cooperation Relating to the Marine Environment, Can.-Den., Aug. 26, 1983, 1983 Can. T.S. No. 19.

118. Exchange of Notes Between the Government of Canada and the Government of the United States of America Constituting an Agreement Concerning the Establishment of a Joint Marine Pollution Contingency Plan, July 28, 1977, 1977 Can. T.S. No. 25.

119. See Treaty on Concord and Cooperation between Canada and the Russian Federation, June 19, 1992, 1993 Can. T.S. No. 23; Canada-Russian Federation Agreement Concerning Environmental Cooperation, May 8, 1993, 1993 Can. T.S. No. 7; Agreement Between the Government of Canada and the Government of the Russian Federation on Cooperation in the Arctic and the North, June 19, 1992, 1992 Can. T.S. No. 18; Agreement Between the Government of Canada and the Government of the Russian Federation on Economic Cooperation, May 8, 1993, 1994 Can. T.S. No. 38; Memorandum of Understanding Between the Department of Indian Affairs and Northern Development (Canada) and the Ministry of Regional Development of the Russian Federation Concerning Cooperation on Aboriginal and Northern Development, Nov. 29, 2007, available at <http://www.ainiac.gc.ca/ap/pubs/mourus/mourus-eng.asp>.

Canada and the other four Arctic Ocean coastal states will, at least in the near term, avoid a comprehensive regional sea agreement<sup>120</sup> in favor of sectoral cooperative initiatives. For example, a regional agreement on search and rescue may become a priority in light of increased Arctic shipping.<sup>121</sup> Working through the IMO to better protect the Arctic marine environment from vessel-source pollution has already been occurring through the revision process<sup>122</sup> for the Guidelines for Ships Operating in Arctic Ice-covered Waters.<sup>123</sup> Further regional cooperation may follow in light of recommendations from the AMSA. Designating the Arctic Ocean, or parts thereof, as a special area, where stricter than normal pollution standards for oil, noxious liquid substances and garbage would apply, is a possible governance avenue.<sup>124</sup>

On the domestic front, Canada has substantially shifted, under the leadership of Prime Minister Stephen Harper, towards a sovereignty and security agenda for the Arctic. To defend Canadian sovereignty over the Arctic, the Government has committed to constructing up to eight Polar Class Arctic offshore patrol ships able to patrol the length of the Northwest Passage during the summer navigable season and its approaches year round.<sup>125</sup> Establishing a Canadian Forces Arctic Training Centre in Resolute Bay, Nunavut and constructing a docking and refueling facility in Nanisivik, Nunavut to serve as a staging area for naval vessels and Canadian Coast Guard vessels operating in the North are further commitments.<sup>126</sup> In the 2008 Budget, the Government pledged \$720 mil-

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120. For a recent call for such an agreement, see Louise Angélique de La Fayette, *Ocean Governance in the Arctic*, 23 INT'L J. MARINE & COASTAL L. 531 (2008).

121. *Ilulissat Declaration*, *supra* note 7 (highlighting the need to further strengthen search and rescue capabilities and capacity around the Arctic Ocean). Ministers at the Sixth Ministerial Meeting of the Arctic Council on April 29, 2009, through the Tromsø Declaration, approved the establishment of a task force to negotiate by the next Ministerial meeting in 2011 an international instrument on search and rescue in the Arctic.

122. A correspondence group under the coordination of Canada was established to revise the Guidelines and the Guidelines have been extended to cover Antarctic waters as well. IMO, Mar. Safety Comm., *Report of the Maritime Safety Committee on its Eighty-Sixth Session*, Annex 18, MSC 86/26/Add.2 (2009).

123. IMO Doc. MSC/Circ. 1056, MEPC/Circ. 399 (Dec. 23, 2002).

124. The technical report on Governance of Arctic Marine Shipping, prepared for AMSA, suggested as one option designating the Arctic Ocean beyond national jurisdiction, as a special area. VANDERZWAAG, *supra* note 57, at Finding 11. The AMSA Report subsequently recommended that Arctic states explore the need for special area designations through the IMO. ARCTIC COUNCIL, ARCTIC MARINE SHIPPING ASSESSMENT 2009 REPORT 7 (2009).

125. Press Release, Office of Can. Prime Minister, Prime Minister Stephen Harper Announces New Arctic Offshore Patrol Ships: Canada's New Government to Move Forward With Deep Water Port in Arctic (July 9, 2007), *available at* <http://pm.gc.ca/eng/media.asp?category=1&id=1742>.

126. Press Release, Office of Can. Prime Minister, Prime Minister Announces Expansion of Canadian Forces Facilities and Operations in the Arctic (Aug. 10, 2007),

lion CDN for the construction of a new Polar Class icebreaker.<sup>127</sup> In August 2008, the Prime Minister announced the Government's intention to extend the coverage of the *Arctic Waters Pollution Prevention Act* beyond the present 100 nautical miles to 200 nautical miles and to require mandatory reporting from all ships destined for Arctic waters within the same 200 nautical miles zone.<sup>128</sup>

Getting a firm grip on future directions for Canadian Arctic policy is not easy since the Government has largely favoured an incremental approach to policy formulation. In the October 2007 Throne Speech, Stephen Harper pledged to bring forward an integrated northern strategy having four pillars, namely, strengthening Canada's sovereignty, protecting the environment, promoting economic and social development, and improving and developing northern governance.<sup>129</sup> The speech also announced that Canada would build a world-class Arctic research station to serve the world in cutting edge issues, including environmental science and resource development.<sup>130</sup>

The location and parameters of the proposed Arctic research station remain uncertain. Indian and Northern Affairs Canada prepared a *Visioning Workshop Report* on proposed scientific priorities for the station.<sup>131</sup> The department then commissioned an international panel of experts to provide a critique of the document and further advise on future directions for Arctic research. In an October 2008 report, the panel suggested a change in terminology from "research station," implying "a physical structure—or cluster of structures" to a broader term, "Canadian Arctic Research Initiative."<sup>132</sup> The panel concluded that such an initiative "will likely require a two-hub model with a logistical hub in a central, accessible location as well as a scientific hub in an attractive and scientifically interesting area."<sup>133</sup> The need for a "transparent decision-

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available at <http://pm.gc.ca/eng/media.asp?category+1&id=1784>.

127. Press Release, Office of Can. Prime Minister, Northern Strategy – Backgrounder (Mar. 10, 2008), available at <http://pm.gc.ca/eng/media.asp?id=2016>.

128. Press Release, Office of Can. Prime Minister, PM Announces Government of Canada Will Extend Jurisdiction over Arctic Waters (Aug. 27 2008), available at <http://pm.gc.ca/eng/media.asp?category=1&id=2248>. An Act to amend the Arctic Waters Pollution Prevention Act, 2009 S.C., ch. 11 (Can.), receiving Royal Assent on 11 June 2009 and coming into force on August 1, 2009, subsequently formalized the extension.

129. Stephen Harper, Can. Prime Minister, Strong Leadership. A Better Canada. Address from the Throne to Open Second Session of the 37th Parliament of Canada (Oct. 16, 2007).

130. *Id.*

131. INT'L EXPERT PANEL ON SCI. PRIORITIES FOR CAN. ARCTIC RES. INITIATIVE, VISION FOR THE CANADIAN ARCTIC RESEARCH INITIATIVE: ASSESSING THE OPPORTUNITIES app. A (2008).

132. *Id.* at 4.

133. *Id.* at 16.

making process” by which possible models and sites are considered and chosen was emphasized.<sup>134</sup>

Only in July 2009 did the Government of Canada release a Northern Strategy document,<sup>135</sup> but the document remains quite general and vague on future international policy directions for the Arctic. For example, the Northern Strategy states that Canada will continue to manage its maritime boundary and jurisdictional disputes with the United States and Denmark in a cooperative manner and may seek to resolve them in the future in accordance with international law.<sup>136</sup> While the Strategy emphasizes Canada’s commitment to ensuring the Arctic Council has the necessary strength, resources, and influence to respond effectively to emerging challenges, no detailed vision for the Council is provided.<sup>137</sup> One can expect Canada’s policy to evolve through further speeches and funding initiatives.<sup>138</sup>

#### IV. FUTURE DIRECTIONS

##### A. Introduction

A range of options for strengthening ocean governance in the Arctic exist. “Soft law” approaches include, among others: harmonization of environmental and technical standards by coastal states in key sectors such as shipping, fishing, and hydrocarbon exploration/exploitation; development of integrated ocean planning initiatives for transboundary marine ecosystems, for example, the Barents, Beaufort, and Bering Seas;<sup>139</sup> and restructuring the Arctic Council, including by broadening participation.<sup>140</sup>

Various “hard law” approaches have also been proposed, in-

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134. *Id.* at 17. On February 20, 2009, the Minister of Indian Affairs and Northern Development, the Honourable Chuck Strahl, announced the undertaking of a feasibility study for the proposed Arctic research station with three locations in Nunavut being considered – Cambridge Bay, Pond Inlet, and Resolute. See Indian & N. Aff. Can., Feasibility Study for Canada’s new High Arctic Research Station, <http://www.ainc-inac.gc.ca/nth/st/fs-eng.asp?p1=1036190&p2=1064486> (last visited Jan. 22, 2010).

135. GOV’T OF CAN., CANADA’S NORTHERN STRATEGY: OUR NORTH, OUR HERITAGE, OUR FUTURE (2009), available at <http://www.northernstrategy.gc.ca/cns/cns-eng.asp>.

136. See *id.* at 7.

137. See *id.* at 15.

138. The government’s website, Gov’t of Can., Canada’s Northern Strategy, [www.northernstrategy.gc.ca](http://www.northernstrategy.gc.ca) (last visited Jan. 22, 2010), will need to be consulted to track the various updates.

139. The PAME Working Group has already established a Large Marine Ecosystem Expert Group and PAME has committed to moving the ecosystem approach forward in three pilot areas, namely the West Bering, Barents and Beaufort Seas. See PROGRAM FOR PROT. OF ARCTIC MARINE ENV’T, DRAFT WORKING GROUP MEETING REPORT NO. I-2008 16-17 (2008).

140. See *Non-Arctic Countries*, *supra* note 113.

cluding, among others: negotiating a regional seas agreement with protocols;<sup>141</sup> establishing a new regional ocean management organization for governing areas beyond national jurisdiction;<sup>142</sup> transforming the Arctic Council into a treaty-based organization;<sup>143</sup> and forging sectoral agreements for particular priorities such as search and rescue and joint marine contingency planning.<sup>144</sup>

Rather than canvassing the full spectrum of governance options, the remainder of the discussion focuses on a few select options, namely adjusting the spatial scope of the NEAFC Convention (subsection IV.B.), adjusting the spatial scope of the OSPAR Convention (subsection IV.C.), and an Implementing Agreement under the LOS Convention (subsection IV.D.). Finally, subsection IV.E. concludes by highlighting the arguments for and against a new, international, legally binding instrument for the governance and regulation of the Arctic Ocean.

### *B. Adjusting the Spatial Scope of the NEAFC Convention*

One of the options for addressing gaps in the regime for the governance and regulation of marine capture fisheries is the development of one or more state-of-the-art RFMOs or Arrangements for species other than tuna, tuna-like species, and anadromous species. This may require adjustments in the competence of existing RFMOs or Arrangements, in particular in geographical terms. An obvious candidate for a spatial adjustment is the North-East Atlantic Fisheries Commission (NEAFC), established by the NEAFC Convention.<sup>145</sup> The five existing members of NEAFC are the European Community (EC), Denmark on behalf of the Faroe Islands and Greenland, Iceland, Norway, and the Russian Federation. Unlike the OSPAR Convention,<sup>146</sup> the NEAFC Convention does not explicitly mention the option of amending its spatial scope. On the other hand, there is also nothing in Article 19, or elsewhere in the NEAFC Convention that would preclude spatial adjustments, as such.

It should be noted that the NEAFC Convention's eastern boun-

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141. See de La Fayette, *supra* note 120.

142. Rosemary Rayfuse, *Melting Moments: The Future of Polar Oceans Governance in a Warming World*, 16(2) RECIEL 196 (2007); Rosemary Rayfuse, *Protecting Marine Biodiversity in Polar Areas Beyond National Jurisdiction*, 17(1) RECIEL 3 (2008).

143. Timo Koivurova, *Alternatives for an Arctic Treaty – Evaluation and a New Proposal*, 17(1) RECIEL 14 (2008).

144. The Ilulissat Declaration has already emphasized that search and rescue cooperations are likely to become a high priority in light of increased Arctic support. See *Ilulissat Declaration*, *supra* note 7.

145. NEAFC, *supra* note 8, art. 3.

146. OSPAR Convention, *supra* note 9.

dary and the western boundary north of Greenland do not coincide with the two relevant boundaries of FAO Statistical Area No. 18, entitled "Arctic Sea." While the spatial scope of the NEAFC Convention is identical to the spatial scope of its 1959 predecessor,<sup>147</sup> the two relevant boundaries of FAO Statistical Area No. 18 already existed in 1970 and have not changed since then.<sup>148</sup> The spatial scope of the OSPAR Convention and its two predecessors, the Oslo Convention<sup>149</sup> and the Paris Convention,<sup>150</sup> is also identical to that of the NEAFC Convention (and its 1959 predecessor). Interestingly, the ICES Convention<sup>151</sup> stipulates that the spatial mandate of the International Council for the Exploration of the Sea (ICES) is "the Atlantic Ocean and its adjacent seas"<sup>152</sup> but the northern boundaries of the ICES Areas are identical to those of FAO Statistical Area No. 18.

The rationale for the northern boundaries of the predecessor to the NEAFC Convention is not evident. Perhaps they simply demarcated the most northerly range of distribution that commercially significant fish stocks could possibly have, in the most optimistic scenario, and then moved just a bit further north to be on the safe side. It should also be noted that until recently the exact location of the northern boundaries did not have practical relevance for NEAFC.

While spatial adjustments are thus possible, it is submitted that only relatively small geographical adjustments, expansions as well as shrinkages, do not seem problematic. Such adjustments could, for instance, follow maritime boundaries or ecosystem boundaries between different hydrographic regimes, submarine topography, and distributional ranges of certain target species or other species.<sup>153</sup> A well-known example of an international regulatory regime whose spatial scope was mainly determined by ecosystem boundaries is the CCAMLR Convention, by which the Commission for the Conservation of Antarctic Marine Living Resources

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147. North-East Atlantic Fisheries Convention art. 1, Jan. 24, 1959, 486 U.N.T.S. 157 (1964).

148. See the historical FAO statistical charts at FAO Fisheries & Agric. Dep't, Fishing Area Maps, <ftp.fao.org/fi/maps/Default.htm> (last visited Dec. 18, 2009).

149. Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft art. 2, Feb. 15, 1972, 932 U.N.T.S. 3 (1974).

150. Convention for the Prevention of Marine Pollution from Land-Based Sources art. 2, June 4, 1974, 1546 U.N.T.S. 120 (1989).

151. Convention for the International Council for the Exploration of the Sea, Sept. 12 1964, 652 U.N.T.S. 237 (1968).

152. *Id.* art. 2.

153. See Lewis M. Alexander, *Large Marine Ecosystems as Global Management Units*, in *BIOMASS YIELDS AND GEOGRAPHY OF LARGE MARINE ECOSYSTEMS* 339, 339-42 (Kenneth Sherman & Lewis M. Alexander eds., 1989).

(CCAMLR) was established.<sup>154</sup> Even in that case, however, the approximation of the Antarctic Convergence agreed to during the negotiation of the CCAMLR Convention took account of political considerations, thereby causing a small diversion from pre-existing FAO Statistical Areas.<sup>155</sup>

For the purpose of adjusting the spatial scope of the NEAFC Convention, account could perhaps be taken of the large marine ecosystems (LMEs) of the Arctic marine area developed by PAME.<sup>156</sup> A quick comparison of these LMEs with the current spatial scope of the NEAFC Convention might suggest that, for instance, the latter's spatial scope could be expanded by including all of LME No. 20, entitled "Barents Sea,"<sup>157</sup> and perhaps even LME No. 58, entitled "Kara Sea."<sup>158</sup> Another option would be to restrict the spatial scope of the NEAFC Convention by excluding the spatial scope of LME No. 64, entitled "Arctic Ocean."<sup>159</sup> The spatial scope of FAO Statistical Area No. 18 could then be adjusted accordingly.<sup>160</sup>

A word of caution is warranted here, however. While the Arctic LMEs defined by PAME have taken account of "trophic relationships,"<sup>161</sup> this is quite different from a criterion such as "usefulness for conservation and management of target species."<sup>162</sup> And, even if the latter criterion were in fact used, the negotiations on the CCAMLR Convention illustrate that political considerations can override science-based criteria. Another political consideration would nevertheless attribute great weight to the LMEs defined by

154. It is of course acknowledged that regimes for enclosed or semi-enclosed seas are also mainly or exclusively determined by ecosystem boundaries.

155. See James N. Barnes, *The Emerging Convention on the Conservation of Antarctic Marine Living Resources: An Attempt to Meet the New Realities of Resource Exploitation in the Southern Ocean*, in *THE NEW NATIONALISM AND THE USE OF COMMON SPACES: ISSUES IN MARINE POLLUTION AND THE EXPLOITATION OF ANTARCTICA* 239, 261-62 (Jonathan I. Charney ed., 1982) (observing that at the insistence of Argentina, the boundary was drawn further away from Argentine territory in order to exclude the Drake Passage). FAO statistical charts were later modified accordingly. See FAO Fisheries & Agric. Dep't, *supra* note 148; see also F.M. AUBURN, *ANTARCTIC LAW AND POLITICS* 218, 292 (1982).

156. These can be found at <http://www.pame.is/ecosystem-approach>.

157. *Id.*

158. *Id.*

159. Large Marine Ecosystems of the Arctic Region and Linked Watersheds, <http://www.pame.is/ecosystem-approach> (last visited Dec. 18, 2009).

160. The historical FAO statistical charts, *supra* note 148, indicate that this is a common practice.

161. PROGRAM FOR PROT. OF ARCTIC MARINE ENV'T, WORKING GROUP MEETING REPORT NO: I-2006 11 (2006).

162. Erik J. Molenaar, Arctic Fisheries Conservation and Management: Initial Steps of Reform of the International Legal Framework 26, available at [http://doc.nprb.org/web/nprb/afs\\_2009/Molenaar%20Arctic%20Fisheries%20Conservation%20and%20Management%20final%20version%20to%20YPL.pdf](http://doc.nprb.org/web/nprb/afs_2009/Molenaar%20Arctic%20Fisheries%20Conservation%20and%20Management%20final%20version%20to%20YPL.pdf) (text submitted to Yearbook of Polar Law March 2009).

PAME. This would be the wish to pursue integrated, cross-sectoral, ecosystem based, ocean governance.

By contrast, large expansions, by which the NEAFC Convention Area would comprise the entire Arctic Ocean, as suggested in the EU Commission's Arctic Communication,<sup>163</sup> appear much more problematic. This is not so much caused by the interests of the new coastal states, namely Canada and the United States. In fact, Canada would not really be a new coastal state as it currently already has the status of Cooperating Non-Contracting Party (NCP) with NEAFC. In light of this status, Canada may even apply for full membership in the future. NEAFC's existing spatial competence in the Atlantic sector of the Arctic, as well as potential adjustments of this spatial competence, do not appear to have played a role in Canada's decision to apply for NCP status.<sup>164</sup> This does not exclude, however, that such considerations could not play a role in the future.<sup>165</sup> In case Canada would indeed apply for full membership, this would, at any rate, indicate its willingness to accept the substance of the NEAFC Convention, as modified by the 2004 and 2006 amendments.<sup>166</sup> It is less clear if the United States would have significant problems with the substance of the amended NEAFC Convention.

Perhaps more important, however, is whether or not Canada and the United States have fundamental objections to NEAFC's practices on the establishment and allocation of the total allowable catch (TAC) for straddling fish stocks, for the reason that these clearly give preferential treatment to coastal states. The initiative lies here with the coastal states, who first agree on a coastal state TAC while taking account of the scientific advice provided by ICES.<sup>167</sup> However, as the ICES advice relates to the entire stock, the coastal states effectively determine the high seas TAC as well.

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163. See *Arctic Region Communication*, *supra* note 97, at 8 (observing that "[i]n principle, extending the mandate of existing management organisations such as NEAFC is preferable to creating new ones.").

164. Email correspondence between Erik J. Molenaar and L. Ridgeway, Dir. Gen., Int'l Policy & Integration, Fisheries & Oceans Can. (Nov. 2008) (on file with author).

165. See *generally* NEAFC Convention, *supra* note 8, art. 19 (stating that once Canada is a member of NEAFC it can participate in decision making on proposals to adjust the spatial scope of the NEAFC Convention; such decisions require a three-fourths majority).

166. See *id.* art. 19(4) (stating that if Canada would insist on acceding to the 'old' version of the NEAFC Convention, this would not attract the necessary majority pursuant to Art. 20(4) of the NEAFC Convention).

167. *E.g.*, Agreed Record of Conclusions of Fisheries Consultations Between Norway, the European Community and the Faroe Islands on the Management of Mackerel in the North-East Atlantic for 2008 [hereinafter 2008 Agreed Record], annex I, Nor.-Eur. Cmty.-Faroe Is., Oct. 30, 2007, available at [http://www.fisk.fo/Admin/public/DWSDownload.aspx?File=%2FFiler%2FFisk%2FPDF%2F301007\\_Makrelsemjan\\_2008.pdf](http://www.fisk.fo/Admin/public/DWSDownload.aspx?File=%2FFiler%2FFisk%2FPDF%2F301007_Makrelsemjan_2008.pdf). See also North East Atlantic Fisheries Comm'n, Performance Review Panel Report 14, 17 (2006).

The coastal states also allocate the coastal state TAC between them, without specifying which part of each coastal state's allocation should be caught within or beyond areas under national jurisdiction.<sup>168</sup> NEAFC is then charged with determining and allocating the high seas TAC.<sup>169</sup> Even though room for maneuvering seems limited, it should not be forgotten that there are only five Members of NEAFC and three of these are regarded as coastal states, with respect to all three main straddling fish stocks regulated by NEAFC.<sup>170</sup>

While Canada and the United States would, as coastal states, of course benefit from such preferential treatment as well, it is not excluded that they would object to such practices in order to be consistent with their user or non-user interests in other RFMOs and Arrangements. Much more problematic, however, are the user interests of states that are not coastal states with respect to the North-East Atlantic Ocean or the Arctic Ocean: *e.g.*, the other states that currently have the status of NCP with NEAFC (Belize, Cook Islands, Japan and New Zealand) and other states with large distant water fishing fleets, such as China and South Korea. Even though fishing opportunities in the high seas pocket of the central Arctic Ocean are likely to be very minimal in the near future, climate change may alter the Arctic marine area, both rapidly and fundamentally, in the medium term. Consequently, it cannot be ruled out that fishing opportunities in the high seas of the Arctic Ocean will be substantial in the medium and long terms. Not only is the size of the high seas pocket enormous, but the fisheries on the nose and tail of the Grand Banks in the Northwest Atlantic also aptly illustrate that just a small area of the high seas may be sufficient.

### C. *Adjusting the Spatial Scope of the OSPAR Convention*

In case it is deemed desirable to pursue integrated, cross-sectoral, ecosystem-based ocean governance in the Arctic Ocean, it

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168. See 2008 Agreed Record, *supra* note 167, annex I, para. 1.

169. With respect to mackerel, see, *e.g.*, NORTH EAST ATLANTIC FISHERIES COMM'N, PERFORMANCE REVIEW PANEL REPORT OF THE NORTH EAST ATLANTIC FISHERIES COMMISSION RECOMMENDATION ON MACKEREL, RECOMMENDATION I: 2008 (2008), available at [http://neafc.org/measures/current\\_measures/1\\_mackerel-08.html](http://neafc.org/measures/current_measures/1_mackerel-08.html) (stating "[r]ecommendation by the North East Atlantic Fisheries Commission in accordance with Article 5 of the Convention on Future Multilateral Cooperation in North-East Atlantic Fisheries at its Annual Meeting in November 2007 to adopt conservation and management measures for mackerel in the NEAFC Convention Area in 2008.").

170. These are blue whiting, herring and mackerel. The Russian Federation is not regarded as a coastal state for blue whiting and mackerel and Iceland is not regarded as a coastal state for mackerel.

is logical to examine the opportunities and limitations of adjusting the spatial scope of the OSPAR Convention for the reason that the Convention already covers the Atlantic sector of the Arctic Ocean. It is interesting to note that whereas the Arctic Communication refers explicitly to the option of adjusting the spatial scope of the NEAFC Convention, this option is not raised with regard to the OSPAR Convention. Quite surprisingly, the Arctic Communication, in fact, does not explicitly refer to the OSPAR Convention or the OSPAR Commission at all.

There are currently sixteen parties to the OSPAR Convention: two states that are located upstream on watercourses reaching the OSPAR Maritime Area (Luxemburg and Switzerland); the EC; and all coastal states bordering the North-East Atlantic, except the Russian Federation. The spatial adjustment of the OSPAR Convention is specifically mentioned in Article 27(2), which stipulates:

The Contracting Parties may unanimously invite States or regional economic integration organisations not referred to in Article 25 to accede to the Convention. In the case of such an accession, the definition of the maritime area shall, if necessary, be amended by a decision of the Commission adopted by unanimous vote of the Contracting Parties. Any such amendment shall enter into force after unanimous approval of all the Contracting Parties on the thirtieth day after the receipt of the last notification by the Depository Government.<sup>171</sup>

The states envisaged by this provision can, in view of the list in Article 25, be either coastal states whose maritime zones are adjacent or near to the OSPAR Maritime Area or states that have no such maritime zones (e.g. states whose vessels or nationals are engaged in activities in the OSPAR Maritime Area). While it is not clear which states of the former category the negotiators had in mind when negotiating this provision, Canada and the United States would seem to be among them. The Russian Federation does not need an invitation to accede, as Article 27(1) gives it, as a coastal state to the OSPAR Maritime Area, a right to do so. If desired, an extension of the OSPAR Maritime Area would, in such a case, probably have to follow the amendment procedure laid down in Article 15.

As pointed out earlier, the northern boundaries of the OSPAR

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171. OSPAR Convention, *supra* note 9, art. 27(2).

Convention are identical to those of its predecessors, the Oslo Convention and the Paris Convention, which were in their turn modeled exactly on those of the 1959 predecessor to the NEAFC Convention. It was also noted that the rationale for these northern boundaries is not evident.

Similar to the discussion in section III, a distinction can be made between relatively small adjustments and a large adjustment by which the entire Arctic Ocean would be comprised within the OSPAR Maritime Area. Small adjustments, expansions as well as contractions, may for instance be warranted due to changes in the spatial scope of the NEAFC Convention or the creation of an Arctic marine environmental protection regime immediately adjacent to the OSPAR Maritime Area. In view of the discussion above, it is clear that nothing in the OSPAR Convention would preclude such spatial adjustments, as such.

Similarly, nothing in the OSPAR Convention would preclude a large adjustment by which the entire Arctic Ocean would be comprised within the OSPAR Maritime Area, as such. This may, for instance, be warranted if a similar adjustment is made in the spatial scope of the NEAFC Convention and a 100% overlap is desirable. This option would have the considerable advantage of subjecting the entire Arctic Ocean to the OSPAR Commission's competence on cross-sectoral issues and sectoral activities that are not yet subject to the competence of other regional and global bodies. It should also be remembered, however, that the shortcomings of the OSPAR Convention and the OSPAR Commission would be transposed to the Arctic Ocean as well.

More important seem to be the preparedness of Canada, the Russian Federation and the United States to become bound to the OSPAR Convention and the many legally binding decisions, non-legally binding recommendations and other agreements adopted by the OSPAR Commission. Would they be prepared to accept this "acquis" without significant amendments? Perhaps this is one of the main reasons why the Russian Federation is currently not a party to the OSPAR Convention, even though it is a coastal state to the OSPAR Maritime Area. It is also noteworthy that neither the Russian Federation nor the Soviet Union were parties to the Oslo and Paris Conventions.

#### *D. Implementing Agreement under the LOS Convention*

It has been suggested that in case a legally binding instrument for the marine Arctic is pursued, one option would be to link it directly to the LOS Convention by means of an Implementing

Agreement, under the LOS Convention.<sup>172</sup> It must be acknowledged that no rule of international law, including the LOS Convention, would preclude this *per se*. Even though the LOS Convention contains various amendment procedures,<sup>173</sup> at two earlier instances the United Nations General Assembly (UNGA) expressed the international community's preference for an Implementing Agreement instead. These are the Part XI Deep-Sea Mining Agreement and the Fish Stocks Agreement. Pragmatic and strategic considerations may therefore be of overriding importance. This is particularly evident in the case of the Part XI Deep-Sea Mining Agreement, which clearly modifies Part XI of the LOS Convention. Thus, while there is no precedent for an Implementing Agreement with a regional scope,<sup>174</sup> no rule of international law, including the LOS Convention, would in principle prevent the international community from pursuing such an option if the required majority so desires.

This notwithstanding, there are various reasons why an Implementing Agreement under the LOS Convention is not a realistic option. Most importantly, the direct link with the LOS Convention would imply that its negotiation process would fall under the UNGA. Not only would the UNGA decide on the overall objective, scope, and main elements of an Implementing Agreement but it would also determine, implicitly or explicitly, the rules of procedure for its negotiation. As the LOS Convention is a global instrument and the UNGA a global body, it would be difficult to conceive of a negotiation process open to a select group of states instead of all members of the United Nations (UN). However, it is almost unthinkable that the five Arctic Ocean coastal states would support and participate in a negotiation process where they could potentially be confronted by 180-odd states with opposing views

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172. This has, for instance, been suggested by the Executive Director of the European Environment Agency (EEA). See Jaqueline McGlade, Executive Dir., Eur. Env't Agency, The Arctic Environment - Why Europe Should Care, Speech Delivered at the Arctic Frontiers Conference, Tromsø (Jan. 23, 2007), available at <http://www.eea.europa.eu/pressroom/speeches/23-01-2007>. The actual wording used in this speech is "Polar Ocean protocol." *Id.* This wording is confusing because it can be interpreted as applying to both the Arctic Ocean and the Southern Ocean. Note that the words "based on UNCLOS" on page 10 of the European Commission's Arctic Communication, *supra* note 97, indicate that the option of an Implementation Agreement under the LOS Convention is no longer being pursued.

173. See LOS Convention, *supra* note 10, arts. 312-316.

174. None of the existing regional marine environmental protection regimes are formally linked to the LOS Convention. While the LOS Convention contains qualified obligations on regional cooperation, it does not provide guidance on the outcome of such cooperation. Likewise, the constituent instruments of RFMOs and Arrangements are not(?) formally linked to the LOS Convention or the Fish Stocks Agreement, even though the Fish Stocks Agreement provides considerable guidance as regards the functions and operation of RFMOs and Arrangements and the substance of their constituent instruments.

and interests.

Such lack of support by the Arctic Ocean coastal states would be obvious if the envisaged Implementing Agreement would apply to the entire Arctic Ocean, including areas under their national jurisdiction. However, even if the instrument would exclusively apply to areas beyond national jurisdiction (high seas and the Area), it is easy to understand that the Arctic Ocean coastal states would fear that the UNGA would not take adequate account of their sovereignty, sovereign rights, and jurisdiction as coastal states when determining substantive and procedural aspects of the negotiation process. States with a claim or the basis for a claim to the Antarctic continent had, to some extent, similar concerns when they were confronted by the Malaysian-led initiative to bring the governance of Antarctica under the scope of the UN.<sup>175</sup> In light of these considerations, it is not surprising that there is no precedent for an Implementing Agreement to the LOS Convention with a regional scope.

Such an instrument might also serve a purpose that is essentially similar to the guidance provided by the Fish Stocks Agreement on the functions and operation of RFMOs and Arrangements and the substance of their constituent instruments. This global Implementing Agreement could then provide guidance on the substance of the regional Arctic instrument and the functions and operation of the bodies established by it.

*E. Arguments For and Against a New International Legally Binding Instrument for the Governance and Regulation of the Arctic Ocean*

Emphasizing the many benefits that one or more binding agreements might offer, various authors and organizations have advocated for the negotiation of a hard law regime for the Arctic. Suggested benefits include: encouraging greater political and bureaucratic commitments; establishing firmer institutional and financial foundations; transcending the vagaries of changing governmental viewpoints and shifting personnel; giving 'legal teeth' to environmental principles and standards; raising the public profile of regional challenges and cooperation needs; and providing for

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175. See G.A. Res. 38/77, para. 1, U.N. DOC. A/RES/38/77 (Dec. 15, 1983); Christopher C. Joyner, *Antarctica and the Indian Ocean States: The Interplay of Law, Interests, and Geopolitics*, 21 OCEAN DEV. & INT'L L. 41, 48-49 (1990).

dispute resolution mechanisms.

However, various reasons have been put forward against—or at least questioning—a treaty-based approach. Reasons given include the following considerations: difficulty in getting consensus on the need for an agreement; lengthy and costly preparatory and negotiation processes involved; risk of legalizing lowest common denominator standards; stifling political and bureaucratic flexibilities; and contributing another layer of complexity to the already fragmented array of multilateral environmental agreements. The lack of implementation of existing agreements relevant to the Arctic and lack of assurance that all Arctic states will readily accept newly negotiated obligations are additional reasons.<sup>176</sup>

A few things are certain about the future of ocean governance in the Arctic. The quest for effective transboundary cooperation is not over and voices within the EU and Canada are bound to keep the Arctic treaty debate alive.

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176. Timo Koivurova & David L. VanderZwaag, *The Arctic Council at 10 Years: Retrospect and Prospects*, 40 UNIV. BRIT. COLUM. L. REV. 121, 178-80 (2007) (footnotes omitted).



**ARCTIC MARINE SHIPPING: OVERVIEW OF  
THE INTERNATIONAL LEGAL FRAMEWORK, GAPS,  
AND OPTIONS**

E.J. MOLENAAR\*

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## I. INTRODUCTION

It is now widely accepted that global climate change will have dramatic impacts for the Arctic. The rapid warming of the Arctic climate was the first and most prominent of the 10 key findings of the 2004 Arctic Climate Impact Assessment (ACIA).<sup>1</sup> On Sept. 15, 2007, the Arctic ice cap was 23% below the last record set in 2005.<sup>2</sup> This 2007 record exceeded the computer model predictions used to prepare the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report (AR4) in 2007.<sup>3</sup> Perhaps even more important than ice-coverage is the increasing percentage of first-year sea-ice. Many scientists fear that the “Arctic meltdown” has become irreversible even though the 2007 record remained intact in 2008.<sup>4</sup>

Of particular importance to this article are the ACIA’s key findings four: “Animal species’ diversity, ranges and distribution will change,” and six: “Reduced sea ice is very likely to increase marine transport and access to resources.”<sup>5</sup> While the former predicts changes in the composition of the Arctic marine ecosystem in quantitative, qualitative, spatial, and temporal terms, the latter predicts increased pressure on this ecosystem due to more intensive exercise of existing maritime uses, *e.g.*, shipping and fishing, as well as new uses.

The aim of this article is to assess the adequacy of the current international legal framework for the regulation of Arctic marine shipping in the context of global climate change.<sup>6</sup> This assessment

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1. ACIA, *Impacts of a Warming Arctic: Arctic Climate Impact Assessment*. Cambridge University Press, 2004.

2. Press Release, Nat’l Snow & Ice Data Ctr., Arctic Sea Ice Shatters All Previous Record Lows (Oct. 1, 2007), *available at* [http://nsidc.org/news/press/2007\\_seaiceminimum/20071001\\_pressrelease.pdf](http://nsidc.org/news/press/2007_seaiceminimum/20071001_pressrelease.pdf)

3. See Press Release, Nat’l Ctr. for Atmospheric Research, Arctic Ice Retreating More Quickly than Computer Models Project (Apr. 30, 2007), *available at* <http://www.ucar.edu/news/releases/2007/seaiice.shtml>.

4. See National Snow & Ice Data Center, <http://nsidc.org> (last visited Jan. 7, 2010), for recent information.

5. OVERVIEW REPORT, *supra* note 1, at Executive Summary, 10-11.

6. See Erik Jaap Molenaar, *Arctic Fisheries Conservation and Management: Initial Steps of Reform of the International Legal Regime*, 1 Y.B. POLAR L. (forthcoming 2009) [hereinafter Molenaar, *Arctic Fisheries Conservation and Management*] (discussing arctic fisheries); *see also* TIMO KOIVUROVA & ERIK JAAP MOLENAAR, INTERNATIONAL GOVERNANCE AND

of adequacy is predominantly focused on the impacts of Arctic marine shipping, on the protection and preservation of the marine environment, and marine biodiversity of the Arctic marine area. This means that the mandate of the International Maritime Organization (IMO) over maritime safety and security in international shipping is in principle beyond this article's scope.<sup>7</sup> However, this article still takes account of IMO rules and standards that are primarily aimed at ensuring maritime safety and security but have a significant subsidiary purpose of pollution prevention.

For the purpose of this article, the following are regarded as "Arctic states:" Canada, Denmark (in relation to Greenland), Finland, Iceland, Norway, the Russian Federation, Sweden, and the United States. Even though there is no universally accepted definition for the "Arctic Ocean," it seems generally accepted that there are only five coastal states to the Arctic Ocean, namely Canada, Denmark (in relation to Greenland), Norway, the Russian Federation, and the United States.<sup>8</sup>

Currently, there is also no universally accepted definition for the spatial scope of the marine Arctic. Relevant instruments and processes use different definitions for the Arctic, for instance, the area north of the northern treeline, or the area north of the Arctic Circle (66°33' North). In this article, Arctic fisheries are regarded as the fisheries that occur in marine areas within the outer limits of the so-called "AMAP area," as agreed by the Arctic Monitoring and Assessment Programme (AMAP) of the Arctic Council.<sup>9</sup> These are the marine areas north of the Arctic Circle and north of 62°N in Asia and 60°N in North America, modified to include the marine areas north of the Aleutian chain, the Hudson Bay, and parts of the North Atlantic Ocean, including the Labrador Sea.<sup>10</sup> For the purpose of this article, these marine areas are referred to as the "Arctic marine area." Thus defined, the Arctic marine area has a broader spatial scope than the maximum scope of the application

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REGULATION OF THE MARINE ARCTIC: OVERVIEW AND GAP ANALYSIS, (World Wildlife Fund Jan. 2009) [hereinafter KOIVUROVA & MOLENAAR, INTERNATIONAL GOVERNANCE], available at [http://assets.panda.org/downloads/gap\\_analysis\\_marine\\_resources\\_130109.pdf](http://assets.panda.org/downloads/gap_analysis_marine_resources_130109.pdf) (for a cross-sectoral discussion); Timo Koivurova, Erik Jaap Molenaar & David VanderZwaag, *Canada, the EU and Arctic Ocean Governance: A Tangled and Shifting Seascape and Future Directions*, 18 J. TRANSNAT'L L. & POL'Y 249 (2009).

7. See generally DAVID VANDERZWAAG ET AL., GOVERNANCE OF ARCTIC MARINE SHIPPING (Marine & Env'tl. Law Inst., Dalhousie Univ. 2008), available at <http://arcticportal.org/uploads/vZ/6u/vZ6uVo9aTTQv45iw193oFw/AMSA-Shipping-Governance-Final-Report---Revised-November-2008.pdf>.

8. Arctic Ocean Conference, Ilulissat Declaration (May 28, 2008), available at <http://arctic-council.org/filearchive/Ilulissat-declaration.pdf>.

9. Arctic Monitoring & Assessment Programme [AMAP], Area Map (2003), <http://www.amap.no/AboutAMAP/GeoCov.htm> (last visited Oct. 11, 2009).

10. *Id.*

of the IMO Polar Shipping Guidelines.<sup>11</sup>

The article continues with section II on current and future Arctic marine shipping, followed by section III on the law of the sea in the Arctic marine area. Section IV then gives an overview of the international legal and policy framework with respect to the regulation of Arctic marine shipping. Subsequently, section V identifies gaps in the international legal and policy framework and options for addressing them. The article concludes with section VI on integrated, cross-sectoral ecosystem-based ocean management.

## II. CURRENT AND FUTURE ARCTIC MARINE SHIPPING

For the purpose of this article, Arctic marine shipping is regarded as the shipping that occurs, or could occur, in the Arctic marine area. Arctic marine shipping can be trans-Arctic or intra-Arctic. Trans-Arctic marine shipping can take place by means of various routes and combinations of routes. Two of these routes are the Northwest Passage and the Northern Sea Route. The official Northern Sea Route encompasses all routes across the Russian Arctic coastal seas from the Kara Gate (at the southern tip of Novaya Zemlya) to the Bering Strait.<sup>12</sup> The Northwest Passage is the name given to the marine routes between the Atlantic and Pacific oceans along the northern coast of North America that span the straits and sounds of the Canadian Arctic Archipelago. As a consequence of the accelerated melting of Arctic sea ice, however, the Central Arctic Ocean Route may soon be an option as well. The most suitable course of this latter route will probably vary greatly from year to year. These annual variations may lead to various combinations of the Central Arctic Ocean Route on the one hand and the Northwest Passage and Northern Sea Route on the other hand. Some of the routes of which the Northern Sea Route consists already pass through the high seas area of the Central Arctic

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11. See Int'l Maritime Org. [IMO], *Guidelines for Ships Operating in Polar Waters*, IMO Assembly Res. A.1024(26), Dec. 2, 2009; The Polar Shipping Guidelines will apply in conjunction with the 2002 Guidelines for Ships Operating in Arctic Ice-Covered Waters (Arctic Shipping Guidelines; IMO MSC/Circ. 1056, MEPC/Circ. 399, of 23 December 2002). This parallel applicability—even though they are not legally binding of course—can be deduced from the fact that the Preamble to the Polar Shipping Guidelines does not revoke the Arctic Shipping Guidelines (see also IMO doc. DE 52/WP.2, of 19 March 2009, at para. 28). Which Guidelines are applicable depends on the date of construction of ships (see Preambular paras 2 and 3 of the Polar Shipping Guidelines).

12. See generally Leonid Tymchenko, *The Northern Sea Route: Russian Management and Jurisdiction over Navigation in Arctic Seas*, in *THE LAW OF THE SEA AND POLAR MARITIME DELIMITATION AND JURISDICTION* 269-91 (Alex G. Oude Elferink & Donald R. Rothwell eds., 2001) (defining NSR). See also FINAL REPORT OF THE ARCTIC MARINE TRANSPORT WORKSHOP (for a map) (Lawson Brigham & Ben Ellis eds., 2004), available at <http://www.institutenorth.org/servlet/download?id=28>.

Ocean. Finally, it is important to note that all trans-Arctic marine shipping must pass through the Bering Strait.

Regarding the type of shipping, this article covers all intra-Arctic and trans-Arctic marine shipping, including but not limited to:

- Shipping for the purpose of tourism and for servicing installations used for the exploration and exploitation of offshore hydrocarbon resources.
- The larger fishing vessels that are covered by SOLAS 74.<sup>13</sup>
- Warships and other government ships operated for non-commercial purposes.<sup>14</sup>

Current Arctic marine shipping is mainly intra-Arctic, which dominates summer operations in the Canadian Arctic and around the east and west Greenlandic coasts. Year-round Arctic marine transport in the Russian Arctic has been maintained since 1978-79 between the port of Dudinka on the Yenisey River and Murmansk. There have been only a small number of trans-Arctic voyages in the summer for science and tourism across the Northwest Passage and the Northern Sea Route since 2000.<sup>15</sup>

Intra-Arctic and trans-Arctic shipping can be interesting alternatives to the much longer routes using the Panama and Suez Canals or Arctic routes that are partly terrestrial and partly marine. It is nevertheless important to realize that even though summers without sea-ice in much or all of the Arctic Ocean may only be a few decades ahead in the future, sea-ice is still expected to be widespread in winter. While much or most of this will be relatively thin first-year sea-ice, and thus not too problematic to marine shipping, there may be other factors that could adversely affect shipping conditions.<sup>16</sup>

The Arctic Marine Shipping Assessment (AMSA) finalized by the Arctic Council's Protection of the Arctic Marine Environment (PAME) working group in April 2009, provide projections of future Arctic marine shipping and consequential recommendations.<sup>17</sup> The

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13. International Convention for the Safety of Life at Sea, London, Nov. 1, 1974. In force 25 May 1980, with protocols and regularly amended [hereinafter SOLAS 74].

14. United Nations Convention on the Law of the Sea, art. 29, Dec. 10, 1982, 1883 U.N.T.S. 397 [hereinafter LOS Convention], available at [http://www.un.org/Depts/los/convention\\_agreements/texts/unclos/unclos\\_e.pdf](http://www.un.org/Depts/los/convention_agreements/texts/unclos/unclos_e.pdf) (defining warship).

15. Information kindly provided by L. Brigham, Aug. 2008.

16. See also James Kraska, *The Law of the Sea Convention and the Northwest Passage*, 22 INT'L J. MARINE & COASTAL L. 2, 257-82, 260 (2007).

17. The recommendations are discussed in subsection IV(D)(3)(b).

future projections were facilitated by AMSA's Scenario Narratives<sup>18</sup> of May 2008, which are based on two variables, (a) governance stability and (b) demand in resources and trade.<sup>19</sup> These two variables lead to four scenarios referred to as (i) Arctic race, (ii) Arctic saga, (iii) Polar lows, and (iv) Polar preserve.<sup>20</sup> Each of these is potentially influenced by uncertainties or "wildcards," for instance, accelerated Arctic meltdown, major Arctic shipping disasters, and technology breakthroughs.<sup>21</sup> An example of the last is the Double Acting Tanker (DAT), which has a stern designed for ice-breaking and a bow optimized for open water conditions.<sup>22</sup>

At least in the near future, it seems that a high price for hydrocarbons will be an important driver, not only because of cost-benefits of shorter trans-Arctic shipping routes but also because the expected exploration and exploitation of hydrocarbon resources in the Arctic marine area will lead to increased shipping. The risk-assessments of classification societies and the marine insurance industry are nevertheless likely to be a crucial factor for the economic viability of all Arctic marine shipping. The future expansion of Arctic marine shipping is also likely to lead to more diverse stakeholders, which also do not necessarily have Arctic states as their main basis.<sup>23</sup> Trans-Arctic marine shipping is expected to be an important driver for this development.

Marine shipping has the following actual and potential impacts on the marine environment and marine biodiversity:

- Shipping incidents leading to accidental discharges of polluting substances (cargo or fuel) or physical impact on components of the marine ecosystem (*e.g.*, on benthos and large marine mammals).

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18. See generally ARCTIC MARINE SHIPPING ASSESSMENT (AMSA), THE FUTURE OF ARCTIC MARINE NAVIGATION IN MID-CENTURY: SCENARIO NARRATIVES REPORT (May 2008) [hereinafter AMSA, SCENARIO NARRATIVES REPORT], available at <http://arcticportal.org/uploads/sz/hm/szhmvPw3beAQMOJGoVxT9Q/GBN-AMSA-Scenario-Narratives-Report-FINAL-May08-v1May.pdf>.

20. *Id.* at 5.

21. See *id.* at 17-18.

21. *Id.* at 19; Lawson W. Brigham, Arctic Marine Shipping Assessment: What is Driving Arctic Marine Use?, Presentation at Conference "Opening the Arctic Seas: Envisioning Disasters and Framing Solutions" (Mar. 18, 2008) (see slide 11, "20 Key AMSA Uncertainties"), available at [http://www.crrc.unh.edu/workshops/arctic\\_spill\\_summit/presentations/lawson.pdf](http://www.crrc.unh.edu/workshops/arctic_spill_summit/presentations/lawson.pdf).

22. FINAL REPORT OF THE ARCTIC MARINE TRANSPORT WORKSHOP, *supra* note 12, at A.11.

23. *Contra* AMSA, SCENARIO NARRATIVES REPORT, *supra* note 18, at 2. See also Int'l N. Sea Route Programme Home Page, <http://www.fni.no/insrop/> (last visited Oct. 11, 2009).

- Operational discharges (cargo residues, fuel residues (sludge), (incineration of) garbage and sewage) and emissions.
- Navigation impacts (noise pollution and other forms of impacts on or interference with marine species potentially causing, for instance, disruption of behavior, abandonment or trampling of the young by fleeing animals or displacement from normal habitat).
- Introduction of alien organisms through ballast-water exchanges or attachment to vessel hulls (e.g., in crevices<sup>24</sup>).
- Anchoring impacts.

All these actual and potential impacts are also relevant for Arctic marine shipping. The likelihood of some of these impacts, for instance shipping incidents, may be higher in some parts of the Arctic marine area due to the presence of ice bergs and insufficient experience in navigating in ice-covered areas and the lack of accurate charts.<sup>25</sup> In addition, cold temperatures may affect machinery and icing can create additional loads on the hull, propulsion systems and appendages.<sup>26</sup> Moreover, the remoteness of much of the Arctic marine area, the limited availability of Maritime Safety Information (MSI) data<sup>27</sup> and the challenges of navigating therein mean that, once shipping incidents do occur, a response will take relatively long and may even then be inadequate to address impacts to the marine environment and marine biodiversity.

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24. *Australia: Establishment of Effective Antarctic Quarantine Controls for Tourism and Non-Government Activities*, at 2, ATCM XXVII Doc. WP-21/Rev.1 (2004), available at [http://www.ats.aq/27atcm/e/login/WP/27WP021E\(REV1\).doc](http://www.ats.aq/27atcm/e/login/WP/27WP021E(REV1).doc); ANTARCTIC TREATY CONSULTATIVE MEETING (ATCM), FINAL REPORT OF THE TWENTY-SEVENTH ANTARCTIC TREATY CONSULTATIVE MEETING, at ¶ 134 (2004) [hereinafter ATCM, FINAL REPORT] (referring, *inter alia*, to the fact that many vessels used in Antarctic tourism also operate in the Arctic); Erik Jaap Molenaar, *Sea-Borne Tourism in Antarctica: Avenues for Further Intergovernmental Regulation*, 20 INT'L J. MARINE & COASTAL L. 247, 258 (2005).

25. IMO, *Guidelines on Voyage Planning for Passenger Ships Operating in Remote Areas*, IMO Res. 25/9, A 25/Res. 999, (Jan. 3, 2008); Antarctic Treaty Consultative Meeting (ATCM), *Hydrographic Surveying and Chartering*, ATCM Res. 5(2008) (referring to the role of the International Hydrographic Organization (IHO)); see also Scott G. Borgeson, *Arctic Meltdown: The Economic and Security Implications of Global Warming*, 87 FOREIGN AFF. 63, 76 (2008).

26. Cf. VANDERZWAAG, *supra* note 7, at 13 (stating that “[e]xtreme cold temperatures may reduce the effectiveness of components ranging from deck machinery”).

27. This issue is addressed *inter alia*, in the IMO Sub-Committee on Radiocommunications and Search and Rescue (COMSAR) and by means of a joint IMO/IHO/World Meteorological Organization (WMO) Correspondence Group on Arctic MSI Services.

## III. THE LAW OF THE SEA IN THE ARCTIC MARINE AREA

The cornerstones of the current international law of the sea are the LOS Convention<sup>28</sup> and its two implementation agreements, the Part XI Deep-Sea Mining Agreement,<sup>29</sup> and the Fish Stocks Agreement.<sup>30</sup> The current international law of the sea applies to the marine environment of the entire globe, including the entire marine environment of the Arctic Ocean, however defined. All Arctic states are parties to these three treaties, except for the United States, which is not a party to either the LOS Convention or the Part XI Deep-Sea Mining Agreement.<sup>31</sup>

The LOS Convention recognizes the sovereignty, sovereign rights, freedoms, rights, jurisdiction, and obligations of states within several maritime zones. The most important of these for the Arctic are internal waters, territorial sea, exclusive economic zone (EEZ), continental shelf, high seas, and the Area.<sup>32</sup> There are likely to be at least two pockets (enclaves) of the Area in the central Arctic Ocean and four high seas pockets in the Arctic marine area (as defined in this article). The latter are the so-called “Banana Hole” in the Norwegian Sea, the so-called “Loop Hole” in the Barents Sea, the so-called “Donut Hole” in the central Bering Sea and the central Arctic Ocean. The outer limits of the maritime zones of coastal states are measured from baselines drawn in accordance with several provisions of the LOS Convention. The normal baseline is the low-water line along the coast.<sup>33</sup> The LOS Convention also allows coastal states to draw straight baselines in certain situations.<sup>34</sup> However, the straight baselines drawn by Canada around its Arctic islands are regarded by the United States and European Union (EU) Member States as inconsistent with

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28. See generally LOS Convention, *supra* note 14.

29. Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982, New York, July 28 1994. In force 28 July 1996, 33 I.L.M. 1309 (1994); see also U.N. Div. for Ocean Aff. & Law of the Sea, Oceans and Law of the Sea, [www.un.org/Depts/los](http://www.un.org/Depts/los) (last visited Jan. 7, 2010).

30. Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, New York, Aug. 4, 1995. In force 11 December 2001, 34 I.L.M. 1542 (1995); see also U.N. Div. for Ocean Aff. & Law of the Sea, Oceans and Law of the Sea, *supra* note 29.

31. Information obtained from the United Nations Division for Ocean Affairs & Law of the Sea, Oceans and Law of the Sea, *supra* note 29.

32. LOS Convention, *supra* note 14, art. 1(1) (defining Area as the seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction).

33. Arts. 5-7.

35. Arts. 9-14.

international law.<sup>35</sup>

The LOS Convention recognizes the sovereignty of a coastal state over its internal waters, archipelagic waters and territorial sea, the airspace above, and its bed and subsoil. Sovereignty entails exclusive access and control of living and non-living resources and all-encompassing jurisdiction over all human activities, unless states have in one way or another consented to restrictions thereon. The right of innocent passage is a widely recognized restriction.<sup>36</sup> The LOS Convention also recognizes specified economic and resource-related sovereign rights and jurisdiction of a coastal state with respect to its EEZ and, where relevant, outer continental shelf. Nevertheless, other states have navigational rights or freedoms within the maritime zones of coastal states and, with respect to their EEZ and (where relevant) outer continental shelf, also the freedoms of overflight, laying of submarine cables and pipelines and “other internationally lawful uses of the sea related to these freedoms.”<sup>37</sup>

The fact that the current international law of the sea applies to the entire marine Arctic, however defined, is also emphasized by the five Arctic Ocean coastal states in the Ilulissat Declaration.<sup>38</sup> Accordingly, as the “law of the sea” is an “extensive international legal framework,” they “therefore see no need to develop a new comprehensive international legal regime to govern the Arctic Ocean.” Conversely, they recognize the need for appropriate measures as a consequence of developments in the Arctic Ocean. In the less than a single page text that follows, reference is among other things made to the safety of navigation, vessel-source pollution and contingency planning and emergency response to incidents with shipping and offshore exploitation. Notably, no mention is made of international fisheries instruments, fisheries management in general or the need for holistic, integrated or cross-sectoral governance or management.

It is worth noting that the Ilulissat Declaration refers to the “law of the sea” but not explicitly to the LOS Convention. This is hardly surprising as the United States is not a party to the LOS Convention. It is well-known that the United States takes the view that, except for its Part XI, the LOS Convention is already part of customary international law and in that way creates rights and

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35. J.A. ROACH & R.W. SMITH, *EXCESSIVE MARITIME CLAIMS* 65-67 (1994). *See also* Kraska, *supra* note 16, at 270-73; McRae, *infra* note 90.

36. Art. 17.

37. *Id.* art. 58 (1).

38. *See* Ilulissat Declaration, *supra* note 8.

obligations for the United States.<sup>39</sup> However, while the United States does not also explicitly single out the dispute settlement mechanism in Part XV of the LOS Convention from its statement on customary international law, this mechanism is not able to become part of that body of law as a consequence of its procedural nature.<sup>40</sup> The dispute settlement mechanism in Part XV is widely regarded as a critical component of the package deal that paved the way for the adoption of the LOS Convention. The fact that it provides for compulsory third-party dispute settlement entailing binding decisions in many scenarios was a novelty in international law at the time. It thereby helps to safeguard the preservation of the package-deal of the LOS Convention from undesirable applications and interpretations of its provisions. The non-applicability of the dispute settlement mechanism of Part XV of the LOS Convention as between Arctic Ocean coastal states is therefore a significant gap in the “extensive international legal framework” referred to in the Ilulissat Declaration.

#### IV. INTERNATIONAL LEGAL AND POLICY FRAMEWORK

##### *A. Interests, Rights, Obligations, and Jurisdiction*

The international legal and policy framework for vessel-source pollution balances the different interests of the international community as a whole with the interests of states that have rights, obligations or jurisdiction in their capacities as flag, coastal or port states or with respect to their natural and legal persons. While the term “flag state” is commonly defined as the state in which a vessel is registered and/or whose flag it flies,<sup>41</sup> there are no generally accepted definitions for the terms “coastal state” or “port state.” For the purpose of this article however, the term “coastal state” refers to the rights, obligations, and jurisdiction of a state within its own maritime zones over foreign vessels. Conversely, the term “port state” refers to the rights, obligations and jurisdiction of a state over foreign vessels that are voluntarily in one of its ports. The rights, obligations, and jurisdiction of a port state do not overlap with those of a coastal state (*e.g.*, port states would have jurisdiction over illegal discharges that have occurred beyond the coastal

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39. Ronald Reagan, Presidential Proclamation 5030 (Mar. 10, 1983), 48 F.R. 10605, 3 C.F.R., 1983 Comp. 22.

40. *Cf.* Ted L. McDorman, *Global Ocean Governance and International Adjudicative Dispute Resolution*, 43 OCEAN & COASTAL MGMT. 255, 259 (2000).

41. *See, e.g.*, LOS Convention, *supra* note 14, art. 91(1).

state's maritime zones,<sup>42</sup> as well as other violations of conditions for entry into port).

The balance in the abovementioned framework is primarily between the socio-economic interests of flag states in unimpeded navigation and a minimum of globally uniform international regulation and the environmental interests of the coastal state. The port state commonly seeks to balance its local environmental interests and the broader environmental interests that its coastal state has in its maritime zones, against the socio-economic interests of the port and its "hinterland." The interests of the international community normally overlap with those of flag, coastal and port states but are usually broader and more general. The interests of some states, however, clearly undermine those of other states and the international community. For instance, by not ensuring that their ships comply with international minimum standards or by allowing foreign vessels in their ports to be in non-compliance with international minimum standards, these states, vessels and ports thereby have a competitive advantage over states, vessels and ports that *do* comply with international minimum standards. Such "free riders" clearly benefit from the consensual nature of international law—meaning that a state can only be bound to a rule of international law when it has in one way or another consented to that rule. Regarding flag states, this problem is aggravated due to the flag state's discretion in registering ships, the primacy of a flag state's jurisdiction over ships flying its flag on the high seas, and the failure of the current body of international law to specify consequences for the absence of a genuine link between a ship and its flag state.<sup>43</sup>

It should be realized that states generally have interests, rights, obligations, and jurisdiction in more than one capacity. This often leads to a more balanced compromise position but occasionally also leads to contradictory positions of the same state within different fora. There is no reason or indication to assume that Arctic states are different in this regard. The definitions for "port state" and "coastal state" presented above are necessary for the legal analysis below.

A common distinction with regard to jurisdiction is that between prescriptive jurisdiction—whereby a state prescribes, or enacts, rules and standards—and enforcement jurisdiction—whereby a state enforces the rules and standards it has prescribed. The term regulation usually means prescription in this article, but

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42. See, e.g., *id.* art. 218.

43. See LOS Convention, *supra* note 14, arts. 91(1), 92(1), 94.

can also have a broader meaning to encompass enforcement. Jurisdiction is commonly restricted in terms of its spatial and substantive scope and the subjects that are covered. The next subsection devotes some more attention to the substantive scope of standards or requirements.

### *B. Substantive Standards or Requirements*

In view of the jurisdictional framework for vessel-source pollution laid down in the LOS Convention and the types of standards agreed to within IMO so far, the following main categories of substantive standards or requirements can be distinguished:

- Discharge and emission standards, including standards relating to ballast water exchange.
- Construction, design, equipment and manning (CDEM) standards, including fuel content specifications and ballast water treatment requirements.
- Navigation standards, in the form of ships' routing measures, Ship Reporting Systems (SRSs) and Vessel Traffic Services (VTS).
- Contingency planning and preparedness standards and,
- Liability and insurance requirements.

This categorization is merely meant to facilitate the discussion below and does not capture the entire spectrum of types of standards or requirements developed within the IMO or applied by individual states acting in their various capacities. An Arctic Ocean coastal state may, for instance, require use of ice-breaker assistance and the payment of fees for such services.

### *C. Intergovernmental and Other Relevant International Bodies*

International regulation of vessel-source pollution is primarily performed by global bodies. This is a direct consequence of the global nature of international shipping and the interest of the international community in minimal but globally uniform international regulation. The LOS Convention safeguards the latter interest by only allowing unilateral coastal state prescription in a few situations.<sup>44</sup> The regional bodies or groupings of states that never-

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44. See *infra* subsection IV(D)(1)(b).

theless exercise prescriptive or enforcement jurisdiction over vessel-source pollution commonly do this in their capacities as flag or port states.<sup>45</sup> For instance, Annex IV, titled “Prevention of Marine Pollution” of the Environmental Protocol to the Antarctic Treaty<sup>46</sup> is largely a flag state approach<sup>47</sup> and regional agreements on port state control, such as the Paris Memorandum of Understanding (MOU)<sup>48</sup> and the Tokyo MOU,<sup>49</sup> are examples of a port state approach.

The IMO bodies of most relevance to this article are the Marine Environment Protection Committee (MEPC), the Maritime Safety Committee (MSC), and the latter’s Sub-Committee on Navigation (NAV), its Sub-Committee on Design and Equipment (DE), and its Sub-Committee on Radiocommunications and Search and Rescue (COMSAR). Amendments to MARPOL 73/78<sup>50</sup> are adopted by the MEPC, and amendments to SOLAS 74 by the MSC. The MEPC also has a coordinating role in relation to particularly sensitive sea areas (PSSAs) and the MSC has the authority to adopt mandatory ships’ routing systems and VTS pursuant to SOLAS 74 and COLREG 72.<sup>51</sup> Proposals for many of the associated protective measures (APMs) that are made applicable within PSSAs are first discussed in the NAV. After its revision of the 2002 IMO Arctic Shipping Guidelines<sup>52</sup> culminated in the 2009 IMO Polar Shipping

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45. LOS Convention, *supra* note 14, art. 211(3) (acknowledging the right of port states to prescribe, individually or in concert, more stringent standards than generally accepted international rules and standards (GAIRAS)).

46. Protocol on Environmental Protection to the Antarctic Treaty; Annexes I-IV, Madrid, Oct. 4, 1991. In force Jan. 14, 1998; Annex V (adopted as Recommendation XVI-10), Bonn, Oct. 17, 1991. In force May 24, 2002; Annex VI (adopted as Measure 1(2005)), Stockholm, June 14, 2005. Not in force. All texts available at Secretariat of the Antarctic Treaty, [www.ats.aq](http://www.ats.aq) (last visited Jan. 7, 2010).

47. *Cf.* art. 2 of Annex IV; *see also infra* note 139-140 and accompanying text (acts of the OSPAR Commission).

48. Paris Memorandum of Understanding on Port State Control, *entry into force* July 1, 1982, *available at* <http://www.parismou.org/upload/PSCC/MOU,%20incl.%2031st%20%20Amendment.pdf> (as regularly amended).

49. Tokyo Memorandum of Understanding on Port State Control in the Asia-Pacific Region, *entry into force* Apr. 1, 1994, *available at* <http://www.tokyo-mou.org/memorand.pdf> (as regularly amended).

50. International Convention for the Prevention of Pollution from Ships, Nov. 2, 1973, 1340 U.N.T.S. 61 [hereinafter MARPOL 73/78] (as modified by the 1978 Protocol (June 1, 1978) and the 1997 Protocol (Sept. 26, 1997) and as regularly amended). Entry into force varies for each Annex. At the time of writing, Annexes I through VI were all in force. IMO, International Convention for the Prevention of Pollution from Ships, [http://www.imo.org/Conventions/mainframe.asp?topic\\_id=258](http://www.imo.org/Conventions/mainframe.asp?topic_id=258) (last visited Oct. 11, 2009). At the 58th Session in Oct. 2008, the MEPC adopted a revised Annex VI and its associated NOx Technical Code. *Id.* These will enter into force on July 1, 2010 in accordance with the tacit amendment procedure. *Id.*

51. Convention on the International Regulations for Preventing Collisions at Sea, Oct. 20, 1972, 1050 U.N.T.S. 16 [hereinafter Convention for Preventing Collisions] (in force July 15, 1977; as regularly amended).

52. *See* IMO, *Guidelines for Ships Operating in Polar Waters*, *supra* note 11.

Guidelines, DE was charged with developing a mandatory Code for ships operating in polar waters.<sup>53</sup>

Of the Arctic Council bodies, the efforts of the PAME and the Emergency, Prevention, Preparedness and Response (EPPR) working groups are the most relevant to this article.

Other international bodies that are relevant include:

- The Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) establishing the OSPAR Commission.<sup>54</sup>
- The joint Norwegian-Russian Federation Commission on Environmental Protection established pursuant to a 1992 bilateral agreement.<sup>55</sup> Its Working Group on Protection of the Marine Environment, established in 2005, has to a certain degree dealt with issues related to transshipment of oil at sea, but not as one of its main themes.<sup>56</sup> Its predecessor, the Working Group on Marine Protection, dealt, among other things, with the implementation of a 1994 bilateral Agreement.<sup>57</sup>
- The Port State Control Committees set up under the Paris and Tokyo MOUs, and
- The International Association of Classification Societies (IACS), in particular on account of its Unified Requirements concerning Polar Class.<sup>58</sup>

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53. See IMO Doc, MSC 86/26, of June 12, 2009, at paras 12.21-12.23 & 23.32-23.34. The 53<sup>rd</sup> Session of DE, scheduled for February 2010, will commence with this task.

54. Convention for the Protection of the Marine Environment of the North-East Atlantic, Sept. 22, 1992 [hereinafter OSPAR Convention], available at [http://www.ospar.org/html\\_documents/ospar/html/OSPAR\\_Convention\\_e\\_updated\\_text\\_2007.pdf](http://www.ospar.org/html_documents/ospar/html/OSPAR_Convention_e_updated_text_2007.pdf) (in force Mar. 25, 1998); *id.*, Annex V (in force Aug. 30, 2000).

55. Agreement Between the Governments of the Kingdom of Norway and the Russian Federation on Cooperation in Environmental Matters, Nor.-Russ., Sept. 3, 1992 [hereinafter Cooperation in Environmental Matters, Nor.-Russ.]; NOR. MINISTRY OF FOREIGN AFFAIRS, OVERENSKOMSTER MED FREMMEDE MAKTER 1,532-35 (Oslo 1992). This agreement replaces a narrower 1988 under the same name (but between Norway and the Soviet Union. See also Olav S. Stokke, *Sub-regional Cooperation and Protection of the Arctic Marine Environment: The Barents Sea* in PROTECTING THE POLAR MARINE ENVIRONMENT – LAW AND POLICY FOR POLLUTION PREVENTION 124, 125. (D. Vidas ed., Cambridge Univ. Press 2000).

56. KOIVUROVA & MOLENAAR, INTERNATIONAL GOVERNANCE, *supra* note 6, at 25.

57. *Id.*

58. Int'l Ass'n of Classification Soc'ys (IACS), *Requirements for Polar Class*, Oct. 2007 (Corr.1) [hereinafter IACS, Unified Requirements], available at [http://www.iacs.org.uk/document/public/Publications/Unified\\_requirements/PDF/UR\\_I\\_pdf410.pdf](http://www.iacs.org.uk/document/public/Publications/Unified_requirements/PDF/UR_I_pdf410.pdf) (concerning unified requirements for "Polar Class Descriptions and Application," "Structural

#### D. International Instruments

##### 1. LOS Convention

Most of the LOS Convention's provisions on vessel-source pollution are laid down in its Part XII, entitled "Protection and Preservation of the Marine Environment." This part begins with Section 1, entitled "General Provisions" and applies to all sources of pollution. Its first provision, Article 192, lays down the general obligation for all states, in whatever capacity therefore, "to protect and preserve the marine environment." This is elaborated in Article 194 with regard to measures to prevent, reduce and control pollution of the marine environment, aimed specifically at vessel-source pollution in paragraph (3)(b). Other relevant general obligations relate to rare or fragile ecosystems and the habitat of endangered species<sup>59</sup>, introduction of alien species<sup>60</sup>, co-operation on a global or regional basis<sup>61</sup>, contingency plans against pollution<sup>62</sup>, monitoring of the risks or effects of pollution<sup>63</sup>, and assessment of potential effects of activities.<sup>64</sup> Sections 5 and 6 contain separate provisions on prescription and enforcement for each of the sources of pollution.<sup>65</sup>

The jurisdictional framework relating to vessel-source pollution laid down in the LOS Convention is predominantly aimed at flag and coastal states. Apart from one explicit provision (Article 218), port state jurisdiction is only implicitly dealt with (see further below). As a general rule, prescriptive jurisdiction by flag and coastal states is linked by means of rules of reference to the notion of

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Requirements for Polar Class Ships," and "Machinery Requirements for Polar Class Ships"). Mention should be made of initiatives of individual classification societies such as the AMERICAN BUREAU OF SHIPPING (ABS), GUIDE FOR VESSELS OPERATING IN LOW TEMPERATURE ENVIRONMENTS (Oct. 2008), *available at* [http://www.eagle.org/eagleExternalPortalWEB/ShowProperty/BEA%20Repository/Rules&Guides/Current/151\\_VesselsOperatinginLowTemperatureEnvironments/Pub151\\_LTE\\_Guide\\_Dec08](http://www.eagle.org/eagleExternalPortalWEB/ShowProperty/BEA%20Repository/Rules&Guides/Current/151_VesselsOperatinginLowTemperatureEnvironments/Pub151_LTE_Guide_Dec08) (updated in Dec. 2008), as well as the joint initiatives between ABS and the Russian Maritime Register of Shipping (RS) on Arctic LNG (liquid natural gas) carriers, *see* Press Release, ABS, Joint Training of Surveyors for Arctic LNG Carriers Initiated by ABS and RS (Oct. 13, 2008), *available at* [http://www.eagle.org/eagleExternalPortalWEB/appmanager/absEagle/absEagleDesktop?\\_nfpb=true&\\_windowLabel=newControllerPortlet\\_1&newControllerPortlet\\_1\\_actionOverride=/externalportal/portlets/news/showDetails&newControllerPortlet\\_1nodePath=/BEA+Repository/News+%26+Events/Press+Releases/2008/13Oct2008&\\_pageLabel=ab\\_eagle\\_portal\\_news\\_listings\\_page](http://www.eagle.org/eagleExternalPortalWEB/appmanager/absEagle/absEagleDesktop?_nfpb=true&_windowLabel=newControllerPortlet_1&newControllerPortlet_1_actionOverride=/externalportal/portlets/news/showDetails&newControllerPortlet_1nodePath=/BEA+Repository/News+%26+Events/Press+Releases/2008/13Oct2008&_pageLabel=ab_eagle_portal_news_listings_page).

60. *Id.* art. 194(5).

61. *Id.* art. 196.

62. *Id.* art. 197.

63. *Id.* art. 199.

64. *Id.* art. 204.

65. *Id.* art. 206.

66. *Id.* art. 207-22.

“generally accepted international rules and standards” (GAIRAS). These refer to the technical rules and standards laid down in instruments adopted by regulatory organizations, in particular IMO. It is likely that the rules and standards laid down in legally binding IMO instruments that have entered into force can at any rate be regarded as GAIRAS.<sup>66</sup> The LOS Convention stipulates that flag state prescriptive jurisdiction over vessel-source pollution is mandatory and must have at least the same level as GAIRAS.<sup>67</sup> Flag states can therefore choose to require their vessels to comply with more stringent standards than GAIRAS, for instance by implementing the IMO Polar Shipping Guidelines in their legislation. Conversely, coastal state prescriptive jurisdiction over vessel-source pollution is optional under the LOS Convention but, if exercised, cannot be more stringent than the level of GAIRAS.<sup>68</sup> This is the general rule even though it is subject to some exceptions (see below).

The general rule is also applicable to marine areas where the regime of transit passage laid down in Part III, Section 2 of the LOS Convention applies.<sup>69</sup> This regime was developed for narrow straits that would no longer have a high seas corridor once the strait states would extend the breadth of their territorial seas to 12 nautical miles (nm). The applicability of the regime of transit passage is nevertheless dependent on various conditions. One of these is laid down in Article 37 and is of particular relevance for this article because it stipulates that the regime of transit passage only applies to “straits which are used for international navigation.”<sup>70</sup> Canada and the Russian Federation appear to interpret these words as requiring an actual degree of usage while rejecting potential usage and thereby conclude that the Northwest Passage and the Northern Sea Route are not subject to the regime of transit passage.<sup>71</sup> Assuming that climate change may soon allow increasing actual usage - provided Canada and the Russian Federation do not impede this - such an interpretation could be relied on less and less. The United States regards the Northwest Passage and parts of the Northern Sea Route as straits used for international naviga-

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66. ERIK JAAP MOLENAAR, COASTAL STATE JURISDICTION OVER VESSEL-SOURCE POLLUTION 140-67 (1998) [hereinafter MOLENAAR, COASTAL STATE JURISDICTION].

67. LOS Convention, *supra* note 14, art. 211(2).

68. *See id.* arts. 21(2), 39(2), 211(5).

69. *Id.* arts. 41, 42(1)(a)-(b).

71. LOS Convention, *supra* note 14, art. 37.

71. *See, e.g.*, DONALD R. ROTHWELL, THE POLAR REGIONS AND THE DEVELOPMENT OF INTERNATIONAL LAW 189-212 (1996); ERIK JAAP MOLENAAR, COASTAL STATE JURISDICTION OVER VESSEL-SOURCE POLLUTION 306 (1998).

tion subject to the regime of transit passage.<sup>72</sup> States with large fleets engaged in international shipping, in particular those relatively near the Arctic, such as China, Japan, Norway, South Korea, and several EU Member States, are likely to share this view. Strangely enough, the European Commission's Arctic Communication fails to articulate a clear position.<sup>73</sup>

a. General Exceptions

The abovementioned general rule only relates to pollution of the marine environment by vessels. The term "pollution of the marine environment" is defined in Article 1(1)(4) of the LOS Convention as:

the introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities.

As neither anchoring nor discharges of ballast water seem to fall within this definition, the above-mentioned restriction on coastal state jurisdiction over vessel-source pollution does not apply either. As regards anchoring, this view seems to be supported by the practice of the United States in regulating anchoring beyond its territorial sea without seeking IMO approval and without any apparent objection by other states. In pursuing this practice, the United States apparently relies on its sovereign rights as a coastal state over resources.<sup>74</sup> As regards ballast water dis-

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72. See Press Release, White House, Arctic Region Policy: National Security Presidential Directive and Homeland Security Presidential Directive, § III.B.5. (Jan. 9, 2009), available at <http://georgewbush-whitehouse.archives.gov/news/releases/2009/01/20090112-3.html>; see also *infra* note 144 and accompanying text.

73. See generally *Communication from the Commission to the European Parliament and the Council on the European Union and the Arctic Region*, COM (2008) 763 final (Nov. 20, 2008). See also *id.* at 8 (mentioning the need to "defend the principle of freedom of navigation and the right of innocent passage in the newly opened routes and areas" without referring to the more liberal regime of transit passage). Conversely, the Council of the EU (2985<sup>th</sup> Foreign Affairs Council meeting, Dec. 8, 2009) "Conclusions on Arctic issues" refer explicitly to transit passage in para. 16.

74. See generally MOLENAAR, COASTAL STATE JURISDICTION OVER VESSEL-SOURCE POLLUTION, *supra* note 71, at 416-18 (probably primarily in relation to the EEZ pursuant to art. 56 of the LOS Convention, but art. 77 may also provide a basis in relation to the (outer) continental shelf).

charges, the above view is supported by the fact that instead of an Annex to MARPOL 73/78, the IMO decided to deal with ballast water management in a stand-alone treaty, namely the BWM Convention.<sup>75</sup> Moreover, the BWM Convention allows states individually or in concert to regulate more stringently above the minimum ballast water exchange level laid down in the Convention.<sup>76</sup>

More stringent standards can also be adopted for special areas pursuant to Article 211(6) of the LOS Convention. But as this requires, at any rate, IMO approval, it gives coastal states no unilateral prescriptive authority. The PSSA Guidelines<sup>77</sup> developed by IMO also implement Article 211(6)<sup>78</sup> and are clearly inspired by, and consistent with, that provision. It should also be realized that PSSA status is not a precondition for obtaining the majority of possible APMs. For instance, mandatory ships' routing measures, SRSs or VTS can be made applicable to the maritime zones of a coastal state upon its request by means of IMO approval.

#### b. Unilateral Coastal State Prescription

There are two exceptions to the above-mentioned general rule. First, a coastal state is entitled to prescribe more stringent (unilateral) standards for the territorial sea, provided they "shall not apply to the design, construction, manning or equipment of foreign ships unless they are giving effect to generally accepted international rules or standards."<sup>79</sup> The rationale of this provision is to safeguard the objective of "uniformity in the regulation of international shipping," which would be undermined if states unilaterally prescribe standards that have extra-territorial effects.<sup>80</sup> Unilateral fuel requirements affect this objective for the reason that compliance seems to require substantial and costly adjustments to vessels. Such requirements should therefore be treated analogous with CDEM standards.<sup>81</sup> The exception provided by this provision does not apply in marine areas where the regime of transit passage

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75. International Convention for the Control and Management of Ships' Ballast Water and Sediments, Feb. 13, 2004, IMO Doc. BWM/CONF/36 [hereinafter BWM Convention], available at <http://www.ecolex.org/server2.php/libcat/docs/multilateral/en/TRE001412.pdf> (not in force).

76. Cf. *id.* art. 2(3) & Annex, section C. See IMO, BWM Convention, *supra* note 108; *infra* note 103 and accompanying text.

77. *Revised Guidelines for the Identification and Designation of Particularly Sensitive Sea Area*, IMO A 24/Res. 982 (Dec. 1, 2005) [hereinafter *PSSA Guidelines*].

78. *Id.* ¶ 7.5.2.3(iii).

79. LOS Convention, *supra* note 14, art. 21(2).

81. See Erik Jaap Molenaar, *Port State Jurisdiction: Toward Comprehensive, Mandatory and Global Coverage*, 38 OCEAN DEV. & INT'L L. 225, 250 n.50 (2007).

81. *Id.*

laid down in Part III, Section 2 of the LOS Convention applies.<sup>82</sup>

A second exception is laid down in Article 234 of the LOS Convention. It is entitled “Ice-covered areas” and provides:

Coastal States have the right to adopt and enforce non-discriminatory laws and regulations for the prevention, reduction and control of marine pollution from vessels in ice-covered areas within the limits of the exclusive economic zone, where particularly severe climatic conditions and the presence of ice covering such areas for most of the year create obstructions or exceptional hazards to navigation, and pollution of the marine environment could cause major harm to or irreversible disturbance of the ecological balance. Such laws and regulations shall have due regard to navigation and the protection and preservation of the marine environment based on the best available scientific evidence.<sup>83</sup>

Article 234 was included in the LOS Convention as a result of, in particular, the efforts of Canada, which sought to ensure that its 1970 Arctic Waters Pollution Prevention Act (AWPPA)<sup>84</sup> and underlying regulations and orders<sup>85</sup> would no longer be regarded as inconsistent with international law.<sup>86</sup> Article 234 gives coastal states broad prescriptive and enforcement jurisdiction in ice-covered areas, even though for a limited purpose and subject to several restrictions.<sup>87</sup> One such restriction follows from the words “for most of the year.”<sup>88</sup> However, decreasing ice-coverage means that fewer states will be able to rely on Article 234 in fewer areas. In addition to Canada, the Russian Federation also relies on Article 234 for prescribing standards that are more stringent than GAIKAS. The LOS Convention gives no guidance as to whether the regime of transit passage trumps the regime of Article 234 or vice

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83. *See id.*; *see also* LOS Convention, *supra* note 14, arts. 37-43.

84. LOS Convention, *supra* note 14, art. 234.

84. Arctic Waters Pollution Prevention Act, R.S.C. 1985, c. A-12 (1970) (Can.), available at <http://laws.justice.gc.ca>.

85. *See* Arctic Shipping Pollution Prevention Regulations, C.R.C. c. 353 (Can.), and a range of other regulations and Orders, available at <http://laws.justice.gc.ca>.

86. *See* Rob Huebert, *Article 234 and Marine Pollution Jurisdiction in the Arctic*, in *THE LAW OF THE SEA AND POLAR MARITIME DELIMITATION AND JURISDICTION*, 249-67, 249 (Alex G. Oude Elferink & Donald R. Rothwell eds., Martinus Nijhoff Publishers 2001).

87. MOLENAAR, COASTAL STATE JURISDICTION OVER VESSEL-SOURCE POLLUTION, *supra* note 71, at 419-21.

88. LOS Convention, *supra* note 14, art. 234 (some of the elements of this article could be regarded as an interpretation of the spatial scope of the IMO Polar Shipping Guidelines).

versa,<sup>89</sup> but the views of Canada and the Russian Federation can be expected to be the opposite of the views of the United States, other relevant states, and the EU.<sup>90</sup> Analyses by commentators of relevant legislation and enforcement by Canada and the Russian Federation indicate that navigation in the parts of the Northwest Passage and the Northern Sea Route that are within national jurisdiction is much more constrained than elsewhere.<sup>91</sup> As usage of the Northern Sea Route by foreign vessels is scarce, it is difficult to determine the precise scope and extent of the latter legislation.

### c. Port State Jurisdiction

It was already stated above that port state jurisdiction is only explicitly referred to in Article 218. This innovative provision gives a port state enforcement jurisdiction over illegal discharges beyond its own maritime zones, namely the high seas and the maritime zones of other states.

More generally, however, the point of departure for port state jurisdiction is that as ports lie wholly within a state's territory and fall on that account under its territorial sovereignty, customary international law acknowledges a port state's wide discretion in exercising jurisdiction over its ports. This was explicitly stated by the International Court of Justice (ICJ) in the *Nicaragua* case where it observed that it is "by virtue of its sovereignty, that the coastal State may regulate access to its ports."<sup>92</sup> While there may often be a presumption that access to port will be granted, customary international law gives foreign vessels no general right of access to ports.<sup>93</sup> Articles 25(2), 211(3) and 255 of the LOS Convention implicitly confirm the absence of a right of access for foreign vessels to ports as well as the port state's wide discretion in exer-

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89. MOLENAAR, COASTAL STATE JURISDICTION OVER VESSEL-SOURCE POLLUTION, *supra* note 71, at 289-90, 307.

90. See Donald McRae, *An Arctic Agenda for Canada and the United States*, in CANADA-US PROJECT, BACKGROUND PAPERS FROM CORRECT TO INSPIRED: A BLUEPRINT FOR CANADA-US ENGAGEMENT UNDER A NEW ADMINISTRATION 156-164, 157 (Carleton University 2009), available at <http://www.carleton.ca/ctpl/conferences>.

91. E.g. VANDERZWAAG, ET AL., *supra* note 7, at 49-67, 72; Rothwell, *supra* note 71, at 189-212; Huebert, *supra* note 86; Tymchenko, *supra* note 12; MOLENAAR, COASTAL STATE JURISDICTION OVER VESSEL-SOURCE POLLUTION, *supra* note 71, at 421-25; R.D. Brubaker, *Jurisdiction Governing the Straits in Russian Arctic Waters* (INSROP Working Paper No. 52-1996, IV.3.1, 1996); R.D. Brubaker, *THE RUSSIAN ARCTIC STRAITS* (2005); ERIK FRANCKX, *MARITIME CLAIMS IN THE ARCTIC: CANADIAN AND RUSSIAN PERSPECTIVES* (1993).

92. *Military and Paramilitary Activities (Nicar. v. U.S.)* 1986 I.C.J. 14, 111, ¶ 213 (June 27).

93. Cf. A.V. Lowe, *The Right of Entry into Maritime Ports in International Law*, 14 SAN DIEGO L. REV. 597, 597-98 (1977) (suggesting that no right of entry has been established in customary international law).

cising jurisdiction under customary international law.<sup>94</sup> A port state's residual jurisdiction, namely, its competence to prescribe more stringent standards than those agreed to within competent international organizations such as the IMO, is not affected by adherence to IMO instruments as such. The implications of international trade law on a port state's residual jurisdiction are unclear, however. Finally, the legality or justifiability of extra-territorial port state jurisdiction "depends not only on a sufficient jurisdictional basis but also on the type of enforcement action taken."<sup>95</sup> Most importantly, international law only very rarely authorizes port states to impose enforcement measures that are more stringent than denial of access or use of port (services) for extra-territorial behavior. Article 218 of the LOS Convention is one of these instances.

In the context of this article, port states within or beyond the Arctic marine area could, for example, deny access to certain types of ships or impose conditions for entry into port that are more stringent than GAIRAS, for instance by incorporating the IMO Polar Shipping Guidelines into their legislation.<sup>96</sup>

## 2. IMO Instruments

### a. Discharge and Emission Standards

MARPOL 73/78<sup>97</sup> and the BWM Convention<sup>98</sup> are the only IMO instruments that contain discharge and emission standards. The Annexes to MARPOL 73/78 contain discharge standards for oil (Annex I), noxious liquid substances (Annex II), sewage (Annex IV) and garbage (Annex V), and emission standards for ozone depleting substances, nitrogen oxides (NOx), sulphur oxides (SOx) and volatile organic compounds (VOCs) (Annex VI). Annexes I, II and V make use of so-called "special areas" where more stringent discharge standards apply.<sup>99</sup> Annex VI currently uses so-called "SOx Emission Control Areas," but this will be broadened with "particulate matter" and NOx.<sup>100</sup> Rather than emission standards, SOx

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94. LOS Convention, *supra* note 14, arts. 25(2), 211(3) & 255.

95. Molenaar, *Port State Jurisdiction*, *supra* note 80, at 246.

96. In view of the definitions for "port state" and "coastal state" in subsection IV(A), jurisdiction based on Art. 234 is regarded as coastal state jurisdiction.

97. See *supra* note 66 and accompanying text.

98. See *supra* note 75 and accompanying text.

99. See also the proposal in IMO Doc. MEPC 60/6/3, of Dec. 17, 2009, to introduce special areas for the purpose of Annex IV (sewage).

100. See MOLENAAR, COASTAL STATE JURISDICTION OVER VESSEL-SOURCE POLLUTION, *supra* note 66.

Emission Control Areas have maximum limits of the sulphur content in fuel and requirements relating to exhaust gas cleaning systems, which should either be regarded as CDEM standards or must be treated as analogous with them. No part of the Arctic marine area currently falls within either a special area or a SOx Emission Control Area. By contrast, the Antarctic area has been designated as a special area under Annexes I, II and V and the special discharge standards therein are currently also in effect.<sup>101</sup> Specific criteria and procedures have been developed for the designation of special areas and SOx Emission Control Areas.<sup>102</sup>

The BWM Convention stipulates that vessels using the ballast water exchange method should not discharge ballast water within 200 nm from the nearest land or in waters less than 200 meters deep and must meet an efficiency of at least 95% volumetric exchange.<sup>103</sup> It has also been noted above that the BWM Convention allows states individually or in concert to regulate more stringently above this minimum level.

#### b. CDEM Standards

CDEM standards are contained in many of the main legally binding IMO instruments, in particular SOLAS 74<sup>104</sup> and STCW 78.<sup>105</sup> The well-known double-hull standard, which was triggered by the *Exxon Valdez* disaster in 1989, is laid down in Annex I to MARPOL 73/78.<sup>106</sup> It was also mentioned above that the fuel content requirements in Annex VI to MARPOL 73/78 (within and beyond SOx Emission Control Areas) and the ballast water treatment requirements in the BWM Convention must be regarded as, or treated analogous with, CDEM standards. A similar argument could be made for prescriptions on the use of certain paints or coat-

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101. MOLENAAR, COASTAL STATE JURISDICTION OVER VESSEL-SOURCE POLLUTION, *supra* note 66, at 434. Cf. ØYSTEIN JENSEN, THE IMO GUIDELINES FOR SHIPS OPERATING IN ARCTIC ICE-COVERED WATERS: FROM VOLUNTARY TO MANDATORY TOOL FOR NAVIGATION SAFETY AND ENVIRONMENTAL PROTECTION? 10 (Fridtjof Nansen Inst. & WWF Nor. 2007), available at <http://www.fni.no/doc&pdf/FNI-R0207.pdf> (indicating on page ten that an earlier draft of what was to become the IMO Arctic Shipping Guidelines envisaged the Arctic to be designated as a special area under one or more Annexes of MARPOL 73/78).

102. See IMO, *Guidelines for the Designation of Special Areas under MARPOL 73/78 and Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas*, IMO A 22/Res. 927 (Nov. 29, 2001); MARPOL 73/78, *supra* note 50, Annex VI, App. III (on SOx Emission Control Areas).

103. IMO, BWM Convention, *supra* note 108, Regs. B-4 & D-1.

104. SOLAS 74, *supra* note 13.

105. International Convention on Standards of Training, Certification and Watchkeeping for Seafarers, Dec. 1, 1978, 1361 U.N.T.S. 2 (in force April 28, 1984, as amended and modified by the 1995 Protocol).

107. MARPOL 73/78, *supra* note 50, Annex I.

ings pursuant to the Anti-Fouling Convention.<sup>107</sup>

The IMO Arctic Shipping Guidelines contain only CDEM standards and no discharge, emission, navigation or contingency<sup>108</sup> standards, or liability or insurance requirements. The Polar Shipping Guidelines are in general more elaborate and extensive than the Arctic Shipping Guidelines, for instance in relation to life-saving appliances. The Polar Shipping Guidelines will follow the definition of ‘ship’ used in SOLAS 74<sup>109</sup> and apply to all voyages in Antarctic waters but as regards Arctic waters only to international voyages. The linkage with the IACS Unified Requirements concerning Polar Class is at least as strong and,<sup>110</sup> like the Arctic Shipping Guidelines, it contains mostly CDEM standards.

### c. Navigation Standards

In subsection 4.2 above, the category of navigation standards includes ships’ routing measures, SRSs and VTS. These navigation standards can be adopted by the MSC based on their authority under SOLAS 74 and COLREG 72.<sup>111</sup> As regards ships’ routing measures, reference should be made to the General Provisions on Ships’ Routing.<sup>112</sup> Examples of routing measures are: traffic separations schemes, deep-water routes, precautionary areas, areas to be avoided and no anchoring areas. Apart from the regulation of anchoring for the purpose of the conservation of living resources, the LOS Convention does not authorize coastal states to adopt mandatory navigation standards seaward of its territorial sea. In 1998, the General Provisions on Ships’ Routing were

107. International Convention on the Control of Harmful Anti-fouling Systems on Ships, Oct. 5, 2001, IMO Doc. AFS/CONF/26, available at <http://www.uscg.mil/hq/cg5/cg522/cg5224/docs/Antifouling.pdf> (in force Sept. 17, 2008).

108. IMO, *Guidelines for the Structure of an Integrated System of Contingency Planning for Shipboard Emergencies*, IMO A 20/Res. 852, ¶13.3.1 (Nov. 27, 1997) [hereinafter IMO, *Guidelines for the Structure of an Integrated System*] (requiring operating manuals to conform to resolution).

109. Which excludes, for instance, fishing and cargo vessels below a certain size or length and all naval vessels.

110. See, e.g., Polar Shipping Guidelines, paras P-2.8, 1.1.4, 2.2.1 & 7.1.1.

111. Convention for Preventing Collisions, *supra* note 51.

112. IMO, *General Provisions on Ships’ Routing*, IMO A 14/Res/ 572 (Nov. 20, 1985). Amended, among other things, by Resolution MSC.71(69), Resolution MSC.165(78) and Resolutions adopted by MSC 70, MSC 73, MSC 79 and MSC 85. See IMO, *Amendments to the General Provisions on Ships’ Routing*, IMO Doc. SN/Circ.204 (Jan. 8, 1999), available at [http://www.imo.org/includes/blastDataOnly.asp/data\\_id%3D1894/204.PDF](http://www.imo.org/includes/blastDataOnly.asp/data_id%3D1894/204.PDF); IMO, *Amendments to the General Provisions on Ships’ Routing*, IMO Doc. SN/Circ.215 (Jan. 19 2001), available at [http://www.imo.org/includes/blastDataOnly.asp/data\\_id%3D1903/215.pdf](http://www.imo.org/includes/blastDataOnly.asp/data_id%3D1903/215.pdf); IMO, *Amendments to the General Provisions on Ships’ Routing*, IMO Doc. SN/Circ.241 (Dec. 14, 2004), available at [http://www.imo.org/includes/blastDataOnly.asp/data\\_id%3D10924/241.pdf](http://www.imo.org/includes/blastDataOnly.asp/data_id%3D10924/241.pdf); and IMO Doc. SN/Circ.275 (Dec. 10, 2008).

amended by adding Annex 2 entitled “General Provisions for the Adoption, Designation and Substitution of Archipelagic Sea Lanes” (ASLs Provisions).<sup>113</sup> Archipelagic sea lanes are thereby essentially equated with ships’ routeing systems.

While it is likely that there are currently several IMO navigation standards that apply within the Arctic marine area, it is not possible to provide an overview of these in the context of this article. However, it is clear that there is no comprehensive mandatory or voluntary IMO ships’ routeing system for the Arctic marine area in its entirety or a large part thereof. So far, the Arctic marine area or the Arctic Ocean may not have been viewed or addressed as a unity for shipping. Arguably, the imminent significant expansion of Arctic marine shipping makes such an approach necessary. It is submitted that the routes described in section II above, which show possible future shipping routes of the Arctic marine area, resemble somewhat archipelagic sea lanes established pursuant to Article 53 of the LOS Convention.<sup>114</sup> The procedure laid down in this provision—implemented by Annex 2 to the IMO General Provisions on Ships’ Routeing—may be suitable as a model for submitting an “Arctic Sea Lanes” proposal to IMO. The circumstance that some sea lanes may be situated in the high seas would not seem to be a problem as such.<sup>115</sup>

#### d. Contingency Standards

The contingency standards adopted within IMO are mainly laid down in OPRC 90<sup>116</sup> and its 2000 HNS Protocol.<sup>117</sup>

#### e. Liability and Insurance Requirements

The liability and insurance requirements adopted within IMO are those laid down in the 1969 Civil Liability Convention,<sup>118</sup> the

113. IMO, *Adoption of Amendments to the General Provisions on Ships’ Routeing (Resolution A 14/Res. 572)*, Res. MSC.71(69) (May 19, 1998).

115. LOS Convention, *supra* note 14, art. 53.

115. Note that ¶ 3.11, 3.14 and 3.16 of the IMO General Provisions on Ships’ Routeing only provide exceptions for routeing systems “no part of which lies beyond their territorial sea” or in straits used for international navigation. See IMO, *General Provisions on Ships’ Routeing*, *supra* note 112. See also MOLENAAR, COASTAL STATE JURISDICTION, *supra* note 95, at 526-28 (observing the role accorded to IMO under the LOS Convention).

116. IMO, International Convention on Oil Pollution Preparedness, Response and Co-operation, 1990, Nov. 30, 1990, 30 I.L.M. 733 (1991) (in force May 13, 1995).

117. IMO, Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances, Mar. 15, 2000, IMO Doc. HNS-OPRC/CONF/11/Rev.1 (in force June 14, 2007); see also IMO, *Guidelines for the Structure of an Integrated System*, *supra* note 108.

118. IMO, International Convention on Civil Liability for Oil Pollution Damage,

1971 Fund Convention<sup>119</sup> (each modified by several protocols), the 1996 HNS Convention,<sup>120</sup> and the 2001 Bunker Oil Convention.<sup>121</sup>

f. PSSA Guidelines

Designation of an area as a PSSA pursuant to the PSSA Guidelines<sup>122</sup> does not bring about regulation of shipping within that area as such. This requires adoption of one or more APMs. Attention can in this context be drawn to the possibility to have special discharge standards within PSSAs (other than by means of designation as special area under MARPOL 73/78) and “other measures aimed at protecting specific sea areas against environmental damage from ships, provided that they have an identified legal basis.”<sup>123</sup> Innovative standards are therefore not ruled out.

g. Other

Reference should also be made to IMO Assembly Resolution A.999(25), Guidelines on voyage planning for passenger ships operating in remote areas,<sup>124</sup> that was adopted a week after the tragic sinking of the *MS Explorer*, a purpose-built, ice-strengthened tourist vessel originally named *MS Lindblad Explorer*, on November 23, 2007 in Antarctic waters. IMO Assembly Resolution A.999(25) complements the more general IMO Assembly Resolution A.893(21), Guidelines for voyage planning.<sup>125</sup> Resolution A.999(25) refers, *inter alia*, to the need to take account of shortcomings in available hydrographic data, the presence of places of

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Brussels, Nov. 29, 1969, 9 I.L.M. 45 (1970) (in force June 19, 1975).

119. IMO, International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, Dec. 18, 1971, 11 I.L.M. 284 (1972) (in force Oct. 16, 1978).

120. IMO, International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, May 3, 1996, 35 I.L.M. 1406 (1996) (not in force).

121. International Convention on Civil Liability for Bunker Oil Pollution Damage, London, Mar. 23, 2001, available at <http://www.official-documents.gov.uk/document/cm66/6693/6693.pdf> (in force Nov. 21, 2008; link is to official British text published by The Stationary Office).

122. *PSSA Guidelines*, supra note 77.

123. *Id.* ¶ 6.1.3.

124. IMO, *Guidelines on Voyage Planning for Passenger Ships Operating in Remote Areas*, IMO A 25/Res. 999 (Nov. 25, 1999). Note that the rationale for adopting the Resolution, as set out in its Preamble, refers to the need to “prevent incidents of groundings and collisions, and thereby enhance safety of life at sea” but not to marine environmental protection. *Id.* preamble.

125. IMO, *Guidelines for Voyage Planning*, IMO A 21/Res. 893 (Nov. 25, 1999) [hereinafter IMO, *Guidelines for Voyage Planning*].

refuge<sup>126</sup> and the need of experience in navigating in ice-covered areas.

Also noteworthy is Regulation V/6 of SOLAS 74 on the Ice Patrol Service and the “Rules for the management, operation and financing of the North Atlantic Ice Patrol” contained in an Appendix to Chapter V.

Finally, in view of the remoteness of the Arctic marine area, particular account should be taken of the requirement for ships to carry an automatic identification system (AIS) under Regulation V/19 of SOLAS 74 and the more recent requirements relating to Long-range identification and tracking of ships (LRIT) under Regulation V/19-1 of SOLAS 74.<sup>127</sup> Regulation V/19-1 not only entitles port states to receive certain information prior to entry into port but also coastal states in relation to ships navigating within a distance of 1000 nm off their coast, subject to some exceptions.<sup>128</sup>

### 3. Arctic Council Instruments

#### a. General

The Arctic Council Members have committed themselves to implementing the Arctic Environmental Protection Strategy (AEPS)<sup>129</sup> in conformity with the LOS Convention.<sup>130</sup> It can be assumed that this also includes respect for the mandate and work of the IMO. In 2000, the Arctic Council adopted the Action Plan to Eliminate Pollution in the Arctic (ACAP) and determined that the ACAP would be a basis for developing and implementing actions under the Council’s auspices with respect to pollution prevention and remediation.

#### b. Output of PAME

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126. See IMO, *Guidelines on Places of Refuge for Ships in Need of Assistance*, IMO A 23/Res. 949 A.949 (23) (Dec. 5, 2003) (adopted in the aftermath of the disaster with the *Prestige* in 2002).

127. Regulation V/19-1 was adopted by Resolution MSC.202(81), and will apply to ships constructed on or after Dec. 31, 2008, with a phased implementation schedule for ships constructed before Dec. 31, 2008. IMO, *Amendments to the International Convention for the Safety of Life at Sea, 1974, as Amended, Chapter V, Safety of Navigation*, Res. MSC 81/25/Add.1, Annex 2 (May 19, 2006), available at [http://www.imo.org/includes/blastDataOnly.asp/data\\_id%3D24228/MSC.202\(81\).pdf](http://www.imo.org/includes/blastDataOnly.asp/data_id%3D24228/MSC.202(81).pdf). The LRIT system is intended to be operational with respect to the transmission of LRIT information by ships from Dec. 30, 2008. See also IMO, *Report of the Maritime Safety Committee on its Eighty-First Session*, Res. MSC 81/25/Add. 1, Annexes 2, 13, 14 (May 19, 2006) [hereinafter IMO, *Report of MSC*].

128. IMO, *Report of MSC*, *supra* note 127, Reg. V/19-1(8.1) MSC 202(81).

129. Arctic Environmental Protection Strategy, June 14, 1991, 30 I.L.M. 1624 (1991).

130. *Id.* introduction, 30 I.L.M. at 1630.

In addition to its efforts in monitoring the IMO Arctic Shipping Guidelines,<sup>131</sup> mention can be made of the Arctic Marine Strategic Plan (AMSP)<sup>132</sup> and the Guidelines for Transfer of Refined Oil and Oil Products in Arctic Waters (TROOPS).<sup>133</sup>

The AMSA Report was released at the Arctic Council Ministerial Meeting in Tromsø, April 2009.<sup>134</sup> It contains a considerable number of Recommendations categorized under the headings “Enhancing Arctic Marine Safety,” “Protecting Arctic People and the Environment” and “Building the Arctic Marine Infrastructure.” The Senior Arctic Officials (SAOs) meeting in Tromsø, April 2009, recommended the Ministerial Meeting later that month to approve the AMSA recommendations, which was done by means of the Tromsø Declaration of 29 April 2009.<sup>135</sup> While it is not surprising that the declaration specifically encouraged, and urged for, further action within IMO, it is interesting to note that SAOs are requested “to develop appropriate follow up actions.”<sup>136</sup> The negotiation-process for an Arctic SAR instrument can be regarded as one of such actions.<sup>137</sup>

c. Output of EPPR

The main products of the EPPR Working Group are

- Arctic Guide for Emergency Prevention, Preparedness and Response (updated annually), containing information on emergency systems and contact points, overview of environmental risks, and applicable agreements.
- Field Guide for Oil Spill Response in Arctic Waters (1998).
- Environmental Risk Analysis of Arctic Activities (1998).
- Circumpolar Map of Resources at Risk from Oil Spills in the Arctic (2002), which includes

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131. See Huebert, *supra* note 86, at 260; see also Jensen, *supra* note 101, at 8-15.

132. ARCTIC COUNCIL, ARCTIC MARINE STRATEGIC PLAN (2004), available at [http://arcticportal.org/uploads/vx/IW/vxIWcyCi\\_7UnSBwZDbPVug/AMSP-Nov-2004.pdf](http://arcticportal.org/uploads/vx/IW/vxIWcyCi_7UnSBwZDbPVug/AMSP-Nov-2004.pdf).

133. ARCTIC COUNCIL, GUIDELINES FOR TRANSFER OF REFINED OIL AND OIL PRODUCTS IN ARCTIC WATERS (2004), available at <http://old.pame.is/sidur/uploads/TROOP%20-%20English%202.pdf>.

134. Available at PAME, Arctic Marine Shipping, <http://www.pame.is/amsa> (last visited Jan. 7, 2010).

135. Available at Arctic Council, <http://arctic-council.org> (last visited Jan. 7, 2010).

136. At p. 4.

137. See *infra* note 160.

“a series of GIS-based circumpolar maps showing areas of highest risk because of sensitive natural resources and subsistence communities.”<sup>138</sup>

- Shoreline Clean-up Assessment Technique (SCAT) Manual (2004).

#### 4. Acts of the OSPAR Commission

While competence for the regulation of shipping lies first of all with the IMO, action under the OSPAR Convention is not entirely precluded. As with fisheries, the OSPAR Commission must first bring questions to the attention of the IMO, if it considers that action is desirable. Contracting Parties who are IMO members must endeavor to cooperate “in order to achieve an appropriate response, including in relevant cases that Organisation’s agreement to regional or local action . . . .”<sup>139</sup> The OSPAR Commission has already taken some supplementary action. This includes for example the adoption of regional voluntary guidelines to reduce the risk of the introduction of non-indigenous species through ships’ ballast water,<sup>140</sup> as an interim measure pending the entry into force of the BWM Convention. These guidelines recommend all vessels that fall within the scope of the BWM Convention entering the North East Atlantic to have a Ballast Water Management Plan, to record all ballast water operations and to exchange ballast water at least 200 nm from the nearest land in water at least 200 meters deep. These voluntary guidelines are recommended for all vessels, including those of non-contracting parties to the OSPAR Convention.

#### 5. Other

Other relevant instruments are:<sup>141</sup>

- The 1983 bilateral agreement between Canada and Denmark,<sup>142</sup> which relates to the preven-

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138. Cf. Timo Koivurova & David L. VanderZwaag, *The Arctic Council at 10 Years: Retrospects and Prospects*, 40 U. BRIT. COLUM. L.REV. 121, 146 n.134 (2007).

139. OSPAR Convention, *supra* note 54, Annex V, art. 4(2).

140. OSPAR Comm’n, *General Guidelines on the Voluntary Interim Application of the D-1 Ballast Water Exchange Standard in the North-East Atlantic*, Summary Record OSPAR 2007, OSPAR 07/24/1-E, Annex 9.

141. See Agreement on Cooperation in the Arctic and the North, Can.-Russ., June 19, 1992, 1884 U.N.T.S. 179 (entered into force Jun. 19, 1992).

142. Agreement for Cooperation Relating to the Marine Environment, Can.-Den., Aug. 26, 1992, 1348 U.N.T.S. 122 (entered into force Aug. 26, 1983).

tion, reduction and control of pollution of the marine environment resulting from activities within the area covered by the agreement, including pollution incidents resulting from shipping.<sup>143</sup>

- The 1988 bilateral agreement between Canada and the United States,<sup>144</sup> by which, *inter alia*, the “Government of the United States pledges that all navigation by U.S. icebreakers within waters claimed by Canada to be internal will be undertaken with the consent of the Government of Canada.”<sup>145</sup>
- The 1992 bilateral agreement between Norway and the Russian Federation<sup>146</sup> pursuant to which the Joint Norwegian-Russian Commission on Environmental Protection operates.
- The 1993 Agreement Between Denmark, Finland, Iceland, Norway and Sweden Concerning Cooperation in Measures to Deal with Pollution of the Sea by Oil or Other Harmful Substances.<sup>147</sup> The Agreement deals with a range of measures, including monitoring maritime zones and abatement in case of pollution incidents.
- The 1994 bilateral Agreement between Norway and the Russian Federation Concerning Cooperation on the Combating of Oil Pollution in the Barents Sea,<sup>148</sup> containing requirements on notification and contingency planning.
- The Joint Contingency Plan of the United States and the Russian Federation on Combating Pollution in the Bering and Chukchi Seas.<sup>149</sup>
- The Canada-United States Joint Marine Contingency Plan,<sup>150</sup> which provides for a coordi-

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143. *Id.* Annex B, art. VII.

144. Agreement on Arctic Cooperation, Can.-U.S., Jan. 11, 1988, T.I.A.S. No. 11565.

145. *Id.* at ¶3. See also Rothwell, *supra* note 71, at 158-59, 191-96; Kraska, *supra* note 16, at 266-67 (putting this Agreement in the context of marine scientific research).

146. See Cooperation in Environmental Matters, Nor.-Russ., *supra* note 55.

147. Cooperation on Protection of the Sea from Oil Pollution or Other Noxious Substances, Mar. 29, 1993, 2084 U.N.T.S. 283 (in force Jan. 16, 1998).

148. See KOIVUROVA & MOLENAAR, INTERNATIONAL GOVERNANCE, *supra* note 6.

149. See U.S. DEP'T OF AGRIC., NATIONAL RESPONSE PLAN 88 (2004), available at <http://www.usda.gov/documents/NRPallpages.pdf>.

150. *Id.*

nated system for planning, preparedness, and responding to harmful substance incidents in the contiguous waters of Canada and the United States. This plan is supported by five geographic annexes.

- The Basel Convention.<sup>151</sup>
- IACS Unified Requirements concerning Polar Class, which complement the IMO Arctic and Polar Shipping Guidelines and other relevant IMO instruments.<sup>152</sup>
- Port State Control MOUs.

#### V. GAPS IN THE INTERNATIONAL LEGAL AND POLICY FRAMEWORK AND NATIONAL REGULATION AND OPTIONS FOR ADDRESSING THEM

This subsection identifies gaps in the international legal and policy framework and in national regulation relating to Arctic marine shipping in light of current and future threats to the marine environment and marine biodiversity in the Arctic marine area, and options to address these gaps.

##### A. Gaps

Not all Arctic states are parties to relevant international instruments. For instance, the Russian Federation is not a party to OPRC 90. As regards substantive standards or requirements, the international legal framework contains:

- No special IMO discharge, emission or ballast water exchange standards for the Arctic marine area.
- No comprehensive mandatory or voluntary IMO ships' routing system for the Arctic marine area in its entirety or a large part thereof.
- No legally binding special CDEM (including fuel content and ballast water treatment) standards for the Arctic marine area.

These are factual conclusions and do not imply a need to address these in light of threats posed to the marine environment or

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151. U.N. Env't Programme (UNEP), Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, Mar. 22, 1989, UNEP/IG. 80/3, 28 I.L.M. 657 (in force May 5, 1992).

152. See *supra* notes 108-110 and accompanying text.

biodiversity in the Arctic marine area. However, reference can be made here to a commentator who has made several suggestions to address some aspects of the IMO Arctic Shipping Guidelines that are in his view shortcomings.<sup>153</sup>

Regarding the regional agreements on monitoring, contingency planning and preparedness for pollution incidents, it should be noted that these do not cover the entire Arctic marine area and that not all Arctic Ocean coastal states are parties to them. A related gap is the absence of a regional agreement on search and rescue.

In relation to compliance and enforcement, it can also be concluded that there is no regional approach by Arctic states or another group of states specifically aimed at ensuring compliance with applicable international rules and standards and national laws and regulations. It is moreover uncertain to what extent the IMO Arctic Shipping Guidelines and the IACS Unified Requirements concerning Polar Class are complied with by states, ship-owners and operators, crew and IACS members.<sup>154</sup>

### B. Options

This subsection contains various options for adjusting the current international legal framework relating to shipping in the Arctic marine area in case such adjustments are regarded as necessary in view of current or future threats of shipping to the marine environment and marine biodiversity in the Arctic marine area. The options are grouped together as options for action within the IMO; options for Arctic states at the regional level, in their capacities as coastal states; options for Arctic states and other states at the regional level, in their capacities as port states; other options for Arctic states, individually or collectively; and finally, other options for all states, individually or collectively, in their capacities as flag states. While the Arctic Council is not listed as a separate category, some of these options could be pursued there as well, with the important qualification that the output cannot be legally binding.

The following are options for action within the IMO:<sup>155</sup>

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153. Jensen, *supra* note 101, at 15-16.

154. *Id.* at 16-17 (noting that, “[a]s of today, no state has implemented the regulations through binding legislation” and observing that the IACS Unified Requirements for Polar Class allow individual members a margin of discretion which interferes with the goal of uniformity).

155. ARCTIC COUNCIL, ARCTIC MARINE STRATEGIC PLAN, *supra* note 181, at 10; *see also* Ilulissat Declaration, *supra* note 8, at 2 (expressing the commitment by the five Arctic Ocean coastal states to work within IMO).

- Make the IMO Polar Shipping Guidelines mandatory, for instance by incorporating them into SOLAS 74 and complementing them with new elements such as training for ice navigators, which could be incorporated in STCW 78.<sup>156</sup>
- Pursue the adoption of special standards, for instance:
  - Special discharge or emission standards for all or part of the Arctic marine area under MARPOL 73/78.
  - Special fuel content<sup>157</sup> or ballast water treatment standards.<sup>158</sup>
  - One or more mandatory ships' routing systems, whether or not in the form of a comprehensive "Arctic Sea Lanes" proposal.
  - Ship reporting systems.
  - Compulsory pilotage and ice-breaker or tug assistance.
  - Special anti-fouling standards.
- Designate (part of) the Arctic as a PSSA, with a comprehensive package of APMs consisting of one or more of the special standards mentioned above and other special standards such as special ballast water exchange standards.<sup>159</sup>

The following are options for Arctic states at the regional level, in their capacities as coastal states:

- Agree on legally binding agreements on monitoring, contingency planning and preparedness for pollution incidents, as well as on search and rescue (SAR)<sup>160</sup> and places of refuge.

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156. Cf. VANDERZWAAG, *supra* note 7, at 69.

157. See, e.g., ATCM, *Decision 8: "Use of Heavy Fuel Oil"* (June 17, 2005), [http://www.ats.aq/devAS/info\\_measures\\_listitem.aspx?lang=e&id=343](http://www.ats.aq/devAS/info_measures_listitem.aspx?lang=e&id=343); ATCM, *Decision 2: "Ballast Water Exchange: Referral to IMO"* (June 23, 2006), [http://www.ats.aq/devAS/info\\_measures\\_listitem.aspx?lang=e&id=362](http://www.ats.aq/devAS/info_measures_listitem.aspx?lang=e&id=362); ATCM, *Resolution 3: "Ballast Water Exchange in the Antarctic Treaty Area"* (June 23, 2006), [http://www.ats.aq/devAS/info\\_measures\\_listitem.aspx?lang=e&id=365](http://www.ats.aq/devAS/info_measures_listitem.aspx?lang=e&id=365); ATCM, *Annex to Resolution 3: Practical Guidelines for Ballast Water Exchange in the Antarctic Treaty Area* (June 23, 2006), [http://www.ats.aq/documents/recatt/att345\\_e.pdf](http://www.ats.aq/documents/recatt/att345_e.pdf). See also MEPC, *Guidelines for Ballast Water Exchange*, *infra* note 158 (on the subsequent action by IMO); IMO, *Report of the Marine Environmental Protection Committee on its Fifty-Seventh Session*, ¶ 20.16-20.19, IMO Doc. MEPC 57/21 (Apr. 7, 2008) (discussing that the issue of "use and carriage of heavy grade oil (HGO) on ships in the Antarctic area" will be dealt with by the Sub-Committee on Bulk Liquids and Gases (BLG) during its 13th Session in Mar. 2009).

158. See Marine Env't Prot. Comm. [MEPC], *Guidelines for Ballast Water Exchange in the Antarctic Treaty Area*, IMO Doc. MEPC 56/23 (July 13, 2007).

159. *Id.*

160. Reference can be made here to the ongoing negotiation-process on an Arctic SAR instrument within the framework of the Arctic Council. The negotiation-process takes place within a dedicated SAR Task Force that reports to SAOs and that is meant to be completed by the Arctic Council's 2011 Ministerial Meeting. A first meeting of the Task Force took

- Agree on a harmonized approach on enforcement and ensuring compliance, inter alia by means of shared platforms (e.g., “Shiprider Agreements”).<sup>161</sup>
- Implement the BWM Convention individually or in concert.
- Take other action under Article 234 of the LOS Convention, in particular if the IMO Polar Shipping Guidelines are not made mandatory.

The following are options for Arctic states and other states at the regional level, in their capacities as port states:

- Develop a strategy for port state control in the Arctic, for instance by establishing an Arctic MOU on Port State Control or by adjusting the Paris and Tokyo MOUs on port state control to ensure that proper account is taken of intra-Arctic and trans-Arctic marine shipping.
- Implement Article 218 of the LOS Convention in concert.
- Exercise port state residual jurisdiction in concert, relying in part on Article 234 of the LOS Convention, in case the IMO Polar Shipping Guidelines are not made mandatory.

Other options for Arctic states in particular, individually or collectively:

- Address the need for hydrographic surveying and charting.<sup>162</sup>
- Consider the need to develop a regional liability regime.<sup>163</sup>
- Encourage self-regulation by the shipping industry, for instance the cruise industry,<sup>164</sup> by means of positive and negative incentives (e.g., positive discrimination and limiting landings and access to ports to cooperating players).<sup>165</sup>
- Urge IACS to restrict the margin of discretion that individual members have in relation to the IACS Unified Requirements concerning Polar Class.

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place in Washington D.C., Dec. 9-11, 2009 (cf., Final Report of the November 2009 SAOs Meeting, at 6-7).

161. See Erik Jaap Molenaar, *Multilateral Hot Pursuit and Illegal Fishing in the Southern Ocean: The Pursuits of the Viarsa 1 and the South Tomi*, 19 INT'L J. MARINE & COASTAL L. 19, 34-35 (2004).

162. See also ATCM Resolution 5(2008), *supra* note 25.

163. See also Environmental Protocol to the Antarctic Treaty, *supra* note 46, Annex VI.

164. See, e.g., Ass'n of Arctic Expedition Cruise Operators (AECO), <http://www.aeco.no> (last visited Oct. 18, 2009).

165. See also Molenaar, *Sea Borne Tourism in Antarctica*, *supra* note 24, at 47 (providing some suggestions relating to Antarctic sea-borne tourism).

- Require the marine insurance industry to promote compliance with IACS Unified Requirements concerning Polar Class, for instance by linking the level of compliance to the height of premiums.

Other options for all states, individually or collectively, in their capacities as flag states:

- Impose standards on their vessels that are more stringent than GAIRES, such as requiring special discharge, emission and ballast water exchange standards or implementing the IMO Polar Shipping Guidelines into their legislation.

## VI. INTEGRATED, CROSS-SECTORAL ECOSYSTEM-BASED OCEAN MANAGEMENT

So far, this article has approached the regulation of Arctic shipping exclusively by means of a sectoral perspective. The inherent limitations of sectoral approaches to ocean management are increasingly recognized and have led to various non-legally binding commitments to pursue ecosystem-based ocean management at the global level.<sup>166</sup> While there is currently no universally accepted definition for the term “integrated, cross-sectoral ecosystem-based ocean management,”<sup>167</sup> it is nevertheless widely accepted that the different words included in the term indicate a holistic approach which takes due account of spatial dimensions, processes and relationships within ecosystems.<sup>168</sup> It is also submitted that integrated, cross-sectoral, ecosystem-based ocean management operates at a higher hierarchical level than sectoral ecosystem-based management, for instance EAF. Moreover, sectoral ecosystem-based management can also be pursued in the absence of an overarching integrated approach.<sup>169</sup>

While neither the LOS Convention nor any other global instrument contains a legally binding obligation to pursue inte-

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166. *E.g.*, U.N. Econ. & Soc. Council [ECOSOC], Div. of Sustainable Dev., *Johannesburg Plan of Implementation of the World Summit on Sustainable Development*, ¶ 30(d), 32(c) (2002), available at [http://www.un.org/esa/sustdev/documents/WSSD\\_POI\\_PD/English/WSSD\\_PlanImpl.pdf](http://www.un.org/esa/sustdev/documents/WSSD_POI_PD/English/WSSD_PlanImpl.pdf); G.A. Res. 61/222, ¶ 119, U.N. Doc. A/RES/61/222 (Mar. 16, 2007).

167. *Cf.* U.N. GAOR, *Report on the Work of the United Nations Open-ended Informal Consultative Process on Oceans and the Law of the Sea at its Seventh Meeting*, ¶ 6, U.N. Doc. A/61/156 (July 17, 2006) (subsequently listing various elements relating to ecosystem approaches and oceans).

168. *Id.*

169. *See also* Press Release, The White House, Arctic Region Policy, *supra* note 72, III(H)(6)(d) (specifically mentioning the objective of pursuing ecosystem-based management in the section on “Environmental Protection and Conservation of Natural Resources”).

grated, cross-sectoral, ecosystem-based ocean management, reference has already been made to relevant commitments above. Support for integrated, cross-sectoral, ecosystem-based ocean management also exists within several Arctic states, such as Norway,<sup>170</sup> and various international bodies that are relevant to the Arctic marine area. For instance, integrated management of resources and ecosystem-based management features prominently in the Norwegian, Danish and Swedish common objectives for their Arctic Council chairmanships 2006-2012.<sup>171</sup> Perhaps even more pertinent, however, are the pursuance of the ecosystem approach by the OSPAR Commission<sup>172</sup> and the large overlap between the spatial competence of the OSPAR Commission, the North East Atlantic Fisheries Commission (NEAFC), and the International Council for the Exploration of the Sea (ICES), which is conducive to integrated, cross-sectoral, ecosystem-based ocean management. The establishment of cooperative arrangements between NEAFC and the OSPAR Commission<sup>173</sup> and the proposal for an OSPAR marine protected area (MPA) situated beyond 200 nm from the coast<sup>174</sup> are aimed at testing this conduciveness.<sup>175</sup>

But while most, if not all, states would acknowledge the merits of integrated, cross-sectoral, ecosystem-based management of the Arctic marine area, they are likely to have very diverging views on how it should be pursued. Disagreements are likely to include, whether it should be pursued at the global or at the regional level, or whether it should be pursued by means of legally binding or non-legally binding instruments. Support for global approaches in

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170. See ROYAL NORWEGIAN MINISTRY OF THE ENV'T, HELHETLIG FORVALTNING AV DET MARINE MILJØ I BARENTSHAVET OG HAVOMRÅDENE UTENFOR LOFOTEN (FORVALTNINGSPLAN) [REPORT NO.8 TO THE STORTING: INTEGRATED MANAGEMENT OF THE MARINE ENVIRONMENT OF THE BARENTS SEA AND THE SEA AREAS OFF THE LOFOTEN ISLANDS] (2005-2006), available at <http://www.regjeringen.no/Rpub/STM/20052006/008/PDFS/STM20052006008000DDDPDFS.pdf>, translated at [http://www.regjeringen.no/upload/MD/Vedlegg/STM20052006008EN\\_PDF.pdf](http://www.regjeringen.no/upload/MD/Vedlegg/STM20052006008EN_PDF.pdf). The plan, which does not extend beyond the maritime zones of Norway, was approved by the Norwegian Parliament in June 2006. See also Press Release, The White House, *supra* note 72 (regarding the United States).

171. Available at the Arctic Council website, <http://www.arctic-council.org> (last visited Jan. 7, 2010).

172. See First Joint Ministerial Meeting of the Helsinki and OSPAR Commissions (JMM), June 25-26, 2003, Bremen, F.R.G., *Statement on the Ecosystem Approach to the Management of Human Activities*, Annex 5, ¶ 5, available at <http://www.helcom.fi/stc/files/BremenDocs/JointEcosystemApproach.pdf>.

173. OSPAR Comm'n, *Draft Memorandum of Understanding (MOU)*, Annex 13, OSPAR 08/24/1-E, (June 23-27, 2008) (in force Sept. 15, 2008); see also OSPAR Comm'n, *Summary Record*, ¶ 7.23(f), OSPAR 08/24/1-E (June 23-27, 2008).

174. OSPAR Comm'n, *Proposal for an OSPAR Area of Interest for Establishing an MPA on the Mid Atlantic Ridge/Charlie Gibbs Fracture Zone*, Doc. OSPAR 08/7/9-E (June 27, 2008); see also OSPAR Comm'n, *Summary Record*, *supra* note 173, ¶ 7.16-7.24.

175. See KOIVUROVA & MOLENAAR, INTERNATIONAL GOVERNANCE, *supra* note 6, at 15-19.

this context seems minimal. This can be deduced from the fact that the EU proposal for an Implementing Agreement to the LOS Convention<sup>176</sup> has received, so far, little support by non-EU member states. Linking a legally binding instrument for the marine Arctic to the LOS Convention,<sup>177</sup> even if its spatial scope would be limited to areas beyond national jurisdiction (high seas and the Area), would also not be acceptable to Arctic Ocean coastal states because its negotiation would fall under the United Nations General Assembly (UNGA); a forum where the five Arctic Ocean coastal states could potentially be confronted by 180-odd states with opposing views and interests.

Regional approaches for pursuing integrated, cross-sectoral, ecosystem-based ocean management in the marine Arctic are likely to attract more support.<sup>178</sup> However, the Arctic Ocean coastal states are, in view of their Ilulissat Declaration, not in favor of a legally binding instrument that would amount to “a new comprehensive international legal regime to govern the Arctic Ocean.”<sup>179</sup> Proposals such as those by the European Parliament in its Resolution of October 9, 2008 on Arctic governance<sup>180</sup> for a treaty inspired by the Antarctic Treaty have the additional hurdle of being too closely associated with the agreement to disagree on the status of

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176. Cf. Eur. Community (EC), *Communication: An Integrated Maritime Policy for the European Union*, at 14, COM (2007) 574 final (Oct. 10, 2007) (noting that the “Commission will propose an Implementing Agreement of UNCLOS on marine biodiversity in areas beyond national jurisdiction and work towards successful conclusion of international negotiations on Marine Protected Areas on the high seas” and also noting that the European Commission’s Arctic Communication refers to these items as possible policy actions on page 11). It is not altogether clear, however, why these items with a global scope should be listed in the Arctic Communication. The precise meaning and intention of these items is not clear, but they seem at any rate related to a process at the global level that is intended to have output that applies throughout the globe and not just the Arctic. Or does it imply that the high seas in the Arctic Ocean should be designated as a marine protected area? The EU Council’s Conclusions on Arctic issues, *supra* note 73, invites EU Member States “to support efforts to protect Arctic ecosystems and their biodiversity, particularly by considering measures for protection of biodiversity in the high seas and by encouraging Arctic states to develop marine protected areas (MPAs) on an individual or a cooperative basis.”

177. See Jacqueline McGlade, Executive Director, European Env’t Agency, *The Arctic Environment – Why Europe should care*, Speech at the Arctic Frontiers Conference, Tromsø (Jan. 23, 2007), available at <http://www.eea.europa.eu/pressroom/speeches/23-01-2007>. The actual wording used in this speech is “Polar Ocean protocol.” This wording is confusing because it can be interpreted as applying to both the Arctic Ocean and the Southern Ocean. Note that the words “based on UNCLOS” in page 10 of the European Commission’s Arctic Communication indicate that the option of an Implementation Agreement under the LOS Convention is no longer pursued).

178. Rosemary Rayfuse, *Melting Moments: The Future of Polar Oceans Governance in a Warming World*, 16 REV. EUR. CMTY. & INT’L ENVTL. L. 196, 215 (2007) (putting forth the idea of a regional oceans management organization (ROMO)).

179. See *supra* note 38 and accompanying text.

180. Resolution on Arctic Governance, EUR. PARL. DOC. P6\_TA-PROV(2008)0474 (Oct. 9, 2009), available at [http://www.europarl.europa.eu/meetdocs/2004\\_2009/documents/ta/p6\\_ta-prov\(2008\)0474\\_/P6\\_TA-PROV\(2008\)0474\\_en.pdf](http://www.europarl.europa.eu/meetdocs/2004_2009/documents/ta/p6_ta-prov(2008)0474_/P6_TA-PROV(2008)0474_en.pdf).

sovereignty in Antarctica.<sup>181</sup> Expanding the spatial scope of the OSPAR Convention to include the entire Arctic Ocean would not strictly speaking be a “new regime,” but it is questionable if Canada, the Russian Federation, and the United States would be prepared to accept this entire “acquis”; namely the OSPAR Convention as well as all the legally binding decisions, non-legally binding recommendations and other agreements adopted by the OSPAR Commission—without significant amendments. An alternative to these legally binding options is to transform the Arctic Council into a mechanism for cooperation and coordination in pursuing integrated, cross-sectoral, ecosystem-based ocean management.<sup>182</sup>

A pertinent question is how the Ilulissat Declaration should be interpreted in this regard: does it draw a line in the sand or is it an opening bid in the initial stages of the ongoing debate on reform? The latter could certainly turn out to be the better interpretation, in particular if the primary purpose of the cited phrase is to reject reform along the lines of the Antarctic Treaty, and if existing and newly established sectoral arrangements do not succeed in adequate coordination and coordination.<sup>183</sup> The pace of change in the Arctic is likely to be a crucial factor in that regard.

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181. See Press Release, The White House, Arctic Region Policy, *supra* note 72, III(C)(3) (observing that the “geopolitical circumstances of the Arctic region differ sufficiently from those of the Antarctic region such that an “Arctic Treaty” of broad scope—along the lines of the Antarctic Treaty—is not appropriate or necessary”). The European Commission’s Arctic Communication has not enthusiastically embraced the suggestion by the European Parliament but, arguably, does not rule out new instruments either (see the terms “instruments” and “frameworks” on pages 10 and 11).

182. McRae, *supra* note 90, at 8; see also Oran R. Young, Arctic Governance: Emerging Challenges – New Opportunities, Presentation at the Alliance for Liberals and Democrats for Europe (ALDE) Seminar (May 7, 2008) (PowerPoint presentation at <http://www.slideworld.com/slideshows.aspx/Arctic-Governance-Emerging-Challenges--New-Opp-ppt-961693>). In this presentation, Young does not repeat his earlier idea of establishing a Commission on Arctic Sustainable Development (CASD) modeled on the World Commission on Environment and Development. See ORAN R. YOUNG, ARCTIC GOVERNANCE: PREPARING FOR THE NEXT PHASE (2002), available at [http://www.arcticparl.org/\\_res/site/File/static/conf5\\_spar2002.pdf](http://www.arcticparl.org/_res/site/File/static/conf5_spar2002.pdf) (paper presented at Fifth Conference of Parliamentarians of the Arctic Region).

183. See also Young, *supra* note 182 (identifying “the prospect that individual elements of the Arctic’s institutional complex will collide with one another or work at cross purposes” as one of three main concerns).



# THE LEGAL REGIME OF NAVIGATION IN THE RUSSIAN ARCTIC

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## INTRODUCTION

Ever since the existence of a Northeastern Passage was proven in 1648 and the mapping of the northern coastline completed following the expeditions of Vitus Bering (1725-1728) and the Great Northern Expedition (1733-1743),<sup>1</sup> Arctic marine shipping above the Eurasian continent has been continuously developed, first by Imperial Russia, then by the Soviet Union, and, at present, by the

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1. A. G. Granberg et al., *Istoriia Severnogo morskogo puti* [History of the Northern Sea Route] in PROBLEMY SEVERNOGO MORSKOGO PUTI [PROBLEMS OF THE NORTHERN SEA ROUTE] 9, 10 (Alexander G. Granberg & Vsevolod I. Peresyplkin eds., Moscow, Nauka 2006); N. D. KOROLEVA ET AL., *Pravovoi rezhim sudochodstva v Rossiiskoi Arktike* [Legal Regime of Navigation in the Russian Arctic] 4, 61 (Moscow, Soiuzmorniiproekt 1995).

Russian Federation.

The present contribution intends to clarify the contemporary legal regime applicable to navigation in these northern Eurasian waters. It will do so by relying first and foremost upon Russian primary sources or on authors directly relying upon such sources. Moreover, it will only look at the issue from a “foreign navigation” point of view. If indeed global warming will influence the Arctic, as predicted by the Arctic Climate Impact Assessment, it is submitted that the opening up of the Arctic to foreign shipping will first occur in the Northeastern Passage.

It seems, therefore, a useful exercise to have a closer look at the present-day legal regime applicable to foreign shipping in the Russian Arctic. The Russian Ministry of Transport’s official policy of opening up these waters to foreign shipping<sup>2</sup> is not a completely new one. The present contribution will therefore start with a brief overview of past initiatives in this respect (Part I). It will then have a look at the present legal regime as it is applied today (Part II). In a concluding part, some recent changes to this legal regime will be highlighted, as well as some expected initiatives for the near future (Part III).

## I. PAST INITIATIVES

A first initiative to open up the Russian Arctic to foreign navigation was made by the then Soviet Minister of Merchant Marine, Viktor Bekayev, on March 28, 1967.<sup>3</sup> Some Soviet scholars had argued that the so-called “sector decree,”<sup>4</sup> which claims that all lands and islands, both those already discovered and those still to be discovered, in the Soviet sector belong to the USSR, also included ice blocks and surrounding seas.<sup>5</sup> In view of this argument, the importance of this first attempt to open up the Northern Sea Route at the beginning of the 1967 shipping season,

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2. A. N. Olshevsky, *Keynote Address at the Arctic Operational Platform Project Workshop Proceedings: Principal Trends of the Development of the Northern Sea Route Regulations*, in ARCTIC OPERATIONAL PLATFORM PROJECT WORKSHOP PROCEEDINGS, Deliverable No. D.6.5, at 11-12 (2005), available at [http://www.arcop.fi/reports/workshop\\_report6.pdf](http://www.arcop.fi/reports/workshop_report6.pdf).

3. Terence Armstrong, *The Northern Sea Route in 1967*, 11 INTER-NORD 123, 123 (1970).

4. 1926 Decree of the Presidium of the Central Executive Committee of the USSR, On the Proclamation of Lands and Islands Located in the Northern Arctic Ocean as Territory of the USSR, 32 SOBRAINIE UZAKONENII I RASPORIAZHENII RABOCHE-KREST'IANSKOGO PRAVITEL'STVA SSSR [COLLECTED LAWS AND DECREES OF THE WORKERS AND PEASANTS GOVERNMENT OF THE USSR] 203 (Apr. 15, 1926) (Rus.), translated in N.D. KOROLEVA ET AL., *supra* note 1, at 105.

5. E. A. KOROVIN, *SSSR i poliarniie zemli [The USSR and Polar Lands]*, 3 SOVETSKOE PRAVO [SOVIET LAW] 43, 46 (1926).

*i.e.* during the hey days of the Cold War, should not be underestimated. However, this first offer was never actually taken up by foreign shippers, as it appears to have been tacitly withdrawn in the wake of the Suez Canal crisis. Apparently, the Soviet authorities did not want to offend their Arab allies by appearing to provide an alternative route to the Suez Canal.<sup>6</sup>

One had to wait two decades for Gorbachev to renew a similar offer during his Murmansk speech held on October 1, 1987. “Depending on the evolution of the normalization of international relations,” he stated at that occasion, “we could open the Northern Sea Route for foreign shipping subject to the use of our icebreaker pilotage.”<sup>7</sup> It took another two years for the first foreign currency to be generated by the Northern Sea Route.<sup>8</sup> Even then, however, no foreign vessel was involved. Instead, the Soviet vessel *Tiksi* was chartered, for hard currency, by the foreign owners of the goods to be transported from Hamburg to Osaka using the Northern Sea Route during the summer of 1989.<sup>9</sup> It was, therefore, only in the summer of 1991 that a foreign vessel, the French *Astrolabe*, was finally able to make a through passage at the very moment that an aborted *coup d'état* took place—and only months before the final disappearance of the Soviet Union from the political map of the world.<sup>10</sup> Earlier that same year, an article in the Soviet newspaper Pravda, entitled “Flags in Hot Ice: For the First Time the Northern Sea Route Opened for Foreign Shipping,” had confirmed the adoption of the “Regulations for Navigation on the Seaways of the Northern Sea Route”<sup>11</sup> which would become operational on June 1, 1991.<sup>12</sup> The *Astrolabe*, receiving its official authorization on the first

6. Terence Armstrong, *The Northern Sea Route in 1968-70*, 12 INTER-NORD 118, 119 (1972).

7. Mikhail Gorbachev, Speech at the Ceremonial Meeting on the Occasion of the Presentation of the Order of Lenin and the Gold Star Medal to the City of Murmansk (Oct. 1, 1987) (transcript published in IZVESTIYA, Oct. 2, 1987, at 1, 3) (Rus.) (translated by author).

8. G. Ovchinnikov, *Za valiutu cherez Severnyi Ledovityi* [Through the Arctic Ocean Against Hard Currency], IZVESTIYA, Sept. 9, 1989, at 1 (Rus.).

9. Erik Franckx, *New Developments in the North-east Passage*, 6 INT'L J. ESTUARINE & COASTAL L. 33, 33-40 (1991).

10. Erik Franckx, *The Soviet Maritime Arctic, Summer 1991: A Western Account*, 1 J. TRANSNAT'L L. & POL'Y 131, 140-44 (1992) [hereinafter Franckx, *The Soviet Maritime Arctic*].

11. 1990 Regulations for Navigation on the Seaways of the Northern Sea Route, approved Sept. 14, 1990, 29 IZVESHCHENIYA MOREPLAVATELIAM [NOTICES TO MARINERS] (June 18, 1991) (Rus.) [hereinafter 1990 Regulations], available at [http://www.morflot.ru/about/sevmorput/rus/Rules\\_MMF\\_1990\\_Russ.doc](http://www.morflot.ru/about/sevmorput/rus/Rules_MMF_1990_Russ.doc). English translations are available at the official website for the Ministry of Transport of the Russian Federation, Federal Agency of Sea and River Transport, [http://www.morflot.ru/about/sevmorput/en/RULES\\_OF\\_NAVIGATION.doc](http://www.morflot.ru/about/sevmorput/en/RULES_OF_NAVIGATION.doc), and in KOROLEVA ET AL., *supra* note 1, at 133-39.

12. V. Chertkov, *Flagi v goriachikh l'dakh* [Flags in Hot Ice], PRAVDA, Jan. 21, 1991,

day of July of that very year, must therefore have been one of the first vessels to have made use of these 1990 Regulations. Despite the fact that these regulations had been approved by the USSR Minister of Merchant Marine on September 14, 1990, on instruction of a Decree of the Council of Ministers of June 1, 1990, they took a rather long time to be published.<sup>13</sup> The present author received a bilingual Russian-English copy from A. Kolodkin and M. Volosov upon the occasion of a visit to Moscow during the month of October, 1991.<sup>14</sup>

## II. CURRENT LEGAL REGIME

The current legal regime of Arctic marine shipping in the Northern Sea Route is still based on these same 1990 Regulations.<sup>15</sup> The approach of giving a rather detailed account of these 1990 Regulations in order to clarify the legal regime applicable to navigation along the Northern Sea Route is also to be found in other recent Russian writings on the law of the sea,<sup>16</sup> as well as in Russian contributions to specialized workshops.<sup>17</sup> It therefore seems appropriate to start this analysis with a short overview of the content of these 1990 Regulations (Part II.A.).

However, these 1990 Regulations are not the only Russian regulations to be followed by foreign ships on the Northern Sea Route. According to the Head of the Administration on the Northern Sea Route,<sup>18</sup> three other texts adopted in 1996 regulate the present-day legal regime of this sea route, namely the 1996 Guide to Navigating Through the Northern Sea Route (Part II.B.),<sup>19</sup> the

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at 6 (Rus.).

13. Franckx, *The Soviet Maritime Arctic*, *supra* note 10, at 137.

14. ERIK FRANCKX, MARITIME CLAIMS IN THE ARCTIC: CANADIAN AND RUSSIAN PERSPECTIVES 315-18 (1993) [hereinafter FRANCKX, MARITIME CLAIMS IN THE ARCTIC].

15. A. L. KOLODKIN ET AL., MIROVOI OKEAN, MEZHDUNARODNO-PRAVOVOI REZHIM, OSNOVNYE PROBLEMY [THE WORLD OCEAN, INTERNATIONAL LEGAL REGIME, BASIC PROBLEMS] 264-66 (Moscow, Status, 2007); N. P. Egorov et al., *Pravovoi Rezhim Sudokhodstva v Arktiki* [The Legal Regime of Navigation in the Arctic], in PROBLEMY SEVERNOGO MORSKOGO PUTI [PROBLEMS OF THE NORTHERN SEA ROUTE] 482, 493 (Alexander G. Granberg & Vsevolod I. Peresypkin eds., Moscow, Nauka, 2006).

16. V. N. GUTSULIAK, MEZHDUNARODNOE MORSKOE PRAVO (PUBLICHNOE I CHASTNOE) [INTERNATIONAL LAW OF THE SEA (PUBLIC AND PRIVATE)] 96-98 (Rostov na Don, Feniks, 2006).

17. I. Mikhina, *The Legal Regime of Navigation in the Russian Arctic*, in ARCTIC OPERATIONAL PLATFORM PROJECT WORKSHOP PROCEEDINGS, Deliverable No. D.6.1, at 33, 35-36 (Mar. 25, 2003), available at [http://www.arcop.fi/reports/workshop\\_report1.pdf](http://www.arcop.fi/reports/workshop_report1.pdf).

18. A. G. Gorshkovsky, *Rules to be Followed on the Northern Sea Route*, in ARCTIC OPERATIONAL PLATFORM PROJECT WORKSHOP PROCEEDINGS, Deliverable No. D.6.1, *supra* note 17, at 67-68, 71.

19. 1996 Guide to Navigating through the Northern Sea Route, translated in HEAD DEPARTMENT OF NAVIGATION AND OCEANOGRAPHY OF THE MINISTRY OF DEFENCE OF THE RUSSIAN FEDERATION NOTICE TO MARINERS 81-84 (July 13, 1996) (copy kindly obtained from

1996 Regulations for Icebreaker and Pilot Guiding of Vessels through the Northern Sea Route (Part II.C.),<sup>20</sup> and the 1996 Requirements for the Design, Equipment, and Supplies of Vessels Navigating the Northern Sea Route (Part II.D.).<sup>21</sup>

The basic legal framework applicable to foreign shipping in the Northern Sea Route, comprised of these four basic documents, has not changed much since then. Indeed, all of these documents, except the 1996 Guidelines to Navigating,<sup>22</sup> are still made available by the Russian Ministry of Transport through its official website in Russian and some of them also in English,<sup>23</sup> in exactly the same version as they were adopted more than ten years ago.

### A. 1990 Regulations

Since these rules date back to the early 1990s, this Part starts from a previous analysis made by the present author, to which more recent Russian writings on this subject are added.

In these regulations, the Northern Sea Route is defined as:

the essential national transportational line of the USSR that is situated within its inland seas, territorial sea (territorial waters), or exclusive economic zone adjacent to the USSR Northern Coast *and includes seaways suitable for leading ships in ice*, the extreme points of which are limited in the west by the Western entrances to the Novaya Zemlya Straits and the meridian running north through Mys Zhelaniya, and in the east (in the Bering Strait) by the parallel 66° N and the meridian 168°58'37" W.<sup>24</sup>

This definition immediately raises the difficult question of whether

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R. Douglas Brubaker) [hereinafter 1996 Guide to Navigating].

20. 1996 Regulations for Icebreaker and Pilot Guiding of Vessels through the Northern Sea Route (Rus.) [hereinafter 1996 Regulations], *available at* [http://www.morflot.ru/about/sevmorput/rus/Regulation\\_Construction\\_Ships.doc](http://www.morflot.ru/about/sevmorput/rus/Regulation_Construction_Ships.doc), *also translated in* 1996 Guide to Navigating, *supra* note 19, at 84-89.

21. 1996 Requirements for the Design, Equipment and Supplies of Vessels Navigating the Northern Sea Route (Rus.) [hereinafter 1996 Requirements], *available at* [http://www.morflot.ru/about/sevmorput/rus/Regulation\\_Construction\\_Ships.doc](http://www.morflot.ru/about/sevmorput/rus/Regulation_Construction_Ships.doc). English translations are available at the official website for the Ministry of Transport of the Russian Federation, Federal Agency of Sea and River Transport, [http://www.morflot.ru/about/sevmorput/en/SHIP\\_DESIGN\\_Eng.doc](http://www.morflot.ru/about/sevmorput/en/SHIP_DESIGN_Eng.doc), and in 1996 Guide to Navigating, *supra* note 19, at 317-23.

22. For discussion, see *infra* section II.B.

23. Russian Ministry of Transport Official Website, <http://www.mintrans.ru> (in Russian) (last visited Apr. 4, 2010).

24. 1990 Regulations, *supra* note 11, art. 1(2) (emphasis added).

or not the Northern Sea Route, and by implication the field of application of these 1990 Regulations, is limited to the 200 nautical mile limit, or whether the italicized text allows these regulations to apply beyond that limit as well. Given the legislative antecedents as well as their interpretation in the Soviet doctrine, it was believed that the latter option was the more probable one.<sup>25</sup>

This is clearly confirmed by later writings on this topic. Lukachuk in his monograph on international law, for instance, is crystal clear when he states, “[The Northern Sea Route] also passes through parts of the high seas.”<sup>26</sup> Moreover, the fact that at times the route passes through the high seas does not undermine the unitary character of this transport line of communication, for it is argued that the presence of ships in these parts of the high seas is impossible without prior or posterior navigation through waters falling under Russian sovereignty.<sup>27</sup> This definition is also said to clarify the distinction between the Northern Sea Route and other constructs such as the Northeastern Passage or the Northeast Passage, since the Northern Sea Route is said to form a basic part of those other, much broader constructs.<sup>28</sup> Stated negatively, if ships want to sail between ports of Europe, Asia, and America by making use of only the Northeastern Passage or the Northeast Passage, they have to remain outside so-called “Russian waters” and the Northern Sea Route.<sup>29</sup> However, since the same authors making the latter assessment also underline at the same time that the northern boundary in the definition of the Northern Sea Route remains undefined and includes high latitude routes, even those crossing the North Pole,<sup>30</sup> they rather blur the distinction just made. The incorporation into Soviet legislation of Article 234 of the 1982 United Nations Convention on the Law of the Sea<sup>31</sup> led to similar uncertainties as to the exact scope application.<sup>32</sup> If the new Russian legislation on the exclusive economic zone<sup>33</sup> remedied quite a few shortcomings already noted by the present author

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25. FRANCKX, *MARITIME CLAIMS IN THE ARCTIC*, *supra* note 14, at 189-90.

26. I.I. LUKASHUK, *MEZHDUNARODNOE PRAVO: OSOBENNAIA CHAST'* [INTERNATIONAL LAW: SPECIAL PART] Ch. VI, para. 10 (Moscow, Wolters, 2005).

27. KOLODKIN ET AL., *supra* note 15, at 264.

28. Granberg et al., *supra* note 1, at 9.

29. KOROLEVA ET AL., *supra* note 1, at 49, 99.

30. *Id.* at 49, 99; *id.* at 50 map, 100 map.

31. United Nations Convention on Law of the Sea, Dec. 10, 1982, 1833 U.N.T.S. 397-581, available at [http://www.un.org/Depts/los/convention\\_agreements/texts/unclos/unclos\\_e.pdf](http://www.un.org/Depts/los/convention_agreements/texts/unclos/unclos_e.pdf). The scope of application of this article is strictly limited to the exclusive economic zone.

32. Franckx, *Maritime Claims in the Arctic*, *supra* note 14, at 178-79, 188-89.

33. 1998 Federal Act on the Exclusive Economic Zone of the Russian Federation, as amended, No. 191-3, art. 32 (Dec. 17, 1998) (Rus.). Original Act translated at [http://www.un.org/Depts/los/LEGISLATIONANDTREATIES/PDFFILES/RUS\\_1998\\_Act\\_EZ.pdf](http://www.un.org/Depts/los/LEGISLATIONANDTREATIES/PDFFILES/RUS_1998_Act_EZ.pdf).

elsewhere with respect to the former Soviet legislation on the issue, such as the “due regard” requirements<sup>34</sup> or the requirement that ice must be covering the area for most of the year,<sup>35</sup> it is noteworthy that the new Russian legislation now adds a sentence stating that the limits of such areas shall be published in Notices to Mariners. It seems therefore safe to conclude that the door is still left open for the possible application of these 1990 Regulations beyond the two hundred mile limit. Also, the western lateral boundary of the Northern Sea Route has become unclear after some recent high level statements.<sup>36</sup> The question here is whether the field of application of the legal regime of the Northern Sea Route also includes the southeastern ice-covered part of the Barents Sea,<sup>37</sup> or not.

A second salient feature of this definition, especially when viewed against the later enactment of Russian federal acts on different maritime zones, is that a special article on the Northern Sea Route is to be found in the Federal Act of 1988 relating to the internal maritime waters, territorial sea and contiguous zone, in a chapter entitled: “Characteristics of the legal regime of sea ports of the Russian Federation, internal maritime waters, and the territorial sea.” It reads:

Navigation on the seaways of the Northern Sea Route, the historical national unified transport line of communication of the Russian Federation in the Arctic, including the Vil’kitskii, Shokal’skii, Dmitrii Laptev and Sannikov Straits, shall be carried out in accordance with this Federal Act, other federal laws and the international treaties to which the Russian Federation is a party and the Regulations for Navigation of the Seaways of the Northern Sea Route approved by the Government of the Russian Federation and published in *Notices to Mariners*.<sup>38</sup>

No such entry, however, is to be found in the Federal Act relating

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34. Erik Franckx, *The New USSR Legislation on Pollution Prevention in the Exclusive Economic Zone*, 1 INT’L J. ESTUARINE & COASTAL L. 155, 163-64 (1986).

35. Franckx, *Maritime Claims in the Arctic*, *supra* note 14, at 218 n. 358.

36. ERIK FRANCKX, *Should the Law Governing Maritime Areas in the Arctic Adapt to Changing Climatic Circumstances?* in CLIMATE GOVERNANCE IN THE ARCTIC 119-33 (N. Bankes et al. eds., Berlin, Springer, 2009).

37. Gorshkovsky, *supra* note 18, at 67; Granberg et al., *supra* note 1, at 10.

38. 1998 Federal Act on the Internal Maritime Waters, the Territorial Sea and Contiguous Zone of the Russian Federation, as last amended on Sept. 8, 2007, Nos. 155-3, 261-3 (July 31, 1998) (Rus.), art. 14 (translated by author). English translation also to be found at [http://www.un.org/Depts/los/LEGISLATIONANDTREATIES/PDFFILES/RUS\\_1998\\_Act\\_TS.pdf](http://www.un.org/Depts/los/LEGISLATIONANDTREATIES/PDFFILES/RUS_1998_Act_TS.pdf).

to the exclusive economic zone, adopted only a few months later,<sup>39</sup> even though by far the longest part of the Northern Sea Route runs through the Russian exclusive economic zone.

Essentially, the basic aim of these 1990 Regulations is to allow navigation on a non-discriminatory basis for vessels of all states, while giving careful consideration to environmental concerns.<sup>40</sup> The 1990 Regulations provide the basic framework within which these operations have to take place. Requests are to be addressed to the Administration of the Northern Sea Route.<sup>41</sup> In order for this Administration to be able to make a decision, these requests need to contain a minimum amount of information.<sup>42</sup> Special requirements will have to be met by the vessel and the master of the ship. If the latter has not the required experience, a state pilot will be assigned.<sup>43</sup> Civil liability of the owner for environmental damage must be secured before entering the area.<sup>44</sup> Inspection of the vessel while *en route* may be undertaken under certain circumstances.<sup>45</sup> Once allowed to use the Northern Sea Route, the vessel must follow the route assigned to it, unless otherwise instructed.

The vessel will be guided by means of either shore-based, aircraft, conventional, icebreaker leading, or icebreaker assisted pilotage and appropriate radio contact must be maintained.<sup>46</sup> Compulsory icebreaking pilotage is provided for in the Vil'kitskii, Shok-al'skii, Dmitrii Laptev, and Sannikov straits.<sup>47</sup> The Administration of the Northern Sea Route, located in Moscow, with its two regional headquarters located in the ports of Dikson and Pevek, exercises general control over shipping operations.<sup>48</sup> Navigation may be temporarily suspended<sup>49</sup> and vessels not complying with the above-

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39. 1998 Federal Act on the Exclusive Economic Zone of the Russian Federation, *supra* note 33.

40. 1990 Regulations, *supra* note 11, arts. 2, 1(4).

41. *Id.* art. 3.

42. It concerns information relating to the vessel (name, IMO number, flag, port of registry, name and address of shipowner, tonnage, full displacement, main dimensions, output of engines, construction and material of propeller, speed, year of construction, ice class, classification society, last examination date, bow construction, insurance, list of deviations of the 1996 Requirements), as well as the intended journey (expected time of navigation and aim of journey). Standard letter of the Head of the Northern Sea Route Administration addressed to the owners or masters of vessels (intending to sail the Northern Sea Route), available at [http://www.morflot.ru/about/sevmorput/en/pamyatka\\_sudovladeltsu.doc](http://www.morflot.ru/about/sevmorput/en/pamyatka_sudovladeltsu.doc) (Rus.), translated at [http://www.morflot.ru/about/sevmorput/en/Commemorative\\_booklet.doc](http://www.morflot.ru/about/sevmorput/en/Commemorative_booklet.doc).

43. 1990 Regulations, *supra* note 11, art. 4.

44. *Id.* art. 5.

45. *Id.* art. 6.

46. *Id.* art. 7.

47. *Id.* art. 7(4).

48. *Id.* art. 8.

49. *Id.* art. 9.

mentioned requirements may be ordered to leave the Northern Sea Route along a specified route.<sup>50</sup> Finally, the Administration of the Northern Sea Route and its Marine Operations Headquarters are not to be liable for damage suffered by a vessel or property located on board any vessel unless one can prove the Administration's negligence.<sup>51</sup>

It should be finally noted that the permission granted by the Administration of the Northern Sea Route does not allow the vessel to conduct marine scientific research, fish, or engage in tourism, the latter being all activities for which an additional permission of the Ministry of Foreign Affairs of the Russian Federation is required.<sup>52</sup>

The Russian Federation is a party to all Annexes but VI of the International Convention for the Prevention of Pollution from Ships and Protocol to the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78),<sup>53</sup> as well as the Protocol to Amend the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage (1992 Fund Convention).<sup>54</sup>

According to R. Douglas Brubaker, there is an ongoing process of harmonization of national law with the International Convention on Civil Liability for Oil Pollution Damage (1969 CLC), the Protocol to the International Convention on Civil Liability for Oil Pollution Damage (1976 Protocol), the Protocol to Amend the International Convention on Civil Liability for Oil Pollution Damage (1992 Protocol), and Appendix D of the International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea

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50. *Id.* art. 10.

51. *Id.* art. 11.

52. Standard letter of the Head of the Northern Sea Route Administration addressed to the owners or masters of vessels, *supra* note 42 (last paragraph).

53. International Convention for the Prevention of Pollution from Ships, Nov. 2, 1973, and Protocol to the International Convention for the Prevention of Pollution from Ships, Feb. 17, 1978 [MARPOL 73/78], 1340 U.N.T.S. 61, 17 I.L.M. 546.

54. Protocol to Amend the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, May 30, 1996, 1996 Austl. T.S. No. 3, 11 I.L.M. 284, available at <http://www.austlii.edu.au/cgi-bin/disp.pl/au/other/dfat/treaties/1996/3.html?query=+%28%2827+november+1992%29+and+%28son%29%29>.

(1996 HNS Convention).<sup>55</sup>

When this country overhauled its Commercial Navigation Code in 1999, totally new rules on liability and compensation were adopted based on the 1996 HNS Convention. However, problems remain with respect to the practical implementation in Russian law of the compulsory insurance certificate, which involves conditions, forms, and issuing authority as far as the Northern Sea Route is concerned, and authors have recommended that the 1990 Regulations should therefore be amended.<sup>56</sup>

It will be easily understood that only a broad general framework is provided for. For instance, details like the rates of the fees to be paid by foreign ships for the services rendered, even though duly foreseen to be adopted,<sup>57</sup> were initially only predicted for the month of July, 1992.<sup>58</sup> As indicated below,<sup>59</sup> these rates have recently been augmented.

### B. 1996 Guide to Navigating

This guide, which is a very sizeable document of more than 300 pages, has been prepared by the Russian side under the International Northern Sea Route Programme, a joint Norwegian-Japanese-Russian venture which ran from 1993 to 1999.<sup>60</sup> It consists of three main parts. In the first part, a general overview is provided both of the geographical and navigation conditions, which runs for eight pages, and of the hydro-meteorological conditions, which runs for seventy-four pages including many maps and graphics. This part concludes by providing the full text of both the

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55. R. DOUGLAS BRUBAKER, *THE RUSSIAN ARCTIC STRAITS* 88 (2005); International Convention on Civil Liability for Oil Pollution Damage, Nov. 29, 1969, 973 U.N.T.S. 3, available at <http://www.admiraltylawguide.com/conven/civilpol1969.html>; Protocol to the International Convention on Civil Liability for Oil Pollution Damage, Nov. 19, 1976, 16 I.L.M. 617, available at <http://sedac.ciesin.org/entri/texts/civil.liability.oil.pollution.damage.1969.html>; Protocol to Amend the International Convention on Civil Liability for Oil Pollution Damage, Nov. 27, 1992, 1996 Austl. T.S. No. 2, available at <http://www.austlii.edu.au/cgi-bin/disp.pl/au/other/dfat/treaties/1996/2.html?query=+%28%2827+november+1992%29+and+%28on%2929>; International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, May 3, 1996, available at <http://www.admiraltylawguide.com/conven/noxious1996.html>.

56. Egorov et al., *supra* note 15, at 496-97.

57. 1990 Regulations, *supra* note 11, art. 8(4).

58. I. Ivanov & A. P. Ushakov, *The Northern Sea Route – Now Open*, 12 INT'L CHALLENGES 15, 17 (1992).

59. For discussion, see *infra* section III.

60. L.G. Tsoy et al., *Report on Current Regulations and Practices and Impact of IMO Guidelines*, in ARCTIC OPERATIONAL PLATFORM PROJECT FRAMEWORK, Deliverable No. D.2.2.1, at 7 (2004), available at <http://www.arcop.fi/reports/D221.pdf>.

1990<sup>61</sup> and the 1996 Regulations.<sup>62</sup>

The second, and most substantial, part of the 1996 Guide to Navigating consists of a detailed navigational description of the Kara, Laptev, East Siberian, and Chuckchi Seas with their straits and islands. This part extends for 195 pages and ends with a fifty-seven page listing of aids to navigation, including floating, radio and lighted aids.

The document concludes with a third part, which consists of a sixty-five page reference section where the practice of ice navigation is addressed under different conditions, with or without the assistance of icebreakers, followed by a short, two page section on salvage and rescue support. This third part closes by providing the full text of the 1996 Requirements,<sup>63</sup> as well as a large, forty-two page section with illustrations of the appearance of the visual aids to navigation, different straits and islands, and ice manoeuvres. Despite the detailed nature of the descriptions given in this document, it does not replace the nautical charts or other more detailed nautical publications.

### C. 1996 Regulations

All ships intending to use the Northern Sea Route should submit a request to the Administration of the Northern Sea Route, at least four months in advance, including detailed information on the vessel, possible deviations from the 1996 Requirements,<sup>64</sup> certification of insurance of liability for possible pollution damage, and approximate date and purpose of the voyage.<sup>65</sup> For an additional fee, this timeframe may be shortened to one month, but in either case the owner receives an answer within ten days.<sup>66</sup> If the response is positive, an inspection needs to take place at the expense of the owner.<sup>67</sup> Ships not completely satisfying the 1996 Requirements, as well as floating structures, can be guided through the Northern Sea Route for an additional fee.<sup>68</sup>

The ship informs the Administration of the Northern Sea Route of the estimated time of arrival at least ten days before entering the route,<sup>69</sup> and provides a corrected time two to five days before

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61. 1996 Guide to Navigating, *supra* note 19, at 81-84.

62. *Id.* at 84-89.

63. *Id.* at 317-23.

64. For discussion, see *infra* section II.D.

65. 1996 Regulations, *supra* note 20, art. 2(1).

66. *Id.* art. 2(3).

67. *Id.* art. 2(4).

68. *Id.* art. 2(5).

69. *Id.*

arrival.<sup>70</sup> The information contained in this notification, in addition to vessel draft and contact information, mostly concerns information on cargo and crew.<sup>71</sup> When entering the Northern Sea Route, at least two pilots need to be taken on board, and the vessel must be brought under the control of the West or East Marine Operations Headquarters for icebreaking support and organization.<sup>72</sup> Despite the instructions given by the guiding icebreaker or the advice and recommendations provided by the ice pilot, the master retains ultimate responsibility for the vessel.<sup>73</sup> When a vessel does not comply with the above, it can either be expelled from the route,<sup>74</sup> forced back into a convoy,<sup>75</sup> or possibly receive delayed assistance,<sup>76</sup> but in all these cases the extra expenses incurred will be borne by the master of the vessel. The ship, which is required to have the latest nautical charts and navigational publications on board,<sup>77</sup> needs to report back at least twice a day to Marine Operations Headquarters.<sup>78</sup> The position of the vessel, which is instructed even in clear or open water not to deviate considerably from the recommended route,<sup>79</sup> is thus closely checked by the Russian authorities at all times.

#### D. 1996 Requirements

Given the extremely hazardous navigation conditions that can be encountered when sailing the Northern Sea Route, a detailed set of requirements have been adopted in order to ensure the safety of navigation and the protection of the Arctic marine environment from pollution. These requirements, which must be fulfilled before travelling along the Northern Sea Route,<sup>80</sup> as also referred to in the 1996 Regulations, apply to all vessels with gross registered tonnage of 300 tonnes.

At a minimum, these vessels have to possess at least the Russian Federation Register of Shipping ice classes of L1, UL or ULA,<sup>81</sup> which approximately correspond to the Lloyd's Register 1A,

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70. *Id.* art. 2(7).

71. *Id.* art. 2(6).

72. *Id.* arts. 2(8), (13).

73. *Id.* art. 3(2), (3).

74. *Id.* art. 2(17).

75. *Id.* art. 2(18).

76. *Id.* art. 2(21).

77. *Id.* art. 4(2).

78. *Id.* art. 2(22).

79. *Id.* art. 4(6).

80. 1996 Requirements, *supra* note 21, art. 2(10).

81. *Id.* art. 2(2).

1AS and AC1 ice classes.<sup>82</sup> Additional requirements are subsequently provided. First, the hull must be of a double-bottom type which normally can not be used for storage of petroleum products or other harmful substances.<sup>83</sup> Second, the machinery plant, as well as the propeller blades, must fulfil certain specific requirements.<sup>84</sup> Third, equipment to treat waste water must be on board, as well as a bilge water separator together with storage tanks sufficient for a thirty day navigation period.<sup>85</sup> Fourth, there are special requirements that help to ensure the stability of the vessel under ice conditions, such as potential ice accretion on horizontal and lateral surfaces of the ship, which must be observed.<sup>86</sup> Fifth, minimal navigation and communications equipment needs to be present.<sup>87</sup> Sixth, certain provisions and emergency facilities are required, including, for example, a double store of fuel and lubricants sufficient for thirty days, spare parts, and certain tools such as portable gas-welding equipment.<sup>88</sup> Finally, as regards the crew, its size must be sufficient to allow for a three-shift watch, and the master should have at least fifteen days' experience steering vessels under ice conditions along the Northern Sea Route.<sup>89</sup>

Russian vessel-source pollution standards for the Northern Sea Route are stricter, at least in some dimensions, than normal MARPOL 73/78 requirements. While the 1996 Requirements allow for discharges of bilge water if the petroleum content is less than fifteen parts per million, other petroleum contaminated discharges, such as ballast water from tankers, is prohibited.<sup>90</sup> Garbage disposal at sea is also prohibited.<sup>91</sup>

### III. RECENT CHANGES AND FUTURE LEGAL REGIME

As demonstrated under Part II, the bulk of the present-day legal regime applicable to foreign ships in the Northern Sea Route dates back to the early 1990s. A few recent additions should never-

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82. L. G. Tsoy & A. N. Yakovlev, *Consistency of the Northern Sea Route Regulations with Other National and International Rules*, in ARCTIC OPERATIONAL PLATFORM PROJECT WORKSHOP PROCEEDINGS, Deliverable No. D.6.5, at 20 (Sept. 8, 2004), available at [http://www.arcop.fi/reports/workshop\\_report6.pdf](http://www.arcop.fi/reports/workshop_report6.pdf).

83. 1996 Requirements, *supra* note 21, art. 3(1).

84. *Id.* art. 4(1)-(6).

85. *Id.* art. 5(1)-(3).

86. *Id.* art. 6(2), (5).

87. *Id.* art. 7(1)-(3).

88. *Id.* art. 8(1)-(3).

89. *Id.* art. 9(1), (2).

90. *Id.* art. 5(2).

91. H. KITAGAWA, THE NORTHERN SEA ROUTE: THE SHORTEST SEA ROUTE LINKING EAST ASIA AND EUROPE 128 (2001), available at [http://www.sof.or.jp/en/activities/pdf/06\\_02.pdf](http://www.sof.or.jp/en/activities/pdf/06_02.pdf) (Jap.).

theless be mentioned here to complete the picture. First, as predicted,<sup>92</sup> the fees to be paid by foreign ships for the services rendered were augmented in 2005. Fees depend upon the cargo being transported, and range from a low of U.S. \$5.08 per ton for timber products to a high of U.S. \$84.71 per ton for vehicles. Special rates apply, varying between U.S. \$8.52 for bulk liquid cargo and U.S. \$19.71 for other cargoes, with respect to the transport of cargo to the Far North carried out according to the federal budget and regional funds.<sup>93</sup> A separate set of fees were introduced at that time for vessels not intended for cargo transportation, such as vessels sailing in ballast or research vessels,<sup>94</sup> but these fees were cut in half a year later for vessels which received authorization to conduct marine scientific research in the internal waters, territorial sea, exclusive economic zone or continental shelf of the Russian Federation in order to realize the research policy of the government.<sup>95</sup> The ice breaking fees, which have been increasing regularly, also create a difficulty under the new economic conditions prevailing in the Russian economy. By early 1994, for instance, these fees had increased 1376 times when compared to 1989.<sup>96</sup> These fees are predicted to increase further in the near future.<sup>97</sup> New legislative initiatives, discussed below, explicitly include ice breaking fees in the determination of the overall fees established to use the Northern Sea Route.<sup>98</sup>

Furthermore, the number of open ports in the Arctic has increased substantially. Initially, only the port of Igarka, located some 418 miles inland on the Enisei river, had been opened to foreign ships. The Russian government later started to publish yearly lists of open ports.<sup>99</sup> For 2007-2008 this list includes forty-one Arctic ports open to foreign cargo vessels. Additionally, there are six

92. KIMMO JUURMAA, *ARCOP Final Report*, in ARCTIC OPERATIONAL PLATFORM PROJECT WORKSHOP PROCEEDINGS, Deliverable No. D.016.017, at 65 (Apr. 30, 2006), available at <http://www.arcop.fi/reports/D016.pdf>.

93. *July 26, 2005 Order of the Federal Rates Service, On the Changes of Rates for Services of the Icebreaker Fleet on the Northern Sea Route*, 27 INFO. BULL. OF FED. RATES SERVICE 173, tbls. 1, 3 (Oct. 4, 2005), available at [http://www.morflot.ru/about/sevmorput/en/Order\\_322\\_t\\_Eng.doc](http://www.morflot.ru/about/sevmorput/en/Order_322_t_Eng.doc). Conversion of Rubles into U.S. dollars calculated at conversion rate of April 24, 2010.

94. *Id.* tbl. 2.

95. *December 5, 2006, Order Amending the Order of the Federal Rates Service of July 26, 2005, No. 322-T, On the Changes of Rates for Services of the Icebreaker Fleet on the Northern Sea Route*, Annex I, available at [http://www.morflot.ru/about/sevmorput/rus/Prikaz\\_337\\_t9\\_Russ.doc](http://www.morflot.ru/about/sevmorput/rus/Prikaz_337_t9_Russ.doc).

96. Granberg et al., *supra* note 1, at 23.

97. A.G. Granberg et al., *O kontseptsii razvitiia Severnogo morskogo puti [On the Concept of the Development of the Northern Sea Route]*, in PROBLEMY SEVERNOGO MORSKOGO PUTI [PROBLEMS OF THE NORTHERN SEA ROUTE], *supra* note 1, at 502, 519.

98. Egorov et al., *supra* note 15, at 500.

99. Granberg et al., *supra* note 1, at 19.

more ports for cargo vessels and twenty more ports for tankers with regulated access for foreigners, where these foreign flagged vessels, staffed with Russian crewmembers, are allowed entry.<sup>100</sup> This list has been subject to change.<sup>101</sup>

Detailed communication rules applicable to the Northern Sea Route have also been enacted recently, providing detailed contact information about radio-channels and telephone, fax, Inmarsat and e-mail numbers and addresses of the competent shore-based facilities, pilot services and icebreakers, relevant when sailing the northern Sea Route.<sup>102</sup>

There were indications that the abovementioned legal framework was in the process of being overhauled in a piecemeal fashion.<sup>103</sup> However, more fundamental changes to Arctic marine shipping appear to be in the pipeline. First, a draft law was submitted to the State Duma in 1998, entitled “On the Arctic Zone of the Russian Federation,” which would have consolidated Russian sovereignty over its Arctic waters by relying once again on the sector theory.<sup>104</sup> This draft, however, did not succeed, for Russian scholars have recently argued that it has been replaced by a new draft law on Northern Sea Route.<sup>105</sup> According to these authors, one of which participated in the actual preparation of this piece of

100. Instruction of the Government of the Russian Federation, *On the Authorization for Cargo Ships and Tankers Flying a Foreign Flag During 2007-2008 to Call at Arctic Ports and Points, Located on the Territory of the Russian Federation*, No. 1855-p, annexes 1-3 (Dec. 29, 2006) (Rus.).

101. No updates for later shipping season (2008-2009 and following) have been posted on the official webpages of the Ministry of Transport of the Russian Federation. Moreover, the 2007-2008 list has even been removed. From other, more recent documents it can nevertheless be deduced, first, that some of these ports have in the mean time been closed, such as Uelen, see *Instruction of the Government of the Russian Federation: On the Closing of Sea and River Ports (Points) for Entry and Servicing of Foreign Ships*, No. 752-p, annex (May 26, 2008) (Rus.); second, that certain ports, not mentioned in the list for 2007-2008, have also explicitly been closed, such as Kovda and Umba in the Murmansk Region, see *id.*; third, that other ports, already to be found in the 2007-2008 list, have in the mean time formed the subject of a separate instruction, no longer limiting in time their status as open ports, such as Varandei, see *Instruction of the Government of the Russian Federation: On the Granting of the name “Varandei” Sea Port*, No. 475-p, para. 3 (Apr. 11, 2008) (Rus.) as well as Vitino and Dudinka, see *Instruction of the Government of the Russian Federation*, No. 2060-p, only art. (Dec. 31, 2008) (Rus.).

102. Ministry of Transp. of the Rus. Fed’n, Fed. Agency of Sea & River Transp., *Communication Directions for During the Arctic Navigation Period 2008-2009 When Sailing the Seaways of the Northern Sea Route (Including 2009 Additions and Amendments)*, Moscow, 2008, available at [http://www.morflot.ru/about/sevmorput/rus/ukazi\\_po\\_svyazi.rar](http://www.morflot.ru/about/sevmorput/rus/ukazi_po_svyazi.rar).

103. L. G. Tsoy, *The Northern Sea Route – Requirements to Ships and Interrelation Between Ice Classes*, in ARCTIC OPERATIONAL PLATFORM PROJECT WORKSHOP PROCEEDINGS, Deliverable No. D.6.7, at 39-41 (Sept. 29, 2005), available at [http://www.arcop.fi/reports/workshop\\_report7.pdf](http://www.arcop.fi/reports/workshop_report7.pdf).

104. A. A. KOVALEV, CONTEMPORARY ISSUES OF THE LAW OF THE SEA: MODERN RUSSIAN APPROACHES 180 (2004).

105. KOLODKIN ET AL., *supra* note 15, at 269.

draft legislation, the new draft law provides for an authorization procedure for foreign warships, and possibly also for ships carrying nuclear weapons, radioactive material, or any other environmentally harmful substances on board. Above the Northern Sea Route over-flight by foreign warplanes would be prohibited, whereas the conduct of hydrographical surveys in that zone would be strictly regulated.<sup>106</sup> This legislative activity seems to be moving along a course set out by the Russian maritime doctrine adopted by President Putin in 2001. In this doctrine, where the Arctic receives due attention, the order of things is rather clear: first one should secure the national interests of the Russian Federation with respect to the Northern Sea Route, then one may consider its central state administration and the icebreaker service, and only last should one rely on the principle of “equal access for relevant transporters, including foreign transporters.”<sup>107</sup>

It is therefore likely that substantial changes are to be expected concerning the legal regime applicable to foreign shipping in the Russian Arctic in a not too distant future.

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106. *Id.* at 274-75.

107. Instruction of the President of the Russian Federation, *Maritime Doctrine of the Russian Federation for the Period until 2020*, No. 1387-p (July 27, 2001) (Rus.), translated in Int'l Oceanographic Comm'n, *National Ocean Policy: The Basic Texts from Australia, Brazil, Canada, China, Colombia, Japan, Norway, Portugal, Russian Federation, United States of America*, 241 (Paris, UNESCO 2007), available at [http://ioc3.unesco.org/abelos/index.php?option=com\\_docman&task=doc\\_download&gid=267](http://ioc3.unesco.org/abelos/index.php?option=com_docman&task=doc_download&gid=267).

**SOVEREIGNTY IN THE ARCTIC:  
AN ANALYSIS OF TERRITORIAL DISPUTES &  
ENVIRONMENTAL POLICY CONSIDERATIONS**

KATHRYN ISTE<sup>\*</sup>

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## I. INTRODUCTION

Global climate change has affected the Arctic region with greater intensity than the rest of the world.<sup>1</sup> The warming Arctic temperature is causing an unprecedented reduction of its trademark sea ice.<sup>2</sup> The summer of 2007 marked record-breaking shrinkage, spurring estimates that the Arctic may have ice-free summers before the close of this century.<sup>3</sup> As impenetrable ice becomes open water, circumpolar countries that were once considered worlds apart will become geographic neighbors. The sea routes connecting these countries will be far shorter than current routes, saving commercial shippers thousands of miles and billions of dollars.<sup>4</sup> Furthermore, it is estimated that the Arctic may contain twenty-five percent of the earth's oil and gas reserves.<sup>5</sup> With the sensitive Arctic ecosystem, the drastic changes in climate and increases in economic activity will undoubtedly result in significant environmental consequences.

Considering what is at stake, it is not surprising that territorial disputes over the Arctic have arisen between the circumpolar nations. Despite this quagmire of territorial disputes and the significant environmental issues facing the Arctic, a comprehensive, Arctic-specific legal regime is lacking. Thus, the following discussion provides an analysis of important policy considerations for the Arctic's legal and environmental future. After reviewing the climate changes affecting the Arctic in Part II, this discussion addresses the current international legal framework for the world's oceans, namely, the United Nations Convention on the Law of the Sea (LOS Convention).<sup>6</sup> Since the Arctic is mainly composed of water, any effective Arctic regime must operate within this treaty. Hence, Part III discusses the provisions of the LOS Convention relevant to sovereign rights of coastal nations. Part IV introduces the nations in the position to make territorial claims to the Arctic and

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1. SUSAN JOY HASSOL, IMPACTS OF A WARMING ARCTIC: ARCTIC CLIMATE IMPACT ASSESSMENT 8 (2004), available at <http://www.amap.no/acia/index.html> (click on link labeled "Impacts of a Warming Arctic: Arctic Climate Impact Assessment").

2. See *id.*

3. Scott G. Borgerson, *Arctic Meltdown: The Economic and Security Implications of Global Warming*, FOREIGN AFF., Mar.-Apr. 2008, at 63, 63, 65-67.

4. *Id.* at 69-70; Rebecca Dube, *As Ice Melts, Debate Over Northwest Passage Heats*, USA TODAY, Apr. 4, 2006, available at [http://www.usatoday.com/news/world/2006-04-03-nwpassage-debate\\_x.htm](http://www.usatoday.com/news/world/2006-04-03-nwpassage-debate_x.htm).

5. Borgerson, *supra* note 3, at 67; Robert Lee Hotz, *Board of Scientists Is Swamped by Claims for Rich Sea Floors*, WALL ST. J., Feb. 22, 2008, at B1, available at <http://online.wsj.com/article/SB120363436202384279.html>.

6. United Nations Convention on the Law of the Sea, Dec. 10, 1982, 1833 U.N.T.S. 397 [hereinafter LOS Convention], available at [http://www.un.org/Depts/los/convention\\_agreements/texts/unclos/unclos\\_e.pdf](http://www.un.org/Depts/los/convention_agreements/texts/unclos/unclos_e.pdf).

provides current information regarding the status of these claims. Part V then describes the distinct environmental challenges facing the Arctic to highlight their necessary prominence in policy considerations. Finally, Part VI reviews existing regimes that serve as options and models for governing the Arctic and ultimately propose a framework for the effective conservation and protection of the Arctic environment.

## II. WHY THE CURRENT INTEREST IN THE ARCTIC: HOW THE CHANGING CLIMATE IN THE ARCTIC IS FUELING TERRITORIAL CLAIMS

Interest in asserting territorial claims over the Arctic Region is not a recent development. Early claims to the Arctic were motivated by a desire to find a shipping sea route between Europe and Asia.<sup>7</sup> These efforts were cut off by the icy conditions of the Arctic, which made travel through parts of the Arctic Ocean impossible.<sup>8</sup> Recently, however, the global climate is changing, causing the Arctic Region to become warmer.<sup>9</sup> This, in turn, is causing the sea ice to melt and the season for navigation to lengthen.<sup>10</sup> Though the melting sea ice could devastate Arctic biodiversity and indigenous cultures,<sup>11</sup> it enables access to the Arctic Ocean, for which navigators and explorers have searched for centuries.<sup>12</sup> Today, access to the Arctic is not only coveted for shipping sea routes, but also for its natural resources of oil, gas, and fish stocks.<sup>13</sup> New access to these treasures has fueled an international territorial fight over an area that was once largely ignored.

### A. *The Melting Sea Ice Creates New Access to the Arctic*

There is a consensus in the international scientific community that the global climate is changing, as characterized by increases in the temperatures of the earth's surface and oceans.<sup>14</sup> The rate at which the global climate is warming is likely not due to the earth's natural climatic cycles alone. Rather, the recent change in climate

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7. Borgerson, *supra* note 3, at 68.

8. *See id.*

9. See Clifford Krauss et al., *As Polar Ice Turns to Water, Dreams of Treasure Abound*, N.Y. TIMES, Oct. 10, 2005, available at <http://www.nytimes.com/2005/10/10/science/10arctic.html>.

10. *See id.*

11. HASSOL, *supra* note 1, at 13-14.

12. See Mark Jarashow et al., Note, *UNCLOS and the Arctic: The Path of Least Resistance*, 30 FORDHAM INT'L L.J. 1587, 1591 (2007).

13. See Krauss, *supra* note 9.

14. See HASSOL, *supra* note 1, at 13, 20.

has been exacerbated by human-induced factors.<sup>15</sup> The primary human factors contributing to the warming of the global climate are emissions of carbon dioxide and other greenhouse gases produced by burning fossil fuels, such as coal, oil, and natural gas.<sup>16</sup> Also contributing to warming temperatures is increased ultraviolet radiation reaching the earth's surface.<sup>17</sup> This likely results from stratospheric ozone depletion, caused by chlorofluorocarbons and other manmade chemicals.<sup>18</sup>

Due to the sensitivity of the Arctic ecosystem, the impact of the warming global climate is greater on the Arctic region than on other regions of the world.<sup>19</sup> The Arctic's climatic vulnerability stems from its short growing season and small variety of fauna and flora.<sup>20</sup> To illustrate the Arctic's relative susceptibility to the effects of global warming, in recent decades, the average temperature in the Arctic has increased at nearly twice the rate as the average temperature increase in the rest of the world.<sup>21</sup> The intensity of global warming's impact on the Arctic is apparent in the recent dramatic changes that have occurred in its ecosystem.

An important factor for determining climate changes in the Arctic is sea ice: its extent and thickness affect all aspects of the Arctic climate including the reflectivity of the surface, cloud coverage, ocean currents, and fluctuations in heat and moisture at the ocean's surface.<sup>22</sup> A collaboration of the world's leading climate researcher found that in the past few decades the average yearly reduction in sea ice for the entire Arctic region was 8% and the average yearly reduction in sea ice thickness was 10-15%.<sup>23</sup> The assessment further stated that within this time period sharper sea

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15. *Id.*; *Summary for Policy Makers*, in CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS. CONTRIBUTION OF WORKING GROUP I TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 2-3 (Susan Solomon et al. eds., 2007) [hereinafter *Summary for Policy Makers*], available at <http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf>.

16. See *Summary for Policy Makers*, *supra* note 15, at 2-3, 8.

17. Betsy Weatherhead et al., *Chapter 5: Ozone and Ultraviolet Radiation*, ARCTIC CLIMATE IMPACT ASSESSMENT 152 (Cambridge Univ. Press 2005), available at [http://www.acia.uaf.edu/PDFs/ACIA\\_Science\\_Chapters\\_Final/ACIA\\_Ch05\\_Final.pdf](http://www.acia.uaf.edu/PDFs/ACIA_Science_Chapters_Final/ACIA_Ch05_Final.pdf); see also Encyclopedia of Earth, The Ozone Hole, [http://www.eoearth.org/article/Antarctic\\_ozone\\_hole](http://www.eoearth.org/article/Antarctic_ozone_hole) (last visited Dec. 20, 2009).

18. *Summary for Policy Makers*, *supra* note 15, at 10.

19. HASSOL, *supra* note 1, at 13, 20.

20. See Terry V. Callaghan, *Chapter 7: Arctic Tundra and Polar Desert Ecosystems*, ARCTIC CLIMATE IMPACT ASSESSMENT 247 (Cambridge Univ. Press 2005), available at [http://www.acia.uaf.edu/PDFs/ACIA\\_Science\\_Chapters\\_Final/ACIA\\_Ch07\\_Final.pdf](http://www.acia.uaf.edu/PDFs/ACIA_Science_Chapters_Final/ACIA_Ch07_Final.pdf).

21. *Id.*

22. *Id.*

23. *Id.*; see also *Arctic Sea Ice May Have Fallen by 50 Percent Since 1950s*, SCIENCE-DAILY, Oct. 2, 2007, <http://www.sciencedaily.com/releases/2007/10/071001160655.htm>.

ice reductions have been found regionally.<sup>24</sup> For example, in the central region of the Arctic Ocean, studies indicate a 40% reduction in ice thickness.<sup>25</sup> During the summer of 2007 the overall area covered by ice in the Arctic decreased by over one million square miles.<sup>26</sup> This massive shrinking of sea ice is part of the estimated 50% shrinkage measured since the 1950s.<sup>27</sup>

The Arctic ecosystem is moving rapidly toward a condition it has not been in for more than one million years.<sup>28</sup> It is estimated that within this century the sea ice will largely disappear for periods of time during the summers.<sup>29</sup> Several studies indicate the Arctic is melting far more rapidly than once predicted,<sup>30</sup> fueling the urgency under which the Arctic nations make their territorial claims.<sup>31</sup> As the sea ice disappears, the Arctic Ocean will be accessible by humans like it has never been before.

### *B. The Coveted Resources of the Arctic: Navigation and Oil*

Increasing access to the Arctic is the facilitator of the recent territorial efforts. The real impetus, however, is the resources the Arctic contains, such as navigation, fish stocks, oil, and gas. Thus, the availability of shipping routes in the Arctic Ocean is immensely valuable. One such sea route, the Northern Sea Route, located along the northern coast of Eurasia, is about 40% shorter than the commonly used route through the Suez Canal.<sup>32</sup> The other major Arctic shipping route is the Northwest Passage, which connects Europe and Asia through the Arctic Archipelagos and along the northern coasts of Canada and Alaska.<sup>33</sup> Compared to the 12,600 nautical mile distance between Europe and Asia through the Panama Canal, the 7900 nautical mile trip of the Northwest Passage saves nearly 5000 nautical miles.<sup>34</sup> The savings in distance could equate to savings of billions of dollars for commercial shippers.<sup>35</sup> Hence, the search for this sea route has been the aspiration of ex-

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24. HASSOL *supra* note 1, at 25.

25. *Id.*

26. Borgerson, *supra* note 3, at 63.

27. *Arctic Sea Ice Fallen by 50 Percent Since 1950s*, *supra* note 23.

28. Jarashow, *supra* note 12, at 1587.

29. *Id.*; Krauss, *supra* note 9.

30. *Arctic Melt Worse Than Predictions*, CNN.COM, May 2, 2007, <http://www.cnn.com/2007/TECH/science/05/02/arctic.ice/>; Richard A. Lovett, *Arctic Ice Melting Much Faster than Predicted*, NAT'L GEOGRAPHIC NEWS, May 1, 2007, <http://news.nationalgeographic.com/news/2007/05/070501-arctic-ice.html>.

31. Borgerson, *supra* note 3, at 63.

32. *Id.* at 69.

33. *Arctic Sea Ice Fallen by 50 Percent Since 1950s*, *supra* note 23.

34. Dube, *supra* note 4.

35. Borgerson, *supra* note 3, at 69-70; Dube, *supra* note 4.

plorers and navigators for hundreds of years.<sup>36</sup> Their wait may soon be over. The summer of 2007 marked the first time that satellite images recorded a period of ice-free water along the Northwest Passage.<sup>37</sup>

Another Arctic resource unlocked by the melting ice caps are minerals. According to an estimate by the U.S. Geological Survey (USGS), up to 25% of the earth's undiscovered oil and natural gas lies within the Arctic.<sup>38</sup> The USGS is currently conducting further investigations into the mineral resources within the Arctic.<sup>39</sup> The basins off the coast of Greenland are estimated to contain nine billion barrels of oil and eighty-six trillion cubic feet of gas.<sup>40</sup> The Alaskan Arctic coast is believed to have at least twenty-seven billion barrels of oil.<sup>41</sup> The greatest Arctic oil and gas reserves, however, are predicted to lie within the Russian-claimed subsoil.<sup>42</sup> According to the Russian Ministry of Natural Resources, Russia's coasts may contain up to 586 billion barrels of oil.<sup>43</sup>

Though the exact amounts of these resources remain undetermined, it is evident the Arctic contains resources that are extremely valuable. With access to these resources becoming a reality in the near future, determining sovereignty in the Arctic will become ever more crucial to resolving disputes.

### III. THE LOS CONVENTION: THE LEGAL FRAMEWORK FOR THE WORLD'S OCEANS

The primary legal source governing issues of sovereignty over the world's oceans is the United Nations Convention on the Law of the Sea (LOS Convention).<sup>44</sup> The LOS Convention is a comprehensive treaty dealing with a multitude of international law issues relating to the high seas and territorial and coastal areas, includ-

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36. Jarashow, *supra* note 12, at 1591; Dube, *supra* note 4.

37. John Roach, *Arctic Melt Opens Northwest Passage*, NAT'L GEOGRAPHIC NEWS, Sept. 17, 2007, <http://news.nationalgeographic.com/news/2007/09/070917-northwest-passage.html>; *Arctic Sea Ice Fallen by 50 Percent Since 1950s*, *supra* note 23.

38. Borgerson, *supra* note 3, at 67; Hotz, *supra* note 5.

39. Borgerson, *supra* note 3, at 68.

40. *Id.*

41. *Id.*

42. *Id.*

43. *Id.*

44. See LOS Convention, *supra* note 6. LOS Convention has been ratified by 158 nations at the time this Note went to press, including each of the nations with potential territorial claims to the Arctic except for the United States. See United Nations Div. for Ocean Affairs & the Law of the Sea [UNDOALS], Chronological Lists of Ratifications of, Accessions and Successions to the Convention and the Related Agreements as at 04 May 2009 [hereinafter LOS Convention Chronological Lists], [http://www.un.org/Depts/los/reference\\_files/chronological\\_lists\\_of\\_ratifications.htm#](http://www.un.org/Depts/los/reference_files/chronological_lists_of_ratifications.htm#) (last visited June 13, 2009). The impact of the U.S. not being a party to the treaty will be discussed *infra* in Part IV.

ing navigation rights, natural resource exploitation, and environmental responsibilities.<sup>45</sup> The treaty sets various boundaries extending from the coast to the high seas—internal waters, territorial waters, contiguous zone, exclusive economic zone, continental shelf limit, and international waters—and designates certain rights to the coastal nation accordingly.<sup>46</sup> The region of the Arctic without a national sovereign consists of mainly ice-covered ocean rather than land.<sup>47</sup> Thus, the LOS Convention governs that region.

*A. The Boundaries Set by the LOS Convention & Their Respective Sovereign Rights*

The LOS Convention provides that the waters on the landward side of the baseline are internal waters of the coastal state.<sup>48</sup> Baselines are a boundary normally determined by the low-water line along the coast.<sup>49</sup> However, if the coastline is deeply indented, has fringing islands, or is highly unstable, straight baselines may be used by joining two appropriate points.<sup>50</sup> Within this shallow zone of internal waters, the coastal state has full sovereignty.<sup>51</sup> The coastal nation is free to enjoy and regulate navigation and natural resource exploitation, while foreign nations lack rights of passage.<sup>52</sup>

Extending from the baseline outward twelve nautical miles is the territorial zone.<sup>53</sup> Within this region, the coastal state retains its right to regulate and use the natural resources.<sup>54</sup> Hence, the main distinction between territorial and internal waters is not the coastal nation's rights, but the rights of all other nations. Foreign nations have the right of "innocent passage" through the territorial zones of coastal nations.<sup>55</sup> The LOS Convention defines innocent passage as the "continuous and expeditious" traversing of the territorial sea without entering internal waters,<sup>56</sup> in a manner that is "not prejudicial to the peace, good order or security of the coastal

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45. See LOS Convention, *supra* note 6; Jay M. Zitter, Annotation, *Construction and Application of United Nations Convention on the Law of the Sea—Global Cases*, 21 A.L.R. FED. 2d. 109, 109 (2007).

46. LOS Convention, *supra* note 6.

47. See *id.* art. 234.

48. *Id.* art. 8.

49. *Id.* art. 5.

50. *Id.* art. 7(1). For a discussion of the straight baseline method, see *infra* Part IV.A.

51. See LOS Convention, *supra* note 6, arts. 2-3.

52. See *id.* arts. 17, 18(1).

53. *Id.* art. 3.

54. See *id.* art. 2.

55. *Id.* art. 17.

56. *Id.* art. 18.

State.”<sup>57</sup> The treaty then enumerates activities it deems prejudicial, including military activities, pollution, fishing, and research.<sup>58</sup> Thus, the territorial zone belongs to the coastal state with the limited, but important, exception that other nations may pass through the zone. For another twelve nautical miles past the territorial zone, or twenty-four nautical miles from the baseline, the coastal state has the right to enforce laws that prohibit smuggling or illegal immigration activities.<sup>59</sup> This area is known as the contiguous zone.<sup>60</sup>

Through its exclusive economic zone (EEZ) and continental shelf limit, the coastal nation’s special rights over the natural resources of the ocean stretch far beyond its territorial and contiguous zones. The LOS Convention states that within the EEZ, the coastal nation has “sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living, of the waters superjacent to the seabed and of the seabed and its subsoil . . . .”<sup>61</sup> The EEZ extends 200 nautical miles from the baseline.<sup>62</sup> Therefore, within an area of at least 200 nautical miles from its coast, a nation has the exclusive right to fish, drill for oil, conduct scientific research, test naval jets, build structures, or engage in other activities for economic gain. In addition, within its EEZ, the coastal nation is empowered with the jurisdiction to enact and enforce laws protecting the marine ecosystem.<sup>63</sup>

Finally, the continental shelf limit provides another possible extension of a coastal nation’s rights over exploration and exploitation of marine resources. If the nation’s continental margin extends past the 200 nautical mile boundary of its EEZ, then that nation’s continental shelf is considered to extend until the end of the continental margin.<sup>64</sup> However, regardless of the length of the continental margin, the continental shelf does not to extend more than 350 nautical miles past a nation’s baseline or 100 nautical miles from its 2500 metre isobaths.<sup>65</sup> A nation’s continental margin is the submerged land mass that is not actually the ocean floor,

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57. *Id.* art. 19.

58. *Id.* art. 19(2).

59. *See id.* art. 33.

60. *Id.*

61. *Id.* art. 56(1)(a).

62. *Id.* art. 57.

63. *Id.* art. 56(1)(b)(iii).

64. *Id.* art. 76. The Continental shelf for LOS Convention purposes is “a combined juridical and geological concept.” Can. Dep’t of Foreign Affairs & Int’l Trade [C DFAIT], Frequently Asked Questions, [http://www.international.gc.ca/Continental/faq.aspx?lang=eng&menu\\_id=24&menu=R](http://www.international.gc.ca/Continental/faq.aspx?lang=eng&menu_id=24&menu=R) (last visited June 13, 2009).

65. LOS Convention, *supra* note 6, art. 76(5).

but rather the “natural prolongation of its land territory.”<sup>66</sup> The significance of the continental shelf limit is that the LOS Convention provides a coastal nation with exclusive rights to explore and exploit certain natural resources within the continental shelf’s seabed or subsoil.<sup>67</sup> These resources include nonliving resources found in the seabed and subsoil, such as minerals, and living organisms found therein belonging to sedimentary species.<sup>68</sup> These sovereign rights, however, do not extend to the water column above the continental margin.<sup>69</sup> Thus, a coastal nation’s sovereign rights to drill for oil and natural gas, as well as other natural resources, could extend 350 nautical miles from its baseline or an additional 150 nautical miles past its EEZ.<sup>70</sup>

### *B. The Commission on the Limits of the Continental Shelf*

A coastal nation is responsible for determining the breadth of its continental margin for purposes of ascertaining its continental shelf limit under the LOS Convention. The treaty provides geological specifications that the nation must prove to establish the outer limit of its continental shelf<sup>71</sup>—where the national land mass ends and the ocean floor begins. After collecting data and making graphical representations, the nation then submits its findings to the Commission on the Limits of the Continental Shelf (hereinafter “the Commission”), an organization established by Annex II of the treaty.<sup>72</sup> The Commission is comprised of twenty-one geological, geophysical, or hydrographic experts elected by the state-parties to the LOS Convention.<sup>73</sup> The duties of the Commission are twofold: to provide scientific and technical advice to nations pre-

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66. *Id.* art. 76; *see also* Comm’n on the Limits of the Continental Shelf [CLCS], The Definition of the Continental Shelf and the Criteria for Establishment of Its Outer Limits, [http://www.un.org/Depts/los/clcs\\_new/continental\\_shelf\\_description.htm](http://www.un.org/Depts/los/clcs_new/continental_shelf_description.htm) (last visited June 13, 2009).

67. LOS Convention, *supra* note 6, art. 77. The coastal nation does not have to actually exercise its rights or occupy the continental shelf in order to maintain its sovereignty over the exploration and exploitation of natural resources therein. *Id.* art. 77(2)-(3). The rights are exclusive because no other nation can exercise them without the coastal nation’s express authorization. *See id.* art. 77(2).

68. *Id.* art. 77(4).

69. *Id.* art. 78(1).

70. In fact, because of the other alternatives for the limit of a nation’s continental shelf—such as 100 miles from its 1,500 metre isobaths, of which criteria the coastal nation can choose, it is possible for a nation’s continental shelf for LOS Convention purposes to extend beyond 350 nautical miles from its baseline. CDFAIT, Frequently Asked Questions, *supra* note 64.

71. *See* LOS Convention, *supra* note 6, art. 76(7).

72. *Id.* art. 76(8).

73. LOS Convention, *supra* note 6, Annex II, art. 2(1). The commission members serve five-year terms, after which the member is eligible for re-election. *Id.* art. 2(4).

paring submissions and to review submissions and make recommendations regarding the breadth of a coastal nation's continental shelf.<sup>74</sup>

Compiling and evaluating the bathymetric, seismic, and geophysical data necessary for a submission to the Commission is a great undertaking for a coastal nation.<sup>75</sup> Annex II sets a ten-year time limit, which begins tolling from the date the nation ratifies the treaty, for the nation to make its submission.<sup>76</sup> However, the Commission has allowed time extensions, mainly to accommodate developing countries.<sup>77</sup> Upon receipt of a nation's submission, the Commission convenes a sub-commission assigned to the submission.<sup>78</sup> The sub-commission reviews the data and makes a recommendation to the Commission, which in turn makes its recommendation and submits it in writing to the coastal nation and the United Nations Secretary-General.<sup>79</sup> If the Commission's recommendation is not in agreement with the coastal nation's submission, then the coastal nation is afforded "reasonable time" to gather more data and revise its submission.<sup>80</sup> Thus, this process of gathering data and making submissions is intended to establish apolitical, scientific evidence of the delineation of nations' continental shelves with the goal of preventing or decreasing possible uncertainty or disagreements.<sup>81</sup>

Though the Commission's recommendation provides scientific determinacy on the *delineation* of a nation's extended continental shelf, it does not resolve issues of *delimitation*. Article 9 of Annex II reiterates the statement in LOS Convention, Article 76(10), and states that the Commission's recommendations "shall not prejudice matters relating to *delimitation* of boundaries between States with opposite or adjacent coasts".<sup>82</sup> This mandate conveys the under-

74. *Id.* Annex II, art. 3.

75. See UNDOALS, Issues with Respect to Article 4 of Annex II of the Convention (Ten-Year Time Limit for Submissions), [http://www.un.org/Depts/los/clcs\\_new/issues\\_ten\\_years.htm](http://www.un.org/Depts/los/clcs_new/issues_ten_years.htm) (last visited June 13, 2009).

76. LOS Convention, *supra* note 6, Annex II, art. 4. In addition, nations that entered the treaty before the Commission's adoption of the Scientific and Technical Guidelines on May 13, 1999 are allowed to make submissions until May 13, 2009 (ten years after the Guidelines' adoption). CDFAIT, Frequently Asked Questions, *supra* note 64.

77. UNDOALS, Issues with Respect to Article 4 of Annex II of the Convention (Ten-Year Time Limit for Submissions), *supra* note 75.

78. LOS Convention, *supra* note 6, Annex II, art. 5.

79. *Id.* Annex II, art. 6.

80. *Id.* Annex II, art. 8.

81. See Sara Cockburn et al., Intertwined Uncertainties: Policy and Technology on the Juridical Continental Shelf 5-7 (2001) (paper presented at the Ablos Conference on "Accuracies and Uncertainties in Maritime Boundaries and Outer Limits," International Hydrographic Bureau, Monaco, France, Oct. 18-19, 2001), <http://www.gmat.unsw.edu.au/ablos/ABLOS01Folder/COCKBURN.PDF>.

82. LOS Convention, *supra* note 6, Annex II, art. 9; LOS Convention, *supra* note 5,

standing that multiple nations often share continental shelf land mass and thus may have overlapping extended continental shelf claims.<sup>83</sup> The recommendations of the Commission merely provide the scientific location of the shelf's outer limit, leaving the ultimate determination of the maritime boundary to the submitting nation.<sup>84</sup> If there is a dispute between neighboring or opposite nations over the delimitation of their extended continental shelf boundaries, the Commission is not the forum for their resolution. Instead, the Commission's role is one of a "legitimator."<sup>85</sup> The nation's proclaimed boundary, marking the limit of its continental shelf, is given significant legitimacy if the boundary is in agreement with the Commission's recommendation.<sup>86</sup> Conversely, if the boundary conflicts with the Commission's recommendation, the nation's claim is more discredited.<sup>87</sup>

#### IV. THE PLAYERS & THE CURRENT STATUS OF THEIR CLAIMS

There are eight countries with the geographic potential to make continental shelf claims to regions of the Arctic: Canada, Denmark (including its territory of Greenland and its province of the Faeroes Island),<sup>88</sup> Finland, Iceland, Norway, Sweden, the Russian Federation, and the United States of America.<sup>89</sup> The following discussion will address the current positions of the five leading Arctic powers: Canada, Denmark, Norway, Russia, and the U.S. The aforementioned warming of the Arctic climate has transformed this region into a territorial treasure trove, with each of these five nations claiming to be the finder. The resolution of these claims will not just shape the future of the Arctic territorially, but

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art. 76(10) (emphasis added).

83. Alex G. Oude Elferink & Constance Johnson, *Outer Limits of the Continental Shelf and "Disputed Areas": State Practice Concerning Article 76(10) of the LOS Convention*, 21 INT'L J. MARINE & COASTAL L. 461, 464 (2006).

84. *Id.*

85. Cockburn, *supra* note 81, at 9.

86. *Id.*

87. *Id.*

88. See Rob Huebert, *Northern Interests and Canadian Foreign Policy 12-13* (2006), <http://www.cdfai.org/PDF/Northern%20Interests%20and%20Canadian%20Foreign%20Policy.pdf>.

89. Adam Wolfe, *Russian Claims to Pole Foreshadow More Arctic Disputes to Come*, WORLD POL. REV., Aug. 13, 2007, available at <http://www.worldpoliticsreview.com/Article.aspx?id=1019>. The exact southern boundary of the Arctic is contested. Commonly, researchers use the Arctic Circle, which "is an imaginary line that marks the latitude above which the sun does not set on the day of the summer solstice (usually 21 June) and does not rise on the [sic] day of the winter solstice (usually 21 December)." Nat'l Snow & Ice Data Ctr., *What is the Arctic?*, [http://nsidc.org/arcticmet/basics/arctic\\_definition.html](http://nsidc.org/arcticmet/basics/arctic_definition.html) (last visited June 14, 2009).

also environmentally and ecologically.<sup>90</sup>

A. *Canada's Claims to the Arctic*

Canada is the world's second largest circumpolar country.<sup>91</sup> The extensive coastline of northern Canada and many of the islands of the Arctic Ocean fringing this coast are unequivocally Canadian territory.<sup>92</sup> However, little else regarding Canadian Arctic territory is so resolute—not even its starting point, the baselines.<sup>93</sup> Rather than the usual baselines determined by the low water line,<sup>94</sup> Canada has drawn straight baselines around its Arctic Archipelago.<sup>95</sup> Thus, Canada asserts that the straits between these islands, which are an essential route along the Northwest Passage, are internal waters and not subject to the right of innocent passage.<sup>96</sup> This assertion, effectively enclosing the Northwest Passage as Canadian internal waters<sup>97</sup> and giving Canada the right to exclude foreign ships or charge them tolls for their passage, is one of four main international disputes concurring Canada's Arctic sovereignty.<sup>98</sup>

Though the Northwest Passage currently receives little marine traffic due to its thick ice cover, the United States and other nations hope to utilize the marine passage for shipping oil and other resources from their Arctic territories in the future. The U.S. and

90. See Arctic Council, *An Arctic War is Getting Closer* (Mar. 5, 2008), [http://arctic-council.org/article/2008/3/an\\_arctic\\_war\\_is\\_getting\\_closer](http://arctic-council.org/article/2008/3/an_arctic_war_is_getting_closer).

91. GOVERNMENTS OF YUKON, NORTHWEST TERRITORIES & NUNAVUT, *DEVELOPING A NEW FRAMEWORK FOR SOVEREIGNTY AND SECURITY IN THE NORTH 1* (Apr. 2005), [http://www.gov.nt.ca/research/publications/pdfs/sovereignty\\_and\\_security\\_in\\_the\\_north.pdf](http://www.gov.nt.ca/research/publications/pdfs/sovereignty_and_security_in_the_north.pdf).

92. *Id.* at 12.

93. See *id.*

94. LOS Convention, *supra* note 6, art. 5.

95. Duncan E.J. Currie, *Sovereignty and Conflict in the Arctic Due to Climate Change: Climate Change and the Legal Status of the Arctic Ocean* 4-5 (Aug. 5, 2007) (unpublished paper), <http://www.globelaw.com/LawSea/arctic%20claims%20and%20climate%20change.pdf>. If the coastline of the coastal state meets certain criteria enumerated in LOS Convention, then the coastal state may employ "straight baselines" rather than the normal baselines marked by the low-water line. Article 7 states that "where the coastline is deeply indented and cut into, or if there is a fringe of islands along the coast in its immediate vicinity, the method of straight baselines joining appropriate points may be employed in drawing the baseline from which the breadth of the territorial sea is measured." LOS Convention, *supra* note 6, art. 7. The straight baseline method is also allowed when the coastline is "highly unstable" due to the presence of a delta or "other natural conditions." *Id.* However, straight baselines may not differ significantly from the general direction of the coastline and may not be drawn to block another coastal nation's territorial zone from the high seas or its EEZ. *Id.*

96. Currie, *supra* note 95, at 5; Jarashow, *supra* note 12, at 1597-1600.

97. See Jarashow, *supra* note 12, at 1603-04.

98. Rob Huebert, *Security in the Canadian North: Changing Concerns and Options*, FRASER F., May 2004, at 10, 11, available at [http://www.fraserinstitute.org/Commerce.Web/product\\_files/May04ffHuebert.pdf](http://www.fraserinstitute.org/Commerce.Web/product_files/May04ffHuebert.pdf).

several European nations maintain<sup>99</sup> that even if Canada appropriately drew the straight baselines encompassing the Arctic Archipelago, the waterways of this island cluster are nonetheless a “strait used for international navigation” giving all other nations the right of innocent passage.<sup>100</sup> The LOS Convention provides that internal waters of bordering coastal nations are not normally part of international straits, except where a coastal nation used the straight baseline method.<sup>101</sup> Thus, waters that would otherwise be part of the nation’s territorial or contiguous zones become part of the nation’s internal waters.<sup>102</sup> Along with the requirement that no other sea route of similar convenience exist, the U.S. claims that the waters of the Arctic Archipelago meet this exception and are thus an international strait through which watercrafts of all nations possess the right of innocent passage.<sup>103</sup>

Until recently, Canada and the U.S. were content to agree to disagree on the issue due to the near impossibility of navigating the ice-covered waterways.<sup>104</sup> However, with melting sea ice, the Northwest Passage promises future viability as a sea route, which in turn indicates that a resolution to the territorial classification of this waterway will soon be necessary.<sup>105</sup> According to the International Court of Justice (ICJ)<sup>106</sup> in the Corfu Channel Case,<sup>107</sup> there are two criteria that determine a waterway’s classification as an international strait: “(1) geography, meaning that the strait connected either two areas of high seas or two EEZs; and (2) functionality, the usage or traffic traveling across the strait’s waters.”<sup>108</sup> Many commentators consider the geographical element to be satisfied by the Northwest Passage, as the route connects oceans and

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99. See ROBERT DUFRESNE, LAW & GOV’T DIV., PARL. INFO. & RES. SERV. (CAN.), CONTROVERSIAL CANADIAN CLAIMS OVER ARCTIC WATERS AND MARITIME ZONES 5 (Jan. 10, 2008), available at <http://www2.parl.gc.ca/Content/LOP/ResearchPublications/prb0747-e.pdf>.

100. LOS Convention, *supra* note 6, art. 36 (emphasis in original); Jarashow, *supra* note 12, at 1603-04.

101. LOS Convention, *supra* note 6, art. 35.

102. See *id.* arts. 34-36.

103. Woodrow Wilson Int’l Ctr. for Scholars, Canada and the Arctic: The Issue of Northern Sovereignty (summary of conference held on December 11, 2007), [http://www.wilsoncenter.org/index.cfm?topic\\_id=236266&fuseaction=topics.event\\_summary&event\\_id=278388](http://www.wilsoncenter.org/index.cfm?topic_id=236266&fuseaction=topics.event_summary&event_id=278388) (last visited June 14, 2009).

104. *Id.*

105. Woodrow Wilson Int’l Ctr. for Scholars, *supra* note 103.

106. “The International Court of Justice (ICJ) is the principal judicial organ of the United Nations (UN). It was established in June 1945 by the Charter of the United Nations.” Int’l Court of Justice, The Court, <http://www.icj-cij.org/court/index.php?p1=1&PHPSESSID=bcfaf9c833245dc76d44cca01d4b74b1> (last visited June 14, 2009).

107. Corfu Channel (U.K. v. Alb.), 1949 I.C.J. 4 (Apr. 9).

108. Jarashow, *supra* note 12, at 1604, 1605.

EEZs.<sup>109</sup> However, the functionality element is not as easily determined because the degree of usage required to meet the standard has not been enunciated by the ICJ.<sup>110</sup> The functionality element weakens the case for the Northwest Passage's classification as an international strait as this waterway's historically harsh environment limits traffic.<sup>111</sup> In any case, Canada and the U.S., along with other countries claiming the Northwest Passage as an international strait, will be forced to come to an agreement about this waterway in the near future.

Secondly, Canada and the U.S. are in disagreement over the division of the Beaufort Sea.<sup>112</sup> Canada asserts the maritime border between the Yukon and Alaska is a linear extension of the land, whereas the U.S. claims the border is at right angles to the coast.<sup>113</sup> With the oil and gas reserves estimated to lie within this wedge of ocean, neither country is likely to retreat from its territorial claim.<sup>114</sup> Some sources assert that a joint-management scheme allowing both nations access to minerals in the disputed area is a relatively simple solution.<sup>115</sup> However, past attempts to negotiate similar agreements between Canada and the U.S. have failed.<sup>116</sup> Given the potential value of the territory at stake, future negotiations for a joint-management scheme are unlikely to succeed.<sup>117</sup>

Thirdly, Canada and Denmark have disputed the sovereignty of Hans Island, a 1.3 kilometer "rock," since the 1970s.<sup>118</sup> Hans Island, whose inhabitants are mainly seals and polar bears, is located between the coasts of Canada's Ellesmere Island and the northern tip of Greenland.<sup>119</sup> The island is important because of its location in the center of the Kennedy Channel, a key waterway of the Northwest Passage and because of the oil reserves that may lie beneath it.<sup>120</sup> In addition, Canadian policy analysts consider Canada's unyielding position with Hans Island as an indication to the international community that it intends to firmly maintain all of

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109. *Id.* at 1605.

110. *See id.* at 1606.

111. *See discussion supra* Part II.

112. Huebert, *Security in the Canadian North: Changing Concerns and Options*, *supra* note 98, at 11.

113. *Id.* at 11; Currie, *supra* note 95, at 5.

114. Huebert, *Northern Interests and Canadian Foreign Policy*, *supra* note 88.

115. *Id.* at 8; Woodrow Wilson Int'l Ctr. for Scholars, *supra* note 103.

116. Woodrow Wilson Int'l Ctr. for Scholars, *supra* note 103.

117. Huebert, *Northern Interests and Canadian Foreign Policy*, *supra* note 88, at 8-9.

118. Huebert, *Security in the Canadian North: Changing Concerns and Options*, *supra* note 98, at 11; Currie, *supra* note 95, at 9; Jarashow, *supra* note 12, at 1593.

119. William Underhill, *The North Pole Heats Up*, *NEWSWEEK INT'L*, Dec. 2005, at 42.

120. Jarashow, *supra* note 12, at 1593-94.

its Arctic territorial claims.<sup>121</sup>

The fourth Canadian Arctic territorial dispute, and possibly the one with the greatest ramifications, is over the northern continental shelf.<sup>122</sup> The potential breadth of the Canadian northern continental shelf could collide in the high north with the continental shelves of Russia, Denmark, and the U.S.<sup>123</sup> Determinations of the outer limits of each nation's continental shelf under the LOS Convention will be essential in resolving this heated dispute.<sup>124</sup> Canada ratified the LOS Convention in November 2003<sup>125</sup> and therefore has until November of 2013 to submit a continental shelf claim to the Commission.<sup>126</sup> Canada has not completed its submission; however, following ratification of the LOS Convention, it has not delayed in beginning its geological research program to determine the breadth of its continental shelf.<sup>127</sup> In 2004, Canada announced its federal budget of \$70 million to fund its ocean mapping project.<sup>128</sup> Joint responsibility for the project is shared by three federal agencies—the Department of Foreign Affairs and International Trade, Natural Resources Canada, and Fisheries and Oceans Canada.<sup>129</sup> Since the announcement, an additional \$20 million has been reportedly allocated to the program.<sup>130</sup> Currently, the Canadian government estimates that the breadth of its continental shelf beyond its EEZ covers 1.7 million kilometers.<sup>131</sup> Canadian

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121. See Huebert, *Security in the Canadian North: Changing Concerns and Options*, *supra* note 98, at 10. See also Jarashow, *supra* note 12, at 1593-94; *Hans Island the Tip of Iceberg in Arctic Claims*, CTV.CA NEWS, July 31, 2005, [http://www.ctv.ca/servlet/ArticleNews/story/CTVNews/1122832179594\\_34/?hub=TopStories](http://www.ctv.ca/servlet/ArticleNews/story/CTVNews/1122832179594_34/?hub=TopStories); Alexander Rubin, Op-Ed, *Hands off Hans Island*, CAN. FREE PRESS, July 27, 2005, <http://www.canadafreepress.com/2005/rubin072705.htm>.

122. Huebert, *Northern Interests and Canadian Foreign Policy*, *supra* note 88, at 11.

123. *Id.*

124. *Id.*

125. According to the United Nations web site for the Oceans and the Law of the Sea, Canada ratified UNLCOS on November 7, 2003. See LOS Convention Chronological Lists, *supra* note 44. However, the Foreign Affairs and International Trade Canada web site states that Canada ratified the treaty on November 6, 2003. Canada's Extended Continental Shelf, <http://www.international.gc.ca/continental/index.aspx?lang=eng> (last visited June 14, 2009).

126. Lee Berthiaume, *Icebreaker Replacement Deadline Looms*, EMBASSY (Ottawa), Feb. 27, 2008, at 1, 10, available at <http://embassymag.ca/pdf/view/2008-02-27>.

127. See CDFAIT, *Defining Canada's Continental Shelf*, [http://www.international.gc.ca/continental/limits-continental-limités.aspx?lang=eng&menu\\_id=20&menu=R](http://www.international.gc.ca/continental/limits-continental-limités.aspx?lang=eng&menu_id=20&menu=R) (last visited June 14, 2009).

128. See Berthiaume, *supra* note 126, at 10.

129. See CDFAIT, *Defining Canada's Continental Shelf*, *supra* note 127.

130. See Berthiaume, *supra* note 126.

131. CDFAIT, *Frequently Asked Questions*, *supra* note 64. One square kilometer equals 0.386102158542446 square miles. CalculateMe.com, *Convert Square Kilometers to Square Miles*, <http://calculateme.com/Area/SquareKilometers/ToSquareMiles.htm> (last visited June 14, 2009). Thus, Canada estimates that its Continental shelf extends 656,373.70 square miles beyond its EEZ.

scientists are working to prove that the Alpha Ridge, a 2000 kilometer-long chain of underwater mountains, is part of this Canadian northern continental shelf.<sup>132</sup> However, the Alpha Ridge may be part of the Mendeleev Ridge, which is a submerged Arctic mountain chain that extends north from Siberia, and thus claimed by Russia to be the natural prolongation of its continental margin.<sup>133</sup> Furthermore, the “Alpha-Mendeleev Ridge” may be part of the underwater mountain range containing the Lomonosov Ridge, currently claimed by Russia<sup>134</sup> and claimed to possibly belong to Denmark as well.<sup>135</sup> Still, another possibility endorsed by the U.S. and others is that neither the Alpha nor the Mendeleev Ridge is comprised of continental land mass, but is actually volcanic in origin, formed by magma millions of years ago independently of the American and Eurasian continents.<sup>136</sup> Canada recognizes the importance of resolving these continental shelf controversies within the ambits of international law (*i.e.*, the LOS Convention), and has made efforts to keep negotiations open with the United States, Russia,<sup>137</sup> and Denmark regarding their overlapping Arctic interests.<sup>138</sup> However, considering what is at stake, international Arctic relations remain tense.<sup>139</sup>

### B. *The Russian Federation’s Claims to the Arctic*

Leading the way on December 20, 2001, Russia was the first nation to submit its extended continental shelf claim.<sup>140</sup> The inter-

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132. Randy Boswell, *Canadian Expedition Seeks to Prove Claim on Underwater Ridge*, NAT’L POST (Toronto), Feb. 15, 2008, available at <http://www.nationalpost.com/news/canada/story.html?id=311913>.

133. *Id.*

134. *See id.*

135. CDFAIT, International Collaboration, [http://www.international.gc.ca/continental/collaboration.aspx?lang=eng&menu\\_id=23&menu=R](http://www.international.gc.ca/continental/collaboration.aspx?lang=eng&menu_id=23&menu=R) (last visited June 14, 2009); Currie, *supra* note 95, at 1.

136. *See United States of America: Notification Regarding the Submission Made by the Russian Federation to the Commission on the Limits of the Continental Shelf*, at 2, Ref. No. CLCS.01.2001.LOS/USA (Mar. 18, 2002) (attaching U.S. submission dated February 28, 2002), available at [http://www.un.org/Depts/los/clcs\\_new/submissions\\_files/rus01/CLCS\\_01\\_2001\\_LOS\\_USAtext.pdf](http://www.un.org/Depts/los/clcs_new/submissions_files/rus01/CLCS_01_2001_LOS_USAtext.pdf); Placer Gold Corp., Property, <http://www.arcticoag.com/documents/property.html> (last visited June 14, 2009). Placer Gold Corporation, formerly the Arctic Oil & Gas Corporation, is an “oil exploration venture company” seeking the exclusive rights to exploit oil and gas in the high Arctic. It argues that the high Arctic, including several potentially oil-rich mountain ranges, is an “Arctic Oceans Commons Deep sea bed.” *Id.*

137. CDFAIT, Joint Statement of Canada-Russia Economic Cooperation of November 28-29, 2007, [http://www.international.gc.ca/commerce/zubkov/joint\\_state-en.asp](http://www.international.gc.ca/commerce/zubkov/joint_state-en.asp) (last visited June 14, 2009).

138. DUFRESNE, *supra* note 99, at 15.

139. *See, e.g.*, Borgerson, *supra* note 3 at 71, 73-74; Dube, *supra* note 4; Krauss, *supra* note 9; Jarashow, *supra* note 12, at 1588; Currie, *supra* note 95, at 1.

140. Press Release, CLCS, Commission on the Limits of the Continental Shelf Receives

national community received the bold claim to nearly half of the Arctic Ocean with condemnation.<sup>141</sup> Russia's submission declared 1.2 million square kilometers of Arctic territory stretching through the North Pole, including the potentially oil<sup>142</sup> and gas-rich Lomonosov and Alpha-Mendeleev Ridges.<sup>143</sup> This is about the size of Texas, California, and Indiana combined.<sup>144</sup> Canada, Denmark, the U.S., and Norway could also claim portions of this region.<sup>145</sup> Each of the other four Arctic powers made an official response to the Commission regarding Russia's submission. Canada and Denmark tersely commented that more information was needed to make a recommendation regarding the delineation of the Russian extended continental shelf, while carefully reminding the Commission of its obligation under the LOS Convention to make recommendations without prejudicing the claims of bordering countries.<sup>146</sup> Norway and the U.S. were not as subtle. Norway declared a "maritime dispute" under the Commission's Rules of Procedure regarding portions of Russia's territorial claim,<sup>147</sup> while the U.S.

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Its First Submission: Russian Federation First to Move to Establish Outer Limits of Its Extended Continental Shelf, U.N. Doc. SEA/1729 (Dec. 21, 2001), [www.un.org/News/Press/docs/2001/sea1729.doc.htm](http://www.un.org/News/Press/docs/2001/sea1729.doc.htm).

141. See Jarashow, *supra* note 12, at 1595; Underhill, *The North Pole Heats Up*, *supra* note 119.

142. Jarashow, *supra* note 12, at 1595. 1.2 million square kilometers is equal to approximately 463,322.59 square miles. CalculateMe.com, *supra* note 131.

143. *United States of America: Notification Regarding the Submission Made by the Russian Federation to the Commission on the Limits of the Continental Shelf*, *supra* note 136, at 2-3.

144. Borgerson, *supra* note 3, at 63.

145. See Jarashow, *supra* note 12, at 1595.

146. *Canada: Notification Regarding the Submission Made by the Russian Federation to the Commission on the Limits of the Continental Shelf*, at 2, Ref. No. CLCS.01.2001.LOS/CAN (Feb. 26, 2002) (attaching Canadian submission dated January 18, 2002), available at [http://www.un.org/Depts/los/clcs\\_new/submissions\\_files/rus01/CLCS\\_01\\_2001\\_LOS\\_CANtext.pdf](http://www.un.org/Depts/los/clcs_new/submissions_files/rus01/CLCS_01_2001_LOS_CANtext.pdf); *Denmark: Notification Regarding the Submission Made by the Russian Federation to the Commission on the Limits of the Continental Shelf*, Ref. No. CLCS.01.2001.LOS/DNK (Feb. 26, 2002) (attaching Danish submission dated February 4, 2002), available at [http://www.un.org/Depts/los/clcs\\_new/submissions\\_files/rus01/CLCS\\_01\\_2001\\_LOS\\_DNKtext.pdf](http://www.un.org/Depts/los/clcs_new/submissions_files/rus01/CLCS_01_2001_LOS_DNKtext.pdf).

147. *Norway: Notification Regarding the Submission Made by the Russian Federation to the Commission on the Limits of the Continental Shelf*, Ref. No. CLCS.01.2001.LOS/NOR (Apr. 2, 2002) (quoting Rule 5(a) of Annex I to CLCS, Rules of Procedure of the Commission on the Limits of the Continental Shelf, U.N. Doc. CLCS/40/Rev.1 (Apr. 17, 2008) [hereinafter CLCS Rules of Procedure], available at <http://daccessdds.un.org/doc/UNDOC/GEN/N08/309/23/PDF/N0830923.pdf>) (attaching Norwegian submission dated March 20, 2002), available at [http://www.un.org/depts/los/clcs\\_new/submissions\\_files/rus01/CLCS\\_01\\_2001\\_LOS\\_NORtext.pdf](http://www.un.org/depts/los/clcs_new/submissions_files/rus01/CLCS_01_2001_LOS_NORtext.pdf). A "maritime dispute" is a term of art where an adjacent or opposite nation to the submitting coastal nation disagrees with the submitting coastal nation's proposed outer limit of its Continental shelf for purposes of delimitation of the nations' respective maritime boundaries. CLCS Rules of Procedure, *supra*, Annex I, Rule 5(a). Declaring an area of another coastal nation's submission a "maritime dispute" triggers the restriction on the commission to refrain from reviewing the submission until the nation declaring the dispute gives its consent. *Id.*

described Russia's submission as having "major flaws."<sup>148</sup> Ultimately, the Commission decided that additional scientific data was needed for it to make a recommendation on the outer limit of Russia's continental shelf.<sup>149</sup>

Since Russia received instructions to collect more information and submit a revised extended continental shelf submission, it has not retreated from its bold claims. To support its assertion that "[t]he Arctic is Russian," in the summer of 2007 Russia sent an expedition to plant its flag deep in the seabed of the North Pole.<sup>150</sup> With its fleet of eighteen Arctic-worthy icebreakers<sup>151</sup>, Russia further bolsters to the international community its intention to remain firm. However, Russia has also made efforts to abide by international law and maintain relations with its Arctic neighbors. Russia has been a state-party to the LOS Convention for over ten years<sup>152</sup> and was the first nation to utilize the mechanisms provided in the treaty for claiming an extended continental shelf.<sup>153</sup> In November 2007, the Russian prime minister visited Canada and affirmed its commitment to diplomacy regarding Arctic territorial issues.<sup>154</sup>

### C. Norway's Claims to the Arctic

On November 27, 2006, Norway became the second and only other Arctic nation besides Russia to submit an extended continental shelf claim to the Commission.<sup>155</sup> Norway's submission would

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148. *United States of America: Notification Regarding the Submission Made by the Russian Federation to the Commission on the Limits of the Continental Shelf*, *supra* note 136, at 2.

149. The Secretary-General, *Report of the Secretary-General on Oceans and the Law of the Sea*, ¶ 38-41, delivered to the Security Council and the General Assembly, U.N. Doc. A/57/57 (Mar. 7, 2002), available at <http://daccessdds.un.org/doc/UNDOC/GEN/N02/276/17/PDF/N0227617.pdf>.

150. Paul Reynolds, *Russia Ahead in Arctic 'Gold Rush'*, BBC NEWS, Aug. 1, 2007, [http://news.bbc.co.uk/2/hi/in\\_depth/6925853.stm](http://news.bbc.co.uk/2/hi/in_depth/6925853.stm) (quoting famed Russian explorer Artur Chilingarov, who led the flag-planting expedition). The international community mostly considered the flag-planting expedition as "grandstanding" and without legal significance. Patricia Brett, *Global Warming Opens Arctic Seabed to the Search for Oil and Gas*, N.Y. TIMES, Oct. 30, 2007, available at <http://www.nytimes.com/2007/10/30/business/worldbusiness/30iht-renarct.4.8118665.html>; Elisabeth Walaas, State Sec'y, Nor. Ministry of Foreign Affairs, Norway's Policy in the High North—The Arctic Dimension (Jan. 21, 2008), [http://www.regjeringen.no/en/dep/ud/About-the-Ministry/Other-political-staff/elisabeth\\_walaas/Speeches-and-articles/2008/Norways-Policy-in-the-High-North-the-Ar.html?id=497558](http://www.regjeringen.no/en/dep/ud/About-the-Ministry/Other-political-staff/elisabeth_walaas/Speeches-and-articles/2008/Norways-Policy-in-the-High-North-the-Ar.html?id=497558).

151. Borgerson, *supra* note 3, at 64.

152. See LOS Convention Chronological Lists, *supra* note 44.

153. See CLCS, The Definition of the Continental Shelf and the Criteria for Establishment of Its Outer Limits, *supra* note 66.

154. CDFAIT, Joint Statement of Canada-Russia Economic Cooperation of November 28-29, 2007, *supra* note 137.

155. Press Release, CLCS, *supra* note 140.

extend its continental shelf by 250,000 square kilometers, including an area lying beneath the Norwegian Sea, called the Banana Hole, and an area under the Barents Sea, called the Loop Hole.<sup>156</sup> The Banana Hole is believed to be part of the continental shelves of Norway, Iceland, the Faroe Islands (an autonomous province of Denmark), and Greenland (a territory of Denmark).<sup>157</sup> On September 20, 2006, acknowledging that determining the breadth of this continental shelf is in the best interest of each nation, representatives from these nations signed the Agreed Minutes regarding the delimitation of the continental shelf limits within the Banana Hole.<sup>158</sup> The agreement set out procedures for further determinations of maritime boundaries in this area with the final determinations to be set by future bilateral agreements.<sup>159</sup> In accordance with the agreement, after Norway submitted its extended shelf submission to the Commission, Denmark and Iceland submitted official statements to the United Nations stating that they did not object to Norway's claim regarding the Banana Hole region.<sup>160</sup> Unfortunately, the cooperative relations between these nations were not shared by Russia. In response to the Norwegian submission, Russia declared the region of the Barents Sea claimed by Norway, including the Loop Hole, to be a "maritime dispute" pursuant to the Commission's Rules of Procedure.<sup>161</sup> The Commission has yet to make a recommendation on the Norwegian submission.<sup>162</sup> It is uncertain whether the Commission's forthcoming decision will bring finality to the disputed area between Norway and Russia or if it will only add fuel to the fire.

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156. Brett, *supra* note 150.

157. *Id.*

158. *Note from Iceland to the Secretary-General of the UN in Reference to Receipt of Submission by Norway*, Ref. No. FNY07010008/97.B.512 (Jan. 29, 2007), available at [http://www.un.org/Depts/los/clcs\\_new/submissions\\_files/nor06/isl07\\_00223.pdf](http://www.un.org/Depts/los/clcs_new/submissions_files/nor06/isl07_00223.pdf); see also Brett, *supra* note 150.

159. Press Release, Nor. Mission to U.N., Agreement on Continental Shelf in the Norwegian Sea (Sept. 20, 2006), <http://www.norway-un.org/News/Archive+2006/Important+agreement.htm>.

160. *Note from Denmark to the Secretary-General of the U.N. in Reference to Receipt of Submission by Norway*, Ref. No. 119.N.8 (Jan. 24, 2007), available at [http://www.un.org/Depts/los/clcs\\_new/submissions\\_files/nor06/dnk07\\_00218.pdf](http://www.un.org/Depts/los/clcs_new/submissions_files/nor06/dnk07_00218.pdf); *Note from Iceland to the Secretary-General of the U.N. in Reference to Receipt of Submission by Norway*, *supra* note 158.

161. *Note from the Russian Federation to the Secretary-General of the U.N. in Reference to Receipt of Submission by Norway*, Ref. No. 82/n (Feb. 21, 2007) (unofficial translation), available at [http://www.un.org/Depts/los/clcs\\_new/submissions\\_files/nor06/rus\\_07\\_00325.pdf](http://www.un.org/Depts/los/clcs_new/submissions_files/nor06/rus_07_00325.pdf) (following CLCS Rules of Procedure, *supra* note 147, Annex I, Rule 5(a)). For a discussion defining and describing the effect a country declaring a "maritime dispute," see *supra* note 147 and accompanying text.

162. See The Chairman of CLCS, *Statement on the Progress of Work in the Commission*, at 7, U.N. No. CLCS/56 (Oct. 4, 2007), available at <http://daccessdds.un.org/doc/UNDOC/GEN/N07/529/89/PDF/N0752989.pdf>.

#### D. Denmark's Claims to the Arctic

Geographically, the Kingdom of Denmark is not within the Arctic region. However, because of its territory, Greenland, and its province, the Faroe Islands, Denmark's potential claims to the Arctic are extensive. In fact, the Danish claim that their Arctic territory may extend from Greenland up to the North Pole via the potentially oil-rich Lomonosov Ridge.<sup>163</sup> Denmark's deadline to make its submission to the Commission is November 2014.<sup>164</sup> In preparation of its extended continental shelf claim, Denmark's Ministry for Science, Technology and Innovation launched the Danish Continental Shelf Project charged with compiling the necessary geological data and funded it with \$42 million.<sup>165</sup> The Danish Continental Shelf Project asserts five possible claim regions off the coast of Greenland and the Faroe Islands and is actively investigating those areas.<sup>166</sup> On its current mission, called Lomrog or "Lomonosov Ridge Off Greenland," the Project is mapping the potentially oil-rich mountain chain.<sup>167</sup> As previously mentioned, this controversial ridge may belong to Russia, Canada, or may not be a part of any nation's continental land mass.<sup>168</sup> Another region included in Denmark's potential claim areas is the Banana Hole in the Norwegian Sea, which, as stated before, has also been claimed by Norway.<sup>169</sup> The Banana Hole region may also be claimed by Iceland.<sup>170</sup>

Also noted previously in the discussion of Canada's claims, Denmark asserts sovereignty over Hans Island.<sup>171</sup> The small, barren island's strategic location, centered in the Kennedy Channel of the Northwest Passage, along with possible access to oil and natural gas reserves, make it worth the dispute with Canada.<sup>172</sup> In ad-

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163. Julian Coman, *Denmark Causes International Chill by Claiming North Pole*, TELEGRAPH.CO.UK, Oct. 17, 2004, <http://www.telegraph.co.uk/news/worldnews/1474377/Denmark-causes-international-chill-by-claiming-North-Pole.html>.

164. See Ministry of Science, Tech. & Innovation, The Continental Shelf Project, [http://a76.dk/lang\\_uk/main.html](http://a76.dk/lang_uk/main.html) (last visited June 14, 2009).

165. *Danish Team Heads for North Pole*, BBC NEWS, Aug. 13, 2007, <http://news.bbc.co.uk/2/hi/europe/6941134.stm>.

166. Ministry of Science, Tech. & Innovation, *supra* note 164.

167. *Danish Team Heads for North Pole*, *supra* note 165.

168. Jarashow, *supra* note 12, at 1595-96; *Danish Team Heads for North Pole*, *supra* note 165.

169. Brett, *supra* note 150.

170. See *id.*

171. Huebert, *Security in the Canadian North: Changing Concerns and Options*, *supra* note 98, at 11.

172. Jarashow, *supra* note 12, at 1593-94; *Hans Island the Tip of Iceberg in Arctic Claims*, *supra* note 121.

dition, like Canada, Denmark plans to hold steadfast to this and each of its Arctic territorial claims.<sup>173</sup>

*E. The United States of America's Lack of Claims to the Arctic*

The United States of America has not made an extended continental shelf claim because, as the only industrialized nation in the world that has not ratified the LOS Convention, it lacks the right.<sup>174</sup> When the LOS Convention became open for signature in 1982, many industrialized nations were unwilling to adopt it, primarily opposing provisions dealing with deep seabed mining.<sup>175</sup> However, by 1994, the Agreement Implementing Part XI and its Annex had been adopted, which the Administration of President William J. Clinton asserted had rectified the unacceptable provisions.<sup>176</sup> Accordingly, the Clinton Administration announced that the U.S. would sign the treaty and sent it to the U.S. Senate for advice and consent.<sup>177</sup> The Senate did not recommend ratification and, over ten years later, the treaty remains unratified despite President George W. Bush's statement urging the Senate to "act favorably on U.S. accession to the [the LOS Convention]."<sup>178</sup>

Opponents of adherence to the LOS Convention argue that the treaty is objectionable because it impinges on U.S. sovereignty.<sup>179</sup> Opponents also claim that the treaty interferes with U.S. military and intelligence activities.<sup>180</sup> Proponents of the LOS Convention reply that the treaty is likely to increase U.S. sovereign rights and

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173. See Denmark Plans Forces for Arctic, BBC NEWS, July 16, 2009, <http://news.bbc.co.uk/2/hi/8154181.stm>.

174. MARJORIE A. BROWNE, CONG. RES. SERV., THE U.N. LAW OF THE SEA CONVENTION AND THE UNITED STATES: DEVELOPMENTS SINCE OCTOBER 2003, at 4 (Oct. 31, 2007) [hereinafter BROWNE, CRS REPORT 2007], available at <http://www.au.af.mil/au/awc/awcgate/crs/rs21890.pdf>.

175. MARJORIE A. BROWNE, CONG. RES. SERV., THE LAW OF THE SEA CONVENTION AND U.S. POLICY summary (June 16, 2006) [hereinafter BROWNE, CRS REPORT 2006], available at <http://digital.library.unt.edu/govdocs/crs/permalink/meta-crs-10503:1>.

176. *Id.*

177. *See id.*

178. President's Statement on the Advancement of United States Maritime Interests, 43 WEEKLY COMP. PRES. DOC. 635, 635 (May 15, 2007), available at <http://fdsys.gpo.gov/fdsys/pkg/WCPD-2007-05-21/pdf/WCPD-2007-05-21-Pg635-2.pdf>.

179. BROWNE, CRS REPORT 2007, *supra* note 174, at 5.; *The United Nations Convention on the Law of the Sea: Hearing Before the H. Comm. on International Relations*, 108th Cong. 52 (2004) [hereinafter *H. Comm. UNCLOS Hearing*] (prepared statement of Baker Spring, F.M. Kirby Research Fellow in National Security Policy, The Heritage Foundation), available at <http://www.foreignaffairs.house.gov/archives/108/93660.pdf>. The Heritage Foundation is a lobbyist group "whose mission is to formulate and promote conservative public policies." The Heritage Found., About Us, <http://www.heritage.org/about/> (last visited June 14, 2009).

180. *H. Comm. UNCLOS Hearing*, *supra* note 179, at 53.

point out that, as much of the treaty codifies customary law,<sup>181</sup> it does not change the current status under which the U.S. conducts military and intelligence activities within the territorial zones of other nations.<sup>182</sup> Other arguments for opposition—the compulsory dispute resolution process and its application of the “common heritage of mankind” concept to the international high seas—have also been refuted.<sup>183</sup> Proponents assert that though the LOS Convention provides a compulsory dispute resolution system, the system is flexible because it allows the nation to choose from a variety of adjudicative bodies<sup>184</sup> and allows the nation to choose not to be bound when the dispute involves certain issues, such as maritime boundary disputes between adjacent nations and disputes about military activities.<sup>185</sup>

On October 31, 2007, after consideration of these issues regarding U.S. accession to the LOS Convention, the Senate Committee on Foreign Relations voted for the Senate to give its advice and consent in favor of ratification of the LOS Convention.<sup>186</sup> This Committee is not alone in its favorable treatment of the LOS Convention. In an unprecedented alliance between the American Petroleum Institute, the United States Navy, and environmentalist groups, the Senate Committee on Environment and Public Works received testimony from these and other organizations all providing the same message: accede to the LOS Convention<sup>187</sup> “as soon as possible.”<sup>188</sup> Without signatory status, the U.S. not only weakens the legitimacy of its potential extended continental shelf claims,

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181. Ted L. McDorman, *Global Ocean Governance and International Adjudicative Dispute Resolution*, 43 OCEAN & COASTAL MGMT. 255, 259 (2000).

182. See BROWNE, CRS REPORT 2007, *supra* note 174, at 5-6.

183. BROWNE, CRS REPORT 2006, *supra* note 175, at 6.

184. McDorman, *supra* note 181, at 259-60.

185. *Id.*

186. BROWNE, CRS REPORT 2007, *supra* note 174, at 1. This was not the first time the Foreign Relations Committee voted in favor of the Senate giving its advice and consent to accession to LOS Convention. The Committee voted unanimously 19 to 0 in favor of accession on February 25, 2004. *Id.* at 2.

187. *United Nations Convention on the Law of the Sea: Hearing Before S. Comm. on Environment and Public Works*, 108th Cong. (2004) (statement of Paul L. Kelly, Senior Vice President, Rowan Companies, Inc. on behalf of American Petroleum Institute, International Association of Drilling Contractors and National Ocean Industries Association), available at [http://epw.senate.gov/hearing\\_statements.cfm?id=219712](http://epw.senate.gov/hearing_statements.cfm?id=219712); *United Nations Convention on the Law of the Sea: Hearing Before S. Comm. on Environment and Public Works*, 108th Cong. (2004) (statement of Admiral Vern Clark, Chief, Naval Operations, U.S. Navy), available at [http://epw.senate.gov/hearing\\_statements.cfm?id=219710](http://epw.senate.gov/hearing_statements.cfm?id=219710); *United Nations Convention on the Law of the Sea: Hearing Before S. Comm. on Environment and Public Works*, 108th Cong. (2004) (statement of Roger T. Rufe, President and C.E.O., The Ocean Conservancy, et al.), available at [http://epw.senate.gov/hearing\\_statements.cfm?id=219716](http://epw.senate.gov/hearing_statements.cfm?id=219716).

188. *United Nations Convention on the Law of the Sea: Hearing Before the S. Comm. on Environmental and Public Works*, 108th Cong. (2004) (statement of David Benton, Benton and Associates), available at [http://epw.senate.gov/hearing\\_statements.cfm?id=219707](http://epw.senate.gov/hearing_statements.cfm?id=219707).

but also stifles its voice in a multitude of international issues, ranging from naval power, maritime commerce, and international dispute resolution to marine environmental protection and scientific research.<sup>189</sup> For example, without being a state-party to the LOS Convention, the U.S. cannot be a member of the International Seabed Authority, and thus relinquishes participation in the administration of the seabed-mining regime.<sup>190</sup> As President Bush explained, ratification of the LOS Convention will give the U.S. “a seat at the table when the rights that are vital to our interests are debated and interpreted.”<sup>191</sup>

Though lack of party status creates U.S. vulnerability regarding a variety of national and international issues, its sovereignty disputes in the Arctic are especially jeopardized. As previously mentioned, the U.S. has potential Arctic claims to areas off the coast of Alaska, including the Beaufort Sea off the northern coast<sup>192</sup> and the Chukchi Sea off the northwestern coast.<sup>193</sup> Current estimates resulting from an expedition by the Joint Hydrographic Center claim that the continental shelf extends 100 nautical miles farther from the Alaskan coast than earlier predictions.<sup>194</sup> The maritime boundary between the U.S. and Canada in the Beaufort Sea is already a point of contention between the two nations.<sup>195</sup> Estimates by scientists that the continental shelves of the U.S. and Canada likely overlap in this area adds further strife to the dispute.<sup>196</sup> Despite not ratifying the LOS Convention, the U.S. also seeks to label the Canadian Arctic Archipelago as an international strait as defined in the treaty<sup>197</sup> and to oppose the claims submit-

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189. BROWNE, CRS REPORT 2006, *supra* note 175, at 3.

190. *See id.* at 6-8.

191. President's Statement on the Advancement of United States Maritime Interests, *supra* note 178, at 635.

192. Huebert, *Security in the Canadian North: Changing Concerns and Options*, *supra* note 98, at 11.

193. ROB HUEBERT & BROOKS B. YEAGER, A NEW SEA: THE NEED FOR A REGIONAL AGREEMENT ON MANAGEMENT AND CONSERVATION OF THE ARCTIC MARINE ENVIRONMENT 15 (2008), available at <http://www.worldwildlife.org/what/wherewework/beringsea/WWFBinaryitem8106.pdf>.

194. The Joint Hydrographic Center is “a partnership between the university [of New Hampshire] and the National Oceanic and Atmospheric Administration, NOAA.” *Alaska Continental Slope 100 Miles Farther Out Than Thought*, ENVTL. NEWS SERV., Feb. 11, 2008, <http://www.ens-newswire.com/ens/feb2008/2008-02-11-01.asp>; *see also* Alex Cornetta, *UNH Discovery May Lead to More Sea Floor Resources*, THE NEW HAMPSHIRE, Feb. 22, 2008, available at <http://media.www.tnhonline.com/media/storage/paper674/news/2008/02/22/News/Unh-Discovery.May.Lead.To.More.Sea.Floor.Resources-3227923.shtml%20target=>.

195. Huebert, *Security in the Canadian North: Changing Concerns and Options*, *supra* note 98, at 11.

196. *See* Randy Boswell, *U.S. and Canada on Collision Course Over Arctic Rights: U.S. Official*, CANWEST NEWS SERV., Feb. 12, 2008, <http://www.canada.com/topics/news/national/story.html?id=7a7fda13-e16c-4882-bfc5-50f45d3c0adf&k=21728>.

197. Jarashow, *supra* note 12, at 1592, 1603-04.

ted to the Commission by Russia.<sup>198</sup> Furthermore, because of the Arctic's great wealth of resources, tactical location for the shipping industry, and the current lack of established delimitation of sovereign rights, the unresolved disputes in the Arctic may escalate to an armed conflict.<sup>199</sup> The retreating sea ice will only lead the Arctic powers to strengthen their positions in the coming years. Without doubt, the next decade will shape the sovereignty of the Arctic. The only uncertainty remaining is whether it will be with or without the United States.

#### V. ENVIRONMENTAL CHALLENGES FACING THE ARCTIC: A PRIMARY POLICY CONSIDERATION

As discussed in Part II, one of the most significant issues that the Arctic faces is the melting of the ice caps due to the warming climate. One of the key findings of the Arctic Climate Impact Assessment's study on the consequences of climate change on the Arctic is that "animal species' diversity, ranges and distribution will change."<sup>200</sup> Animal species such as the polar bear and ice-dependent seals<sup>201</sup> may face extinction as a result of the melting sea ice.<sup>202</sup> Walruses and ice-dependent seabirds will also be endangered.<sup>203</sup> These animals rely on the sea ice for essential habitat, foraging, and reproductive activities.<sup>204</sup> Unfortunately, their populations and well-being have already been adversely affected.<sup>205</sup> Further, the reduction and possible extinction of polar bears and other animals disrupts the food chain, impacting other Arctic species.<sup>206</sup> The diminishing sea ice also directly devastates organisms on the opposite end of the Arctic food web.<sup>207</sup> Sea ice algae, considered the "base of the marine food web," attaches to the bottom of sea ice and provides nourishment for small marine life forms,<sup>208</sup> such as krill and small crustaceans.<sup>209</sup> Those organisms, in turn,

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198. *United States of America: Notification Regarding the Submission Made by the Russian Federation to the Commission on the Limits of the Continental Shelf*, *supra* note 136.

199. Borgerson, *supra* note 3, at 2, 5-6.

200. HASSOL, *supra* note 1, at 10.

201. *Id.*

202. *Id.* at 10, 58-59; HUEBERT & YEAGER, *supra* note 193, at 8.

203. HASSOL, *supra* note 1, at 59; HUEBERT & YEAGER, *supra* note 193, at 8.

204. HASSOL, *supra* note 1, at 58-59.

205. *See id.*

206. *See id.* at 58-61.

207. *See id.* at 60; Barbara Travis, Int'l Arctic Research Ctr. at Univ. of Alaska Fairbanks, Computer Modeling of the Arctic: A Coupled Marine Ecosystem-Physical Model (July 22, 2005), [http://www.iarc.uaf.edu/highlights/2005/coupled\\_marine\\_ecosystem/index.php](http://www.iarc.uaf.edu/highlights/2005/coupled_marine_ecosystem/index.php).

208. HASSOL, *supra* note 1, at 60.

209. Travis, *supra* note 207.

are the sustenance for larger life forms, such as whales.<sup>210</sup> Thus, the warming climate is directly impacting Arctic fauna and flora at all trophic levels.<sup>211</sup> With the symbiosis of the ecosystem, all Arctic species will be affected either directly, indirectly, or both.<sup>212</sup>

Also resulting from the warming climate is increased economic activity, such as commercial fishing, drilling for oil and gas, and navigation.<sup>213</sup> Commercial fishing affects the environment and is affected by environmental changes.<sup>214</sup> As the climate warms, fish stocks that are indigenous to colder temperatures have begun migrating north.<sup>215</sup> The displacement of fish species disrupts the Arctic food web, thus potentially causing “widespread disruption” on the entire ecosystem.<sup>216</sup> This is also a symptom of overfishing, which has been a problem in the Arctic in the past.<sup>217</sup> Furthermore, the risk of overfishing will increase in the future as fishing becomes possible in areas of the Arctic Ocean that are not governed by a fisheries management plan.<sup>218</sup> Other fishing practices also have adverse environmental consequences, such as the incidental catching and killing of non-target species and habitat destruction caused by bottom trawling.<sup>219</sup> These threats to the ecosystem further highlight the necessity of fishing regulations in the Arctic.

Another economic activity increasing as a result of the warming Arctic climate is offshore drilling for oil and gas.<sup>220</sup> A primary goal for the Arctic nations in obtaining sovereignty rights to explore and exploit the natural resources of their extended continental shelves is to expand their offshore drilling practices.<sup>221</sup> Offshore drilling, however, can adversely impact the marine environment in multiple ways at multiple phases in the drilling process: “(1) dur-

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210. *Id.*

211. See HUEBERT & YEAGER, *supra* note 193, at 8.

212. *Id.* The polar bear is an example of a species that is both directly and indirectly impacted by the warming Arctic climate and the resulting sea ice shrinkage. The polar bear is directly impacted because it is dependent on the sea ice for its essential habitat, foraging, and reproductive activities. See HASSOL, *supra* note 1, at 58. However, even if the polar bear was not directly impacted in this way, it would still be indirectly impacted. The diminishing sea ice is directly impacting seals, which are the primary sustenance of polar bears and in turn indirectly impacts the polar bear. See *id.* at 58-59.

213. See HUEBERT & YEAGER, *supra* note 193, at 8.

214. See *id.* at 8-10.

215. See HASSOL, *supra* note 1, at 65; HUEBERT & YEAGER, *supra* note 193, at 9.

216. HUEBERT & YEAGER, *supra* note 193, at 9.

217. See HASSOL, *supra* note 1, at 63.

218. See HUEBERT & YEAGER, *supra* note 193, at 8-10.

219. *Id.* at 10.

220. *Id.* at 16.

221. See Cassie Fleming, *Arctic Oil, Gas on Hold from Lawsuits, Economy*, WASH. TIMES, July 4, 2009, available at <http://www.washingtontimes.com/news/2009/jul/04/arctic-oil-gas-kept-on-hold-by-lawsuits-economy/print/>.

ing the preliminary seismic surveying of the potential resource, (2) during rig installation and drilling, (3) throughout hydrocarbon production [and] (4) in the course of transportation of the oil or natural gas.”<sup>222</sup> The direct impacts to the marine environment result from the removal of minerals, habitat disturbance including noise and vibration, and pollution caused by chemicals and production waste.<sup>223</sup> Thus, chronic environmental damage occurs by the daily operations of the exploration, exploitation, and transportation of minerals.<sup>224</sup>

However, the greatest threat to the Arctic marine ecosystem posed by offshore drilling and shipping is not the chronic damage, but the acute damage caused by oil spills.<sup>225</sup> Unlike terrestrial oil spills, marine oil spills are more difficult to contain with the oil spreading for hundreds to thousands of miles.<sup>226</sup> Perhaps the most severe damage to living species caused by an oil spill is to those whose bodies are covered in feathers or fur, such as seabirds or sea otters.<sup>227</sup> The coating of the feathers or fur of a bird or animal with oil results in numerous physical detriments.<sup>228</sup> For example, if the oil compromises the insulation provided by the fur, in cold climates the animal may die of hypothermia.<sup>229</sup> Oil spills also harm species without feathers or fur, such as whales, when the oil is ingested or gets into the eyes, ears, or other orifices.<sup>230</sup> The destructive effects of an oil spill on the marine ecosystem can be long term as well. Some species injured by an oil spill in a subarctic marine environment have not recovered nearly twenty years later.<sup>231</sup> Furthermore, in icy waters, “there continues to be no effective method for containing and cleaning up an oil spill . . . .”<sup>232</sup> Even with clean-up measures available, these conditions greatly impede critical response-times following an oil spill as well. Thus, in the Arctic environment even minor oil spills can be devastating.<sup>233</sup>

Increased offshore drilling will in turn increase navigation in

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222. Syed Masiur Rahman, Strategic Environmental Assessment (SEA) in Offshore Oil or Gas Sector Development (Apr. 2005), <http://www.eco-web.com/edi/050421.html>.

223. *Id.*

224. *See id.*

225. ARCTIC MONITORING & ASSESSMENT PROGRAMME, ARCTIC OIL AND GAS 2007, at 24, available at <http://www.amap.no/workdocs/index.cfm?action=getfile&dirsub=%2FOGA%20Overview%20Report&filename=FINAL%20OGA%20OVERVIEW%20-%20ALL%20-%20240408.pdf>.

226. *Id.*

227. *See id.*

228. *Id.*

229. *Id.*

230. *Id.*

231. *Id.*

232. WWF Int'l, Oil and Gas in the Arctic, [http://www.panda.org/what\\_we\\_do/where\\_we\\_work/arctic/what\\_we\\_do/oil\\_gas/](http://www.panda.org/what_we_do/where_we_work/arctic/what_we_do/oil_gas/) (last visited June 16, 2009).

233. *See* ARCTIC MONITORING & ASSESSMENT PROGRAMME, *supra* note 225, at 24.

the Arctic. Not only will increased navigation in the Arctic result from transporting oil, but also from the transporting of other cargo due to the warming climate opening sea lanes. If the vessel carries oil or gas, it also carries the threat of a potentially devastating oil spill.<sup>234</sup> Irrespective of oil spills, increased navigation brings its own environmental concerns, such as increased pollution from the vessel's waste products and the risk of ballast water introducing foreign marine species into the delicate Arctic ecosystem.<sup>235</sup> Furthermore, if the sea lane traverses an area of heightened concern for a particular species, then the mere presence of a ship can be environmentally detrimental.<sup>236</sup> Therefore, increased navigation is a crucial environmental issue in the Arctic.

Overall, the Arctic currently faces significant environmental challenges, which are only likely to increase in the future.<sup>237</sup> The gravity of the climate change in the Arctic alone warrants the attention of policymakers.<sup>238</sup> The Arctic is undergoing a monumental change that has the potential to devastate its entire ecosystem.<sup>239</sup> The melting sea ice is only the beginning of environmental concerns in the Arctic. As access becomes available, economic activity will increase exponentially, specifically an increase in fishing, offshore drilling, and navigation.<sup>240</sup> These practices bring the threat of oil spills and other significant environmental consequences.<sup>241</sup> Therefore, in developing a legal regime in the Arctic, the environmental impacts of climate change and increased economic activity must be primary considerations.

#### VI. DEVELOPMENT OF A LEGAL REGIME FOR THE PRESERVATION AND CONSERVATION OF THE ARCTIC ENVIRONMENT

Considering the multitude of territorial disputes and the significant environmental and economic consequences, delimitation of sovereignty rights in the Arctic is one of the most important international issues of the 21st century. For the reasons previously stated, in order for the Arctic territorial disputes to be resolved in

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234. See HUEBERT & YEAGER, *supra* note 193, at 15.

235. *Id.*

236. *See id.*

237. HASSOL, *supra* note 1, at 8. It is important to note that though the author has not discussed the effects of environmental changes and increased economic activity on the indigenous cultures of the Arctic, this is an important policy consideration. Approximately four million people live within the Arctic region, and because their lifestyles are strongly linked to the Arctic environment, they face major cultural and economic impacts. *Id.*

238. *See id.* at 8.

239. *See id.* at 58-59.

240. See HUEBERT & YEAGER, *supra* note 193, at 16.

241. *See id.*

a peaceful, fair manner within the ambits of established international law, all the Arctic players must adhere to the LOS Convention. Thus, U.S. ratification of the treaty is necessary. However, the LOS Convention is just the starting point for the Arctic, legally and environmentally. Though large amounts of the Arctic Ocean can be environmentally regulated by coastal states within their EEZs, with the transboundary nature of marine wildlife and pollution, this method of environmental protection is insufficient.<sup>242</sup> Furthermore, the treaty is universal, dealing not just with the issues of the Arctic Ocean, but all the world's oceans.<sup>243</sup> In contrast, the Arctic's ecosystem and location make it unlike any other place on earth. The LOS Convention alone does not adequately address the distinct environmental and territorial issues facing the Arctic. The Arctic needs a regime to ensure its peaceful, pristine existence as unique as the Arctic itself.

Existing sources of international law have been considered as options and models for a multilateral agreement in the Arctic. The Arctic Council was formed in 1996 to promote the cooperation of the Arctic nations.<sup>244</sup> Although the promoters of the Arctic Council hoped it would have a broader application to the Arctic issues than its predecessor, the Arctic Environmental Protection Strategy (AEPS),<sup>245</sup> the Arctic Council is similarly limited to environmental issues.<sup>246</sup> Also like the AEPS, the Arctic Council lacks independent funding, a restriction undermining its effectiveness.<sup>247</sup> The Arctic Council does have the membership of all eight Arctic nations, and, through its six working groups, has addressed extensive environmental issues facing the Arctic, including "monitoring, assessing and preventing pollution in the Arctic, climate change, biodiversity conservation and sustainable use, [and] emergency preparedness and prevention."<sup>248</sup> As this list suggests, the only major environ-

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242. *See id.* at 33.

243. In fact, "[t]he Arctic received limited attention during the negotiations of the third Conference on the Law of the Sea . . . . Thus, little of direct relevance to the Arctic region made its way into the final convention." *Id.* at 21.

244. Arctic Council, About Arctic Council (Oct. 22, 2007), <http://arctic-council.org/article/about>.

245. One reason that Arctic policy analysts proposed a new regime to replace the AEPS was the AEPS's lack of authority to act and its subject matter limitations. *See* HUEBERT & YEAGER, *supra* note 193, at 19-20. Proponents of the Arctic Council hoped that it would have more authority to act on the information it had gathered and that it would apply to Arctic issues beyond the environment. *See id.* at 20. However, the Arctic Council was "purposefully emasculated . . . at birth" by U.S. efforts to preclude it from addressing critical issues, such as security. Borgerson, *supra* note 3, at 72.

246. HUEBERT & YEAGER, *supra* note 193, at 20.

247. *See id.*

248. Arctic Council, Working Groups, [http://arctic-council.org/section/working\\_groups](http://arctic-council.org/section/working_groups) (last visited June 16, 2009); HUEBERT & YEAGER, *supra* note 193, at 20-21, 23.

mental issue of the region not specifically addressed by the Arctic Council is fishing.<sup>249</sup> Overall, the Arctic Council has effectively identified and researched the unique environmental concerns of the region but lacks the authority to adopt regulations aimed at preventing or mitigating these concerns.

Another effort to coordinate the Arctic nations in promoting Arctic environmental well-being is the Polar Code.<sup>250</sup> The Polar Code recognizes the distinct dangers that the Arctic environment poses to watercraft.<sup>251</sup> The Polar Code was Originally intended to implement a mandatory set of standards for safety and controlling pollution in Arctic navigation.<sup>252</sup> However, following U.S. objections the standards became voluntary and were renamed the Guidelines for Ships Operating in Arctic Ice-Covered Waters (the Guidelines).<sup>253</sup> Today, the Guidelines are primarily a standard that the Arctic shipping industry uses to obtain ship insurance.<sup>254</sup> The Guidelines have highlighted the importance of specialized standards for navigation in the Arctic; however, they lack the necessary authority to protect the region's fragile waters.

In addition to the Arctic Council and the Polar Code, there have been several agreements addressing Arctic wildlife, such as the Agreement on the Conservation of Polar Bears (ACPB)<sup>255</sup> and agreements regarding fish stocks.<sup>256</sup> However, these agreements give little guidance for a comprehensive Arctic legal regime. The ACPB is obviously limited to the protection of a single species and the fisheries management plans are all limited to sub-regions of the Arctic, with an agreement covering the entire region still lacking.<sup>257</sup> Given the symbiosis of Arctic issues, a strategy preferable to dealing with the issues separately would be the development of a comprehensive regional regime that considers the various issues as a whole.<sup>258</sup>

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249. See HUEBERT & YEAGER, *supra* note 193, at 23.

250. See Int'l Maritime Org. [IMO], *Guidelines for Ships Operating in Arctic Ice-Covered Waters*, Ref. T1/3.02 (Dec. 23, 2002), available at <http://www.tc.gc.ca/marinesafety/CES/Arctic/guidelines-msc-2002.pdf>; HUEBERT & YEAGER, *supra* note 193, at 22.

251. HUEBERT & YEAGER, *supra* note 193, at 22.

252. *Id.*

253. *See id.*

254. *See id.*

255. Agreement on the Conservation of Polar Bears, Nov. 15, 1973, 27 U.S.T. 3918, 13 I.L.M. 13.

256. HUEBERT & YEAGER, *supra* note 193, at 23 ("Several RFMPS and national fishery management organizations, including the North East Atlantic Fisheries Commission (NEAFC), the North Atlantic Fisheries Organization (NAFO), and the North Pacific Fisheries Management Commission regulate important fisheries such as those of the Barents and Bering Seas on the margin of the Arctic, but there exists no such cooperative management structure for the Arctic itself.").

257. *Id.*

258. *Id.*

Such a comprehensive approach was taken by the Convention for the Protection of the Marine Environment of the North-East Atlantic (the OSPAR Convention).<sup>259</sup> Areas of the Arctic are covered by this treaty, but it is not meant to address distinct Arctic issues.<sup>260</sup> The OSPAR Convention superseded the Oslo Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft and the Paris Convention for the Prevention of Marine Pollution from Land-Based Sources.<sup>261</sup> The work of the prevailing treaty is carried out by the OSPAR Commission, which was established by Article 10 and is comprised of representatives from each of the contracting parties.<sup>262</sup> The OSPAR Convention protects against a multitude of environmental harms from various human causes through its “ecosystem approach.”<sup>263</sup> The OSPAR Commission’s six working groups are tailored to the distinct issues affecting the Northeastern Atlantic Ocean and focus on conservation of biodiversity, harmful eutrophication, pollution caused by hazardous substances, pollution caused by radioactive substances, preventing the adverse environmental effects of offshore drilling for oil and gas, and monitoring and assessment of the marine environment.<sup>264</sup> The cornerstone of the ecosystem approach is the recognition that the marine environment is an “interlocking network of ecosystems” with each component, including the effects of human activities, interacting and functioning together.<sup>265</sup> “The ecosystem approach can therefore be defined as the comprehensive integrated management of human activities based on the best available scientific knowledge about the ecosystem and its dynamics in order to identify and take action on influences which are critical to the health of marine ecosystems.”<sup>266</sup> Ultimately, the objective of this approach is to achieve “sustainable use of ecosystem

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259. Convention for the Protection of the Marine Environment of the North-East Atlantic, Sept. 22, 1992, 32 I.L.M. 1069 [hereinafter OSPAR Convention], available at [http://www.ospar.org/html\\_documents/ospar/html/OSPAR\\_Convention\\_e\\_updated\\_text\\_2007.pdf](http://www.ospar.org/html_documents/ospar/html/OSPAR_Convention_e_updated_text_2007.pdf); HUEBERT & YEAGER, *supra* note 193, at 37.

260. See HUEBERT & YEAGER, *supra* note 193, at 37.

261. *Id.*; see also OSPAR Comm’n, Introduction: History, [http://www.ospar.org/content/content.asp?menu=00310108000048\\_000000\\_000000](http://www.ospar.org/content/content.asp?menu=00310108000048_000000_000000) (last visited June 17, 2009).

262. See OSPAR Convention, *supra* note 259, art. 10; HUEBERT & YEAGER, *supra* note 193, at 37.

263. See OSPAR Comm’n, Principles: Ecosystem Approach, [http://www.ospar.org/content/content.asp?menu=00430109150000\\_000000\\_000000](http://www.ospar.org/content/content.asp?menu=00430109150000_000000_000000) (last visited June 17, 2009).

264. See generally First Joint Ministerial Meeting of the Helsinki and OSPAR Commissions (JMM), June 25-26, 2003, Bremen, F.R.G., *Statement on the Ecosystem Approach to the Management of Human Activities* [hereinafter *Statement on the Ecosystem Approach*], available at <http://www.helcom.fi/stc/files/BremenDocs/JointEcosystemApproach.pdf>.

265. *Id.* ¶ 3.

266. *Id.* ¶ 5 (internal quotes removed).

goods and services and maintenance of ecosystem integrity.”<sup>267</sup>

Other notable aspects of the OSPAR Convention include its commitment to sustainable development, its independent financing, and its authority to act on its findings. The preamble to the OSPAR Convention expresses the importance of sustainable development, committing its management of human activities to operate in a manner that ensures that marine resources will be available to future generations.<sup>268</sup> The OSPAR Commission further supported this plan by participating in the 2002 World Summit on Sustainable Development.<sup>269</sup> Furthermore, the OSPAR Convention is not limited to gathering information, but is empowered with a permanent secretariat, funded by the contracting parties.<sup>270</sup> Article 13 of the OSPAR Convention states that the OSPAR Commission not only makes recommendations, but adopts decisions that may be binding on the contracting parties.<sup>271</sup> Thus, the OSPAR Convention is fortified with implementation abilities that are lacking in its soft law counterparts.<sup>272</sup>

Another treaty with possible parallels to an effective regime in the Arctic is the Antarctic Treaty.<sup>273</sup> Like the Arctic region, Antarctica is characterized by a harsh, icy environment, a sensitive ecosystem, possibly abundant mineral resources, and uncertainty pertaining to territorial claims.<sup>274</sup> Hence, there are lessons to be learned from the Antarctic Treaty’s nearly fifty years of experience.<sup>275</sup> Successes of the Antarctic Treaty include its foundation of scientific research,<sup>276</sup> its moratorium on territorial claims and thus mineral exploitation,<sup>277</sup> and its demilitarization.<sup>278</sup> These concepts merit consideration, but because of differences between the Arctic and the Antarctic regions, they do not translate seamlessly to the Arctic.<sup>279</sup>

Despite their apparent similarities, these areas are actually

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267. *Id.* (internal quotes removed).

268. OSPAR Convention, *supra* note 259, preamble.

269. *Statement on the Ecosystem Approach*, *supra* note 264, ¶ 6.e.

270. See HUEBERT & YEAGER, *supra* note 193, at 37-39; OSPAR Comm’n, Rules of Procedure, rules 15-18, Ref. No. 2005-17, available at [http://www.ospar.org/documents/DBASE/DECRECS/Agreements/05-17e\\_Rules%20of%20Procedure.doc](http://www.ospar.org/documents/DBASE/DECRECS/Agreements/05-17e_Rules%20of%20Procedure.doc) (concerning the Secretariat).

271. OSPAR Convention, *supra* note 259, art. 13.

272. See HUEBERT & YEAGER, *supra* note 193, at 40.

273. Antarctic Treaty, Dec. 1, 1959, 12 U.S.T. 794, 42 U.N.T.S. 71; Jarashow, *supra* note 12, at 1637-40.

274. Jarashow, *supra* note 12, at 1637-38.

275. See Donald R. Rothwell, *Polar Lessons for an Arctic Regime*, 29 COOPERATION & CONFLICT 55, 68 (1994).

276. See Antarctic Treaty, *supra* note 273, arts. II-III.

277. See *id.* art. IV.

278. See *id.* arts. I, V; Rothwell, *supra* note 275, at 68-72.

279. See Rothwell, *supra* note 275, at 72.

“geographic opposite[s].”<sup>280</sup> Antarctica is land mass surrounded by ocean, whereas the Arctic is ocean surrounded by land mass.<sup>281</sup> Also, Antarctica is more geographically isolated from dense human populations than is the Arctic.<sup>282</sup> These differences clearly affect the climate, environment, and ecosystem, but they also have political implications. Due to its proximity to the burgeoning human civilizations of Europe, Asia, and North America, the Arctic has a long history of human activity, whereas Antarctica has no permanent human occupants.<sup>283</sup> Furthermore, when the Arctic becomes an accessible sea route, it will bring continents together geographically, whereas global warming will not have a similar effect on Antarctica. Thus, a ban on economic development in the Arctic similar to that of the Antarctic Treaty is not realistic. In addition, though demilitarization and denuclearization is an important consideration for the Arctic, it is not as prominent of a policy consideration as it was during the development of the Antarctic Treaty.<sup>284</sup> Current international relations are more progressive than they were during the creation and evolution of the Antarctic Treaty, which developed amidst the Cold War. Finally, the Antarctic Treaty’s foundation of scientific research certainly corresponds to the distinct environmental issues of the Arctic. However, Arctic policymakers have already shown the prominence of research as the basis of policy considerations.<sup>285</sup> Though certain principles of the Antarctic Treaty should be considered in the contemplation of an Arctic regime, “[t]he Antarctic Treaty cannot and will not be duplicated in the Arctic.”<sup>286</sup>

After consideration of existing legal systems, the establishment of a comprehensive regional regime would be the most effective device for conservation and protection of the Arctic environment.<sup>287</sup> Article 123 of LOS Convention, which encourages cooperation between nations bordering a semi-enclosed sea to achieve common

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280. Nat’l Snow & Ice Data Ctr., Characteristics: Arctic v. Antarctic, *available at* <http://nsidc.org/seoice/characteristics/difference.html> (last visited June 17, 2009).

281. *Id.*

282. HMS Endurance Tracking Project. Visit and Learn, *available at* <http://www.visitandlearn.co.uk/schoollinks/pdfs/worksheet2.pdf>.

283. See NAT’L SCI. FOUND., SCIENCE ON THE EDGE: ARCTIC AND ANTARCTIC DISCOVERIES 135, *available at* <http://www.nsf.gov/about/history/nsf0050/pdf/arctic.pdf>; see also Posting of Gerald Karey to The Barrel, [http://www.platts.com/weblog/oilblog/2009/04/10/antarctica\\_not\\_a\\_role\\_model\\_as\\_five\\_arctic\\_nations\\_call\\_the\\_shots\\_and\\_vie\\_for\\_resources.html](http://www.platts.com/weblog/oilblog/2009/04/10/antarctica_not_a_role_model_as_five_arctic_nations_call_the_shots_and_vie_for_resources.html) (Apr. 10, 2009, 15:23 EST).

284. Rothwell, *supra*, note 275, at 69-70.

285. See, e.g., Arctic Council, <http://www.arctic-council.org/> (last visited June 17, 2009).

286. Rothwell, *supra* note 275, at 72.

287. See HUEBERT & YEAGER, *supra* note 193, at 28. See generally Harold E. Welch, *Marine Conservation in the Canadian Arctic: A Regional Overview*, 23 N. PERSP. 1, Spring 1995, *available at* <http://www.carc.org/pubs/v23no1/marine3.htm>.

environmental and economic goals, provides a framework for a regional Arctic agreement.<sup>288</sup> The six working groups of the Arctic Council have already made significant progress in identifying and monitoring the unique environmental issues of the Arctic.<sup>289</sup> These groups should be integrated into the regional agreement with two important adaptations: (1) each group must embrace the symbiosis of the network of ecosystems comprising the Arctic within the definition of the ecosystem approach, and (2) each group must consider and adhere to the concept of sustainable development.<sup>290</sup> The ecosystem approach has particular relevance to the Arctic because of the region's sensitivity—even minor disruptions carry a risk of adversely affecting the entire ecosystem.<sup>291</sup> Furthermore, sustainable development is also particularly important in the Arctic.<sup>292</sup> Within this century, areas of the Arctic that were once completely void of human activity may burgeon into areas of vigorous commercial fishing, shipping, and mineral exploitation.<sup>293</sup> In addition, the environmental issues of fishing and navigation should be specifically addressed by working groups of this regime.<sup>294</sup> The navigational issues can be addressed by incorporating the policies of the Guidelines for Ships Operating in Arctic Ice-Covered Waters into the Arctic Council's working group designated to emergency

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288. See LOS Convention, *supra* note 6, art. 123; HUEBERT & YEAGER, *supra* note 193, at 28-29. The full text of Article 123 is:

States bordering an enclosed or semi-enclosed sea should cooperate with each other in the exercise of their rights and in the performance of their duties under this Convention. To this end they shall endeavour, directly or through an appropriate regional organization:

- (a) to coordinate the management, conservation, exploration and exploitation of the living resources of the sea;
- (b) to coordinate the implementation of their rights and duties with respect to the protection and preservation of the marine environment;
- (c) to coordinate their scientific research policies and undertake where appropriate joint programmes of scientific research in the area;
- (d) to invite, as appropriate, other interested States or international organizations to cooperate with them in furtherance of the provisions of this article.

LOS Convention, *supra* note 6, art. 123.

289. See HUEBERT & YEAGER, *supra* note 193, at 21.

290. See *generally id.* at 24-25 (arguing that a comprehensive ecosystem approach and the assurance of sustainable development are two of three requirements for an effective Arctic management framework, but concluding the framework should replace rather than integrate the Arctic Council). The Arctic Council currently has a working group devoted to gathering and disseminating information about sustainable development in the Arctic. Arctic Council, Sustainable Development Working Group, [http://arctic-council.org/working\\_group/sdwg](http://arctic-council.org/working_group/sdwg) (last visited June 17, 2009). However, for an effective regional framework in the Arctic, this concept must also be an over-arching theme for each of the other groups.

291. See Welch, *supra* note 287.

292. HUEBERT & YEAGER, *supra* note 193, at 28.

293. See Borgerson, *supra* note 3, at 66-67.

294. See *generally* HUEBERT & YEAGER, *supra* note 193, at 33.

prevention and response.<sup>295</sup> The fishing issues, however, require the development of a seventh working group comprising a fisheries management plan for the entire Arctic Region.<sup>296</sup> Finally, but no less crucial, the regime must be empowered with independent funding and the authority to take action on its findings.<sup>297</sup> A comprehensive regional agreement that incorporates the lessons of past regimes, but considers the Arctic's unique qualities and challenges, is essential to the survival of earth's ultimate frontier.<sup>298</sup>

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295. *See generally id.* (arguing that the Arctic nations should enter into a binding Polar Code, but not arguing for it to be incorporated into the Arctic Council).

296. *See generally id.* at 26-28 (arguing that the Arctic nations should enter into a regional fisheries management organization, but not arguing for it to be incorporated into the Arctic Council).

297. *See id.* at 30.

298. *See id.* at 28-30.

**INTERNATIONAL CLIMATE CHANGE LIABILITY:  
A MYTH OR A REALITY?**

JENNIFER KILINSKI\*

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*Human progress is neither automatic nor inevitable. We are faced now with the fact that tomorrow is today. We are confronted with the fierce urgency of now. In this unfolding conundrum of life and history there is such a thing as being too late. . . . We may cry out desperately for time to pause in her passage, but time is deaf to every plea and rushes on. Over the bleached bones and jumbled residues of numerous civilizations are written the pathetic words: Too late.*

– Martin Luther King Jr.

## I. INTRODUCTION

With each passing day, the literature on the impacts of global climate change grows. Climate change affects nearly every aspect of life, from human and animal existence, to geographical and ecological effects. In the legal community, that has also meant an increasing body of scholarly dialogue concerning the potential avenues for relief and meaningful change. Discussions have ranged from general to specific, with no consensus on the best way to tackle this accumulating giant. Due to the enormity of the problem, and the range of potential responses to any given climate change issue, this Comment will focus on the potential for liability and, more specifically, discuss the possible theories of liability on which to rest a climate change suit.

This Comment is written with the assumption that the United States, and corporations therein, are the most viable targets of climate change liability suits. This assumption is based on several factors, including: U.S. resistance to meaningful participation in implementing climate change solutions, U.S. opposition to Kyoto Protocol ratification, and U.S. embarrassment of being a world leader in emissions while also maintaining one of the least progressive climate change policies of any developed country. There is an abundance of evidence and scholarly dialogue on U.S. failures that, for the purposes of this Comment, will be assumed as well known and accepted. Accordingly, the guiding framework in analyzing and discussing the liability theories in this Comment all center around the potential for naming the United States and its industries as defendants.<sup>1</sup>

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1. Much of the analysis, though, will also apply to other nations. For example, the United Kingdom, Australia, and New Zealand are also common law countries. Furthermore, countries such as Australia, China, and India, who are among the world's largest emitters of GHGs, but who, like the United States, do not have binding commitments under the *Kyoto*

Private and public institutions have recently held a number of important symposiums, resulting in a large number of articles about issues surrounding climate change litigation. Most of these articles are quick to point out that a number of obstacles must be overcome to have a successful suit. For example, a party must demonstrate legal standing to sue. This issue, along with separation of power concerns, pervades numerous legal systems throughout the world.<sup>2</sup> On the other side, the defendant must be sufficiently culpable, such that, given a finding of fault, redressability of harms is possible. The third, and perhaps largest consideration is causation. The reality is that a class-action suit comprised of six billion plaintiffs and six billion defendants is theoretically possible, given that each of us contributes to climate change. Finding a defendant reasonably connected to “causing” the harms alleged is a challenging task. Finally, selecting the most appropriate forum and legal theory on which to bring a climate change action is at the very least, a daunting undertaking. Much of that decision rests with, and is limited by, the type of action and the parties involved.

Although this Comment will touch a little on each of these subjects, the bulk of the focus is on the last consideration: what legal theories or forums are available for liability actions and some of the advantages and disadvantages of each. While the list is in no way comprehensive, the goal is to further the dialogue on potentially viable international and domestic forums. Some of the theories discussed will be analyzed in the context of a case study example. This Comment ultimately concludes that there are potentially viable options for liability on the international level, despite the fact that everyone on earth is simultaneously a potential plaintiff or defendant. However, litigation is only one small piece of the puzzle towards realizing an international commitment to reducing emissions. Unfortunately, some countries and industries need the economic incentive that only liability suits can bring to jump start in-house change.

Given the litany of likely setbacks inherent in any climate change suit, a fair question may be, why litigation? Aside from the desirous jump-start previously mentioned, there is a long history of looking towards the judicial branches of government, both na-

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*Protocol to the United Nations Convention on Climate Change*, are also likely primary targets and may find analysis of potential liability applicable to their legal systems. See discussion *infra* Parts III.B and note 50.

2. See, e.g., ONTARIO LAW REFORM COMM'N, REPORT ON THE LAW OF STANDING (1989); AUSTRALIAN LAW REFORM COMM'N, BEYOND THE DOOR-KEEPER: STANDING TO SUE FOR PUBLIC REMEDIES (1996); Blake Bertagna, “Standing” Up for the Environment: The Ability of Plaintiffs to Establish Legal Standing to Redress Injuries Caused by Global Warming, 2006 B.Y.U. L. REV. 415 (2006).

tionally and internationally, to serve as a gap-filler where legislative and regulatory efforts fail. Issues as varying as civil rights and tobacco litigation have previously sought the guidance of the judiciary. In climate change, considering the United States' failure to ratify the Kyoto Protocol or establish a comprehensive plan to decrease emissions and the fact that two major emitters (India and China) have no emission reduction commitments via the Protocol<sup>3</sup> has caused the international community to recognize a vacuum in climate change policy. Historically, one of the best ways of filling that proverbial vacuum is through litigation.

In keeping with the goals of this Comment, the first section contains a brief consideration of the causes and impacts of climate change and focuses on two categories of likely plaintiffs. Coastal communities most immediately, and devastatingly, impacted by rising sea levels,<sup>4</sup> and the polar region, which already experiences enormous change due to sea ice/permafrost melts, and dwindling habitats.<sup>5</sup> Also within this section is a discussion of the most promising and vulnerable defendants.

The second section contains a discussion and analysis of the options available in international law for holding states or private actors liable for the impacts of global warming, particularly where greenhouse gas (GHG) emissions<sup>6</sup> are concerned, and some of the

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3. For example, the United States, China, and India, none of whom have legal obligations under Kyoto to reduce emissions, account for roughly 45% (and growing) of the world's carbon dioxide emissions. *See, e.g.*, WORLD BANK, LITTLE GREEN DATA BOOK (2007), available at <http://siteresources.worldbank.org/INTDATA/STA/FINALPressRelease.pdf>; Carbon Dioxide Information Analysis CTR., Oak Ridge Nat'l Lab. (ORNL), 2007 Total Co2 Emissions by County, available at [coiac.ornl.gov/trends/emis/top2007.tot](http://coiac.ornl.gov/trends/emis/top2007.tot) As of late 2006, it appears that China overtook the United States as the world's largest emitter of carbon dioxide, with estimates of an additional rise in emissions from China at 2.5 to 11 percent annually by 2010, an increase that is more than the UK or Germany's total emissions. *See* Jay S. Gregg et al., *China: Emissions Pattern of the World Leader in CO2 Emissions from Fossil Fuel Consumption and Cement Production*, 35 GEOPHYSICAL RES. LETTERS L08806, doi:10.1029/2007GL032887 (2008); Kate Melville, *CO2 Emissions in China Rocketing*, SCIENCEAGOGO.COM, Mar. 19, 2008, [http://www.scienceagogo.com/news/20080218203038data\\_trunc\\_sys.shtml](http://www.scienceagogo.com/news/20080218203038data_trunc_sys.shtml) (last visited June 20, 2010).

4. *See, e.g.*, The World Bank, *Climate Changes and Impact on Coastal Countries*, (Feb. 12, 2007), <http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/0,,contentMDK:21215328~pagePK:64165401~piPK:64165026~theSitePK:469382,00.html>; U.S. Evtl. Prot. Agency, *Coastal Zones and Sea Level Rise*, <http://www.epa.gov/climatechange/effects/coastal/index.html> (last visited July 11, 2009).

5. SUSAN JOY HASSOL, *IMPACTS OF A WARMING ARCTIC: ARCTIC CLIMATE CHANGE IMPACT ASSESSMENT 8-17* (2004), available at <http://amap.no/acia/>; U.S. Evtl. Prot. Agency, *Polar Regions*, <http://www.epa.gov/climatechange/effects/polarregions.html> (last visited July 11, 2009).

6. Greenhouse gases are known as a group of gases which add to the greenhouse effect, trapping heat in the Earth's atmosphere and directly contributing to the climate change. Among the types of GHGs are carbon dioxide, methane, nitrous oxide, hydro fluorocarbons, per fluorocarbons, and sulfur hexafluoride. *See* DAVID HUNTER ET AL., *INTERNATIONAL ENVIRONMENTAL LAW & POLICY* 631, 633-36 (3d ed. 2007).

advantages and disadvantages of each. Also discussed is the viability of two U.S. domestic theories, for both residents and aliens.

The final section of this Comment examines one of the most recently filed climate change cases, *Native Village of Kivalina v. Exxon-Mobil Corp.*,<sup>7</sup> and its chances for success given the nature of the parties, the basis for the claim, and the avenues of liability previously discussed. This Comment concludes that the international and U.S. legal systems are slowly “warming up” to the idea of litigation over climate change harms.

## II. AN OVERVIEW: ADVERSE IMPACTS OF CLIMATE CHANGE, POTENTIAL PLAINTIFFS & VULNERABLE DEFENDANTS

Due to recent discoveries of anthropogenic contributions to climate change, a scientific consensus now exists that makes it anywhere from likely to virtually certain that increases in GHGs are causing climate change.<sup>8</sup> According to the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report, human-induced climate change is largely to blame and will unequivocally transform the shape and face of the Earth as we know it.<sup>9</sup> Based upon these dire projections, one may assume that the international community would take every opportunity to stop this alarming trend. Although work is underway in many nations and regional localities throughout the world, many of the largest GHG contributors are not participating in any meaningful way.<sup>10</sup>

Human activities caused global GHG emissions to increase more than 70 percent between 1970 and 2004 alone.<sup>11</sup> The Fourth IPCC Summary reports that it is likely (more than a 90 percent probability) that anthropogenic activity contributed to a rise in average sea level.<sup>12</sup> In fact, due to new technologies and scientific research methodologies, the IPCC reports that, since the mid-20th century, it is very likely most of the observed increase in average global temperature is due to the increase in anthropogenic greenhouse gas concentrations.<sup>13</sup>

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7. No. cv-08-1138, (N.D. Cal. Feb. 26, 2008).

8. INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2007: SYNTHESIS REPORT (2007), available at [http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4\\_syr\\_spm.pdf](http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_spm.pdf) [hereinafter IPCC].

9. See *id.* at 5, 7-14.

10. See, e.g., *Climate Change: The Big Emitters*, BBC NEWS, July 4, 2005, <http://news.bbc.co.uk/1/hi/sci/tech/3143798.stm>; Kristen Philipkoski, *Bali Climate Change Meeting Opens; China, India and U.S. Still in Denial*, ASSOCIATED PRESS, Dec. 3, 2007, <http://blog.wired.com/wiredscience/2007/12/bali-climate-ch.html>.

11. IPCC, *supra* note 8, at 5.

12. *Id.* at 6.

13. *Id.* at 5.

### A. Most Viable Plaintiffs for Climate Change Liability

Due to the generally diffuse nature of GHG emissions and harms, choosing a plaintiff is of great importance in ascertaining the potential for success in a liability suit. Perhaps the best place to begin the search is to identify the group that is currently experiencing the gravest harms. Given the difficulty and necessity of proving causation in any climate change claim, injuries which are diffuse and difficult to attribute to climate change would make such a case problematic, and with little chance of success.<sup>14</sup> One of the largest hurdles plaintiffs will face is the ability to demonstrate a causal link between specific emissions and harms caused. Complicating matters is the reality that nearly all people on Earth contribute to climate change. Generally, the ideal plaintiffs are those individuals or group of individuals who contribute the least but are harmed the most, who are discrete and identifiable, and who can demonstrate significant and specialized harms readily linked to greenhouse gas emissions. A brief consideration of who these plaintiffs may be follows.

#### 1. Sea Level Rise

Perhaps the most widely accepted and well-documented impact of global climate change is sea-level rise.<sup>15</sup> It may also be the most costly.<sup>16</sup> The global sea level rose at an average rate of 1.8 mm a year before 1993 and 3.1 mm a year since then.<sup>17</sup> The primary contributors are melting glaciers, ice caps, ice sheets, and thermal expansion.<sup>18</sup> Alarmingly, most predict that, even with action, the worst is yet to come.<sup>19</sup>

The propensity for sea level rise as a result of climate change was already widely acknowledged and accepted in the late 1980s;<sup>20</sup>

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14. Daniel Farber, *Basic Compensation for Climate Change*, 155 U. PA. L. REV. 1605, 1610 (2007) (advocating for a victims of climate change compensation system; for the purposes of incremental change and potential success, a compensation system should start with “mid-range impacts—impacts involving significant, but not catastrophic, costs that are likely to occur” and can readily be connected to climate change).

15. See, e.g., Dennis Culley, *Global Warming, Sea Level Rise and Tort*, 8 OCEAN & COASTAL L.J. 91 (2002); WORLD BANK, *supra* note 3.

16. See, e.g., NICHOLAS STERN, STERN REVIEW ON THE ECONOMICS OF CLIMATE CHANGE part II (Chapters 3-6) (2006), available at [http://www.hm-treasury.gov.uk/sternreview\\_index.htm](http://www.hm-treasury.gov.uk/sternreview_index.htm).

17. IPCC, *supra* note 8, at 1.

18. *Id.*

19. See *id.* at 7-14 (stating that even with GHG stabilization, anthropogenic warming and sea level rise would continue for centuries due to the time scales associated with climate processes and feedbacks).

20. EPA's 1983 Report developed the first set of year-by-year scenarios of sea level

so much so that when signing the Framework Convention on Climate Change<sup>21</sup> in 1992, four island states (Fiji, Kiribati, Nauru, and Tuvalu) made the following declaration: “understanding that signature of the convention shall in no way constitute a renunciation of any rights under international law concerning state responsibility for the adverse effects of climate change, and that no provisions in the convention can be interpreted as derogating from the principles of general international law.”<sup>22</sup> All four states, but particularly Tuvalu, are frequently cited as the first victims, and among the most viable plaintiffs, of climate change. For example, Tuvalu is quickly becoming uninhabitable, as much of its infrastructure has been destroyed by rising seas, erosion, and unusually strong storms. Emigration may soon be the only viable option for the island’s inhabitants.<sup>23</sup>

There are numerous reports and examples of land loss as a result of rising sea levels.<sup>24</sup> Because anthropogenic climate change very likely caused these effects, the most viable climate change liability plaintiffs include the individuals whose property interests and ways of life no longer exist. This is especially true because many of these nations are among some of the lowest GHG contributors, have experienced some of the most devastating and immediate harms, are discrete in number, and may have an easier time

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rise as a result of climate change. That discussion, among many others, can be found in GREENHOUSE EFFECT AND SEA LEVEL RISE: A CHALLENGE FOR THIS GENERATION (Michael C. Barth & James G. Titus, eds. 1984). Although originally published by a private company, it was written by EPA employees and EPA contractors. U.S. ENVTL. PROT. AGENCY, THE POTENTIAL EFFECTS OF CLIMATE CHANGE ON THE UNITED STATES (1989) (report to Congress). Additionally, for an overview of the climate change science related to sea level rise readily discussed and available in the late 1980’s, see Durwood Zaelke & James Cameron, *Global Warming and Climate Change: An Overview of the International Legal Process*, 5 AM. U. J. INT’L L. & POL’Y 249, 253-60 (1990) (stating Tuvalu, Maldives and other island nations will likely be the first victims and environmental refugees of climate change; nearly twenty years later, Tuvalu was one of the first island nations to threaten a climate change suit, in this case against the United States and Australia, for GHG emission contributions to sea level rise). See, e.g., GERMAN WATCH, CLIMATE CHANGE CHALLENGES TUVALU (2004), available at <http://www.germanwatch.org/download/klak/fb-tuv-e.pdf>.

21. United Nations Framework Convention on Climate Change (UNFCCC), May 9, 1992, 1771 U.N.T.S. 107, 31 I.L.M. 849 (1992).

22. *Id.* Declarations 1-2.

23. Richard S.J. Tol & Roda Verheyen, *Liability and Compensation for Climate Change Damages – A Legal and Economic Assessment*, 32 ENERGY POL’Y 1109 (2004) (using Tuvalu as an example of the first victims of climate change to illustrate the need for a system for paying damages and compensation to current and future victims); see also Tom Price, *High Tide in Tuvalu: In the Tropical Pacific, Climate Change Threatens to Create a Real-Life Atlantis – Global Warming*, SIERRA, July-Aug. 2003, at 34.

24. See, e.g., A. BARRIE PITTOCK, CLIMATE CHANGE: TURNING UP THE HEAT 252-84 (2005) (discussing examples of land loss and other ramifications around the world); Culley, *supra* note 15 (discussing sea level impacts and liability in general for island nations, particularly for the island nation of Tuvalu); David A. Grossman, *Warming Up to a Not-So-Radical Idea: Tort-Based Climate Change Litigation*, 28 COLUM. J. ENVTL. L. 1, 12-13 (2003) (discussing wide-ranging and costly impacts on the United States Atlantic and Gulf Coasts).

than most in establishing a causal link between global warming and harms suffered.

## 2. Polar/Arctic Region Loss of Habitat

The Arctic is extremely susceptible to climate change effects. The IPCC Summary reported with high confidence that snow cover contractions, decreases in sea ice, and increases in permafrost thaw are all likely to continue, with some projections predicting that Arctic late-summer sea ice will disappear almost entirely by the latter part of the 21<sup>st</sup> century.<sup>25</sup> The Arctic Climate Impact Assessment (ACIA) comprehensively discusses the impacts of climate change particular to this area, including evidence that average temperatures in the region are rising twice as fast as the rest of the world.<sup>26</sup> The report details the global impacts of the changing arctic; rising sea levels, loss of reflective snow (resulting in further warming of the planet), and biodiversity implications are some of the most profound.<sup>27</sup>

Indigenous Arctic people face major economic and cultural hardships, including forced relocation due to coastal flooding and loss of food sources due to the thinning populations of walrus and polar bear. The Inuits are native to the United States, Canada, Denmark, and the Russian Federation and occupy the most Northern latitudes of our planet. The Inuit have inhabited these northern areas for at least the past one thousand years.<sup>28</sup> The impacts of climate change are much more specific and certain for this group than other potential litigants because the Inuit, for example, have particularly defined cultural norms directly dependent upon the climate of the region, *i.e.*, the ice, snow, and flora and fauna of the area.<sup>29</sup>

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25. Grossman, *supra* note 24; IPCC, *supra* note 8.

26. HASSOL, *supra* note 5, at 8.

27. *Id.* at 10-17.

28. SHEILA WATT-CLOUTIER, PETITION TO THE INTER AMERICAN COMMISSION ON HUMAN RIGHTS SEEKING RELIEF FROM VIOLATIONS RESULTING FROM GLOBAL WARMING CAUSED BY ACTS AND OMISSIONS OF THE UNITED STATES 13-14 (2005), available at <http://www.inuitcircumpolar.com/files/uploads/icc-files/FINALPetitionICC.pdf>.

29. See, e.g., Press Release, Nat'l Snow & Ice Data Ctr., Arctic Sea Ice Shatters All Previous Record Lows (Oct. 1, 2007), [http://nsidc.org/news/press/2007\\_seaiceminimum/20070810\\_index.html](http://nsidc.org/news/press/2007_seaiceminimum/20070810_index.html); U.S. GEN'L ACCOUNTING OFFICE, ALASKA NATIVE VILLAGES: MOST ARE AFFECTED BY FLOODING AND EROSION, BUT FEW QUALIFY FOR FEDERAL ASSISTANCE (2003) (discussing sinking villages as a result of loss of permafrost due to rising temperatures); IPCC, *supra* note 8, at 6. See also Shi-Ling Hsu, *A Realistic Evaluation of Climate Change Litigation through the Lens of a Hypothetical Lawsuit*, 79 U. COLO. L. REV. 701 (2008) (arguing that the strongest plaintiffs for climate change lawsuit may be the Inuit in the polar region).

Although debate continues about specific impacts of climate change, it is widely accepted and documented that climate change will dramatically affect the polar region. This data makes the arctic populations likely candidates for leading the liability charge. The harms are specialized because climate change destroys not only local infrastructures, but also cultural norms. Accordingly, the indigenous arctic populations meet the established “ideals” of the most viable climate change plaintiffs.

### *B. Most Vulnerable Defendants*

Given the overwhelming number of GHG emitters (a.k.a. potential defendants), another important consideration in any climate change suit is whether any one particular entity, state, or industry, etc., is sufficiently culpable for a court to award damages against that emitter or group of emitters. The naming of defendants is inextricably linked with the choice of legal theory on which to rest the claim. For example, if a plaintiff chooses to file an action with the International Court of Justice (ICJ), claims can only be brought by states against other states.

One logical approach is to name the largest emitters of GHGs, especially when considering problems associated with causation. The industry emitting more GHGs than any other, in the United States, is the electricity generation industry.<sup>30</sup> It is said that if one were to attach the top fifty U.S. GHG emitters as defendants, they would collectively account for more than 25 percent of U.S., and nearly 5.5 percent of worldwide emissions.<sup>31</sup> Another report shows that U.S. power plants are responsible for 63 percent of all U.S. sulfur dioxide emissions and 39 percent of carbon dioxide emissions.<sup>32</sup> An added benefit to naming this group as defendants is the general lack of intervening causes in the release of emissions from power plants, as may be the case with other enterprises, such as the automobile industry. Furthermore, with a number of scientific

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30. For a summary of U.S. emissions since the UNFCCC, see U.S. ENVTL. PROT. AGENCY, INVENTORY OF GREENHOUSE GAS EMISSIONS AND SINKS: 1990-2005 (2007), available at <http://www.epa.gov/climatechange/emissions/downloads06/07CR.pdf>. See also U.S. ENVTL. PROT. AGENCY, Human Related Sources and Sinks of Carbon Dioxide, [http://www.epa.gov/climatechange/emissions/co2\\_human.html](http://www.epa.gov/climatechange/emissions/co2_human.html) (summarizing emissions by industry) (last visited July 11, 2009).

31. This calculation was made by using the EPA's EGrid database, available for download at <http://www.epa.gov/cleanenergy/egrid/index.htm> (cited in Hsu, *supra* note 29, at 724).

32. SANDRA GOODMAN, BENCHMARKING AIR EMISSIONS OF THE 100 LARGEST ELECTRIC POWER PRODUCERS IN THE UNITED STATES - 2002 at 7 (2004), available at <http://216.235.201.250/netcommunity/document.doc?id=108>. Furthermore, just five of these producers contribute 25 percent of U.S. CO2 emissions. *Id.* at 3.

advances in alternative energy and emissions mitigation technology, electricity generation industries will have a considerably harder time arguing the necessity of maintaining the status quo.<sup>33</sup> Data may be even worse than previously recorded, as the U.S. has not yet implemented a Canadian style mandatory reporting requirement. Instead, the EPA provides the estimates broken down by industrial sector.<sup>34</sup>

Another reason for the vulnerability of this group is that one could find culpability for past emissions, which are resulting in today's harms, rather than having to argue prospective harms as the basis for liability. Claims about prospective harms are rarely successful. However, with the number of alternative emission-cutting technologies made available for use by companies over the last several years, this particular set of defendants seem to have much weaker arguments on the "best technology available" defense.<sup>35</sup> One could reasonably argue that the electricity generation industry intentionally failed to prevent or reduce its global warming impact. Data on profits realized in the absence of GHG regulations, particularly those made well after affordable technology and mitigation alternatives became available, would lend support to this argument. Industry conduct has, and will, cause long-term harm, especially to those groups previously identified. The arguments for liability seem to find their strongest basis in pointing to conduct that took place after the science was available and the harms were identified, but before implementation of regulatory mandates. Now may very well be that time.

There are other options, of course. Parties could sue states with high levels of GHG emissions, an option that must be considered when exploring most international liability frameworks. This is more fully discussed below. However, there are significant hurdles, for most states, to suing the United States, as the U.S. routinely objects to and refrains from ratifying treaties that may give rise to liability. Furthermore, all nations emit greenhouse gases, leaving the question of whether a smaller country contributing to the climate change problem could find success in suing another, larger contributor of GHGs.

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33. For a general list of available alternative energy sources, see, for example, Alternate Energy Sources, <http://www.alternate-energy-sources.com> (last visited Nov. 30, 2009).

34. Nell Greenfieldboyce, *And the Biggest Producer of Greenhouse Gases Is . . .* (Nat'l Pub. Radio June 6, 2007), available at <http://www.npr.org/templates/story/story.php?storyId=10745942>.

35. Hsu, *supra* note 29, at 730-33.

## III. POTENTIAL INTERNATIONAL LIABILITY SCHEMES

The primary question of liability is answered by determining whether greenhouse gas emitting nations or companies can be held liable for the impacts generated by their *own* emissions, given that nearly every person on Earth contributes in some way to climate change. There are two essential causation questions. The first is whether sufficient evidence exists to establish a causal link between anthropogenic emissions and climate change. At this point, it is widely accepted that a link does exist between the two.<sup>36</sup> The second, and more difficult causation hurdle, is whether particular damage suffered by any one individual or group of individuals is sufficiently attributable to any single source of emissions. Thus, even if the establishment of a link between particular damage and anthropogenic emissions is possible, the problem of causation is still inherent in any liability scheme. There is a great deal of scholarly literature discussing the ways in which apportionment for harms may take place.<sup>37</sup>

A. *Applicable Principles of International Law*

Principle 2 of the 1992 Rio Declaration codifies the principle that, "[s]tates have...the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction."<sup>38</sup> Also relevant to liability, "in international law, states

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36. See, e.g., IPCC Report, *supra* note 8, at 5.

37. See, e.g., Michael G. Faure & André Nollkaemper, *International Liability as an Instrument to Prevent and Compensate for Climate Change*, 43A STAN. J. INT'L L. 123, 128 (2007) (writing from an integrated international and domestic law perspective in an attempt to transcend differences between particular jurisdictions, including the difference between international and domestic law, and to focus on more general conceptions of liability in climate change). See also RODA VERHEYEN, CLIMATE CHANGE DAMAGE & INTERNATIONAL LAW: PREVENTION DUTIES & STATE RESPONSIBILITY 137-224 (2005); Myles Allen, *Liability for Climate Change: Will it Ever be Possible to Sue Anyone for Damaging the Climate?*, 421 NATURE 891, 891-92 (2003); Michael J. Saks & Peter David Blanck, *Justice Improved: The Unrecognized Benefits of Aggregation and Sampling in the Trial of Mass Torts*, 44 STAN. L. REV. 815 (1992); John E. Noyes & Brian D. Smith, *State Responsibility and the Principle of Joint and Several Liability*, 13 YALE J. INT'L L. 225, 237-38 (1988).

38. Rio Declaration on Environment and Development, Annex I, Principle 2, June 14, 1992, U.N. Doc. A/CONF.151/26/Rev.1 (Vol. 1), available at <http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm>; see also Int'l Law Comm'n, Draft Principles on the Allocation of Loss in the Case of Transboundary Harm Arising out of Hazardous Activities, Principle 6, in *Report of the International Law Commission on the Work of its Fifty-Eighth Session*, U.N. Doc. A/61/10 (Oct. 1, 2006), available at [http://untreaty.un.org/ilc/texts/instruments/english/commentaries/9\\_10\\_2006.pdf](http://untreaty.un.org/ilc/texts/instruments/english/commentaries/9_10_2006.pdf).

are responsible for violations of public international law and are obliged to compensate the indirectly or directly affected states for the damage caused.”<sup>39</sup>

Thus, in a general sense, there is dialogue and codification of an arguable right to a safe and healthy environment. However, whether those precepts encompass climate change is a highly contentious and unsettled debate. It remains to be seen whether an international organization will put its legitimacy on the line in finding these declarations sufficient to ground claims of international violations against such countries as the United States for climate change harms.<sup>40</sup>

### *B. United Nations Framework Convention on Climate Change and the Kyoto Protocol*

The major sources of international environmental law are treaties and international agreements.<sup>41</sup> Scholars have carefully scrutinized the leading international documents on environmental law to ascertain principles or declarations by which emitting nations may be held liable.<sup>42</sup> Given near universal ratification of the United Nations Framework Convention on Climate Change (UNFCCC), the Convention is a logical place to begin specific discussions on potential mechanisms for liability. Considering the UNFCCC, without Kyoto, there are two articles particularly applicable to the question of liability. The first is Article 2, which states:

The ultimate objective of this Convention and any related legal instruments that the Conference of the Parties may adopt is to achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to cli-

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39. Tol & Verheyen, *supra* note 23, at 2 (citing *The Factory at Chorzów*, (Ger. v. Pol.), 1928 P.C.I.J. (ser.A) No. 17, at 30 (Sept. 13)).

40. See generally Andrew L. Strauss, *The Legal Option: Suing the United States in International Forums for Global Warming Emissions*, 33 ENVIR. L. REP. 10,185 (2003) (discussing possible international forums, including declarations and treaties, for suing the United States for climate change).

41. See, e.g., The Am. Soc’y for Int’l L., ASIL Guide to Electronic Resources for International Law, <http://www.asil.org/resource/env1.htm> (last visited July 12, 2009).

42. See, e.g., Faure & Nollkaemper *supra* note 37 at 142-50; Sumudu Atapattu, *The Right to a Healthy Life or the Right to Die Polluted?: The Emergence of a Human Right to a Healthy Environment Under International Law*, 16 TUL. ENVTL. L.J. 65 (2002).

mate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.<sup>43</sup>

This provision represents the purpose of the UNFCCC, particularly in the realm of customary international law.<sup>44</sup> Moreover, in accordance with the Vienna Convention, a signatory state which fails to ratify a convention is still under an obligation not to frustrate the object and purpose of a treaty to which it is a signatory.<sup>45</sup> Thus, it could be argued that those countries that failed in their domestic policy to refrain from frustrating the purposes outlined in the text of the UNFCCC are open to liability. This, of course, is highly contentious as most view this section as non-binding and aspirational in nature.<sup>46</sup>

Other language to consider for potential liability falls within Article 4, the “commitments” section.<sup>47</sup> In particular, Article 4, paragraph 2 requires industrial nations to commit to lowering, by the year 2000, GHGs within their borders to the level emitted in 1990, a task every state failed to meet.<sup>48</sup> For those countries that are parties to the UNFCCC, but not Kyoto, the question becomes whether these sections are sufficient enough to maintain an action in liability. Most agree the answer is no, as the provisions are too vague.<sup>49</sup>

However, it may be different in situations where a country commits to both the UNFCCC and the Kyoto Protocol, as the latter provides very specific requirements for reducing GHGs, with quantifiable measurements on certain dates.<sup>50</sup> Article 3(1) of Kyoto mandates Annex I countries to, individually or jointly, meet their assigned emissions criteria, and thus, where there is a clear obli-

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43. UNFCCC, *supra* note 21, art. 2.

44. Roda Verheyen, *The Legal Framework of Adaptation and Adaptive Capacity*, in CLIMATE CHANGE, ADAPTIVE CAPACITY AND DEVELOPMENT 182 (Joel B. Smith, et al. eds., 2003).

45. *Id.*

46. See Daniel Bodansky, *The United Nations Framework Convention on Climate Change: A Commentary*, 18 YALE J. INT'L L. 451, 516 (1993); PATRICIA W. BIRNIE & ALAN E. BOYLE, INTERNATIONAL LAW & THE ENVIRONMENT 524-26 (2d ed. 2002); PHILIPPE SANDS, PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW 361-65 (2d ed. 2003).

47. UNFCCC, *supra* note 21, art. 4.

48. *Id.* art. 4(2).

49. See, e.g., Faure & Nollkaemper, *supra* note 37, at 142-43; Bodansky, *supra* note 46, at 516; BIRNIE & BOYLE, *supra* note 46, at 526; SANDS, *supra* note 46, at 364-65.

50. Kyoto Protocol to the United Nations Framework Convention on Climate Change, Annex B, Dec. 10, 1997, U.N. Doc. FCCC/CP/1997/CRP.6, available at <http://unfccc.int/resource/docs/cop10/09.pdf>. The protocol entered into force upon Russian ratification on Feb. 16, 2005. A list of ratifying countries is available at UNFCCC, Parties to the Kyoto Protocol, <http://maindb.unfccc.int/public/country.pl?group=Kyoto> (last visited Nov. 30, 2009).

gation, failure to comply could be seen as a breach of an express treaty obligation.<sup>51</sup>

Literature abounds on UNFCCC and Kyoto limitations. Although the UNFCCC is a major step in facilitating climate change dialogue, it lacks any binding commitments or implementation authority. Furthermore, while Kyoto actually establishes binding commitments for member parties to reduce GHG emissions, it lacks commitments by the most serious emitters: the United States,<sup>52</sup> China,<sup>53</sup> and India.<sup>54</sup> To use the U.S. as an example, GHG emissions are projected to be more than thirty-two percent above 1990 levels by 2010 and more than fifty percent above 1990 levels by 2020.<sup>55</sup> Whether a party to Kyoto or otherwise, success in decreasing emissions to specified levels is far from certain.<sup>56</sup> Furthermore, even if all Kyoto parties meet the Protocol's commitments, this will only represent the tip of the iceberg (or what is left of it) in stabilizing GHG concentrations in the atmosphere. Climatologists estimate that full Kyoto implementation will reduce previous global warming estimates by one-twentieth of one degree by 2050.<sup>57</sup> In order to make a difference in global temperatures, all industrialized and developing nations will need to play a part, as emissions will need to be reduced by sixty to eighty percent.<sup>58</sup> Thus, while Kyoto is certainly a step in the right direction, more must be done if global warming is to slow.<sup>59</sup>

51. *Id.* art. 3(1).

52. See Carbon Dioxide Information Analysis CTR., Oak Ridge Nat'l Lab. (ORNL), 2007 Total Co2 emissions by country, available at [cdiac.ornl.gov/trends/emis/top2007.tot](http://cdiac.ornl.gov/trends/emis/top2007.tot)

53. China accounts for roughly 25 percent of global carbon dioxide emissions. See *id.* But see Neth. Env'tl. Assessment Agency, China Now No. 1 in CO2 Emissions; USA In Second Position, <http://www.pbl.nl/en/dossiers/Climatechange/moreinfo/Chinanowno1inCO2emissionsUSAinsecondposition.html> (last visited July 12, 2009).

54. See CD/AC, *supra* note 52 (listing India as accounting for roughly five percent of global carbon emissions).

55. UNFCCC SECRETARIAT, DATA APPENDICES TO UNFCCC PRESENTATION AT THE AWG WORKSHOP 6 (2006), available at [http://unfccc.int/files/meetings/cop\\_12/in-session\\_workshops/application/pdf/061107\\_6\\_ghg\\_app.pdf](http://unfccc.int/files/meetings/cop_12/in-session_workshops/application/pdf/061107_6_ghg_app.pdf).

56. See, e.g., Associated Press, *Canada Acknowledges it Will Not Meet Kyoto Targets Under New Climate Change Plan*, INT'L HERALD TRIB., Apr. 26, 2007, <http://www.iht.com/articles/ap/2007/04/27/america/NA-GEN-Canada-Climate-Change.php>; Fiona Harvey, *Italy Buys to Meet Kyoto Targets*, FIN. TIMES (London), Apr. 5, 2008, [http://us.ft.com/ftgateway/superpage.ft?news\\_id=fto040420082230597333](http://us.ft.com/ftgateway/superpage.ft?news_id=fto040420082230597333); *Belgium Will Not Meet Its Kyoto Targets*, BRUSSELS RAAD VOOR HET LEEFMILIEU, Nov. 10, 2006, <http://www.bralvzw.be/node/200>.

57. S. Fred Singer, *What Are the Prospects For an Effective Implementation of the Kyoto Protocol*, 30 NAT. RESOURCES F. 76, 76 (2006), available at <http://www.blackwell-synergy.com/doi/pdf/10.1111/.html>.

58. IPCC, *supra* note 8, at 20; see also NIKLAS HÖHNE ET AL., WWF CLIMATE SCORECARDS: COMPARISON OF THE CLIMATE PERFORMANCE OF THE G8 COUNTRIES 4 (2005), available at [http://www.panda.org/downloads/climate\\_change/g8scorecardsjun29light.pdf](http://www.panda.org/downloads/climate_change/g8scorecardsjun29light.pdf).

59. For a general discussion of Kyoto's failures, see, for example, William D. Nordhaus, *After Kyoto: Alternative Mechanisms to Control Global Warming*, 96 AM. ECON.

Additionally, as previously mentioned, island states made declarations in both the UNFCCC and Kyoto, making it clear they believed the emission reduction requirements were insufficient to prevent damage to their respective locales.<sup>60</sup> By making such declarations, the island states left open the potential for liability, particularly against the mega-emitters outside Kyoto commitments. The most significant limitations of the UNFCCC and Kyoto are that the emissions requirements are relatively small, especially in comparison to the potential harms. The worst emitters are not bound to its provisions and no long-term emission reduction guarantees are in place, as the climate regime requires all states to consent to reduction obligations on a reoccurring five-year basis.<sup>61</sup>

One final observation of the UNFCCC and Kyoto deals with the avenues of redress contained explicitly within the documents. Article 14 of the UNFCCC addresses various dispute settlement opportunities, including negotiation, arbitration, or submission to the International Court of Justice.<sup>62</sup> Also, Article 14, paragraph 5 includes procedures for a conciliation,<sup>63</sup> which would permit a state to “legally” investigate whether a causal link existed between climate change harms in their state and the climate policy implemented in another country, and then, based on the undertaken investigation, request issuance of a non-binding recommendation by the committee.<sup>64</sup> Although only promising in theory, this may at least establish causation for purposes of liability. However, the Conference of the Parties has not yet approved the conciliations rules of procedure, as mandated in Article 14, paragraph 6 of the UNFCCC, and this avenue may not be available.<sup>65</sup> Furthermore, for the largest emitters, who have no Kyoto reduction obligations and have not submitted to ICJ jurisdiction, the prospects for filing

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REV. 31 (2006) (comparing Kyoto and other quantity-oriented control mechanisms to price-control methods and concluding that price-control methods are more efficient and effective); Stephen M. Gardiner, *The Global Warming Tragedy and the Dangerous Illusion of the Kyoto Protocol*, 18 ETHICS & INT'L AFF. 23, 23-29 (2004) (arguing, generally, that Kyoto is weak in its efforts and creates a false sense of security and accomplishment); Bruce Pardy, *The Kyoto Protocol: Bad News for the Global Environment*, 14 J. ENVTL. L. & PRAC. 27 (2004) (discussing specifics of Kyoto's failures and inadequacies).

60. Kyoto Protocol: Status of Ratification at declarations 4 & 7, [http://unfccc.int/files/kyoto\\_protocol/background/status\\_of\\_ratification/application/pdf/kp\\_ratification.pdf](http://unfccc.int/files/kyoto_protocol/background/status_of_ratification/application/pdf/kp_ratification.pdf) (last visited July 12, 2009).

61. Kyoto Protocol, *supra* note 50, arts. 4(9), 21(7); *see also* Nordhaus, Gardiner & Pardy *supra* note 59 (providing general discussions of Kyoto failures).

62. UNFCCC, *supra* note 21, art. 14.

63. *Id.* art. 14(5).

64. *Id.* art. 14(6).

65. *See* Timo Koivurova, *International Legal Avenues to Address the Plight of Victims of Climate Change: Problems and Prospects*, 22 J. ENVTL. L. & LITIG. 267, 276 (2007).

suit against those doing the most harm are limited under UNFCCC and Kyoto.

### C. *International Court of Justice*

Overall, the same substantive allegation requirements apply to any state submitting a petition to the International Court of Justice (ICJ). In this case, a petition must allege facts sufficient to demonstrate the identification of climate change and its harms, whether from loss of sea ice or sea-level rise, as an international legal wrong justifying a remedy. In claims of liability or any other adversarial proceeding, the ICJ jurisdiction only extends to state v. state actions, and only then if the Court finds it has jurisdiction.<sup>66</sup> Given the widely accepted principles of state sovereignty,<sup>67</sup> jurisdiction is ultimately based on state consent.<sup>68</sup>

There are three main ways for the ICJ to obtain jurisdiction. First, under Article 36(2) of the Statute of the ICJ, a state may elect prospectively to accept ICJ compulsory jurisdiction.<sup>69</sup> The problem with this option is that few major emitters accepted compulsory jurisdiction. For example, the United States withdrew its acceptance after the ICJ ruled against it in a case brought by Nicaragua in the 1980s.<sup>70</sup>

The ICJ can also attain jurisdiction if the involved states mutually consent to the Court's authority.<sup>71</sup> The likelihood that a potential defendant would submit to the ICJ, however, is slim to none. It is hard to imagine a scenario where the United States, China, India, or a host of other nations would voluntarily subject themselves to an international court system's determination of liability on such a contentious issue.

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66. International Court of Justice, Contentious Jurisdiction, <http://www.icj-cij.org/jurisdiction/index.php?p1=5&p2=1> (last visited July 12, 2009).

67. See, e.g., Conference on the Human Environment, princ. 21, June 5-16, 1972, U.N. Doc. A/CONF.48/14/Rev. 1, U.N. Sales No. E.73.II.A.14, pt. 1, ch. 1, *reprinted in* 11 I.L.M. 1416; Rio Declaration on Environment and Development, Aug. 12, 1992, U.N. Doc. A/CONF.151/5/Rev. 1 (1992), 31 I.L.M. 876.

68. Strauss, *supra* note 40, at 10,185. However, two frequently cited cases by those arguing the ICJ may be a viable route to liability are the *Corfu Channel* case, where the ICJ said although state's must be allowed to maintain their sovereignty, that sovereignty also embodies "the obligation of every state not to allow its territory to be used for acts contrary to the rights of other states." *Corfu Channel* (U.K. v. Alb.) 1949 I.C.J. 4, 22 (Apr. 9). The other case frequently cited is the *Lac Lanoux Arbitration*, where the arbiters limited sovereignty to the extent that a state has an obligation to recognize, or at least not ignore, the rights of other states in using its own rights. *Lake Lanoux* (Spain v. Fr.) 53 AM. J. INT'L L. 156, 159 (Arb. Tribunal 1957).

69. Statute of the International Court of Justice, art. 36(2), 59 Stat. 1031, 1060, T.S. No. 993 (1945) [hereinafter ICJ Statute].

70. *Military and Paramilitary Activities* (Nicar. v. U.S.) 1986 I.C.J. 14 (June 27).

71. ICJ Statute, *supra* note 69, art. 36(1).

The final, and perhaps most likely avenue for the ICJ to obtain jurisdiction, also comes through Article 36(1) of the Statute of the ICJ.<sup>72</sup> It requires the parties to specifically agree through treaty provisions to submit to the ICJ for dispute resolution, particularly in an area capable of extrapolation to emissions harm and climate change.<sup>73</sup>

Several limitations exist when bringing a claim against the major GHG emitters through the ICJ. First, jurisdiction must be acquired over the case through one of the above mentioned mechanisms.<sup>74</sup> Even assuming that obtaining jurisdiction through consent or treaty provisions is possible, other significant issues emerge.<sup>75</sup> The causes of action must be well pleaded and give rise to a governing piece of international “legislation” (i.e., treaty, convention, etc.) sufficient for the plaintiff to survive a motion to dismiss. The plaintiff must also obtain standing.<sup>76</sup> Accordingly, in obtaining a viable claim against the major emitting nations, the ICJ does not appear to be the most promising avenue.<sup>77</sup>

#### D. *Inter-American Commission on Human Rights*

There are two governing bodies under this system. The first is the Inter-American Commission on Human Rights (IACHR), the entity that most of this discussion will center on, since it potentially could obtain, through creative legal work, jurisdiction over the United States as a major emitter of GHGs. On the other hand, the Inter-American Court of Human Rights is not yet a realistic means through which to sue the United States for climate change, although it may serve as an option for other Organization of American States members.

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72. *Id.*

73. *Id.*; see also Strauss, *supra* note 40 (discussing the possibility of using Friendship, Commerce and Navigation (FCN) or other similar treaties which have broad language requiring that participating countries treat each other's people and property favorably and equitably to obtain ICJ jurisdiction).

74. See generally Mark L. Movsesian, *Judging International Judgments*, 48 VA. J. INT'L L. 65, 73-75 (2007) (“States tend to reject ICJ jurisdiction over disputes that implicate significant interests.”).

75. The Island nation of Tuvalu filed a petition with the ICJ against the United States and Australia, alleging each state's violation of the UNFCCC gave rise to liability for damages incurred by Tuvalu due to climate change effects caused by their emissions. For an account of the step-by-step requirements for Tuvalu to file under the ICJ, and the barriers inherent in such a filing, see Akiko Okamatsu, *Problems and Prospects of International Legal Disputes on Climate Change*, in Berlin Conference on the Human Rights Dimensions of Global Environmental Change (2005).

76. See Koivurova, *supra* note 65, at 280.

77. Again, for the purposes of this Comment, only liability claims are considered. The ICJ may be a viable venue for obtaining an advisory opinion on climate change but that option is not analyzed here.

Established in 1979, the Inter-American Court of Human Rights' purpose is to enforce the Inter-American Convention on Human Rights, the principle human rights treaty applied to the Organization of American States.<sup>78</sup> To submit a case to the court, the petition goes through a two-tiered process whereby the case is first submitted to the Inter-American Commission on Human Rights to determine whether it meets one of four required criteria for standing.<sup>79</sup> Those criteria include:

- (1) the respondent State has not reasonably complied with the Commission's final, confidential recommendations on the merits; (2) the case involves alleged violations of the American Convention or other treaty over which the Court exercises contentious jurisdiction with respect to the respondent State; (3) the impugned facts occurred *after* the treaty took effect for that State; and (4) the State has made a declaration recognizing the Court's jurisdiction as binding, either *ipso facto* or in the case *sub judice*.<sup>80</sup>

If the court finds none of the criteria have been met, or otherwise decides to not refer the case, the Commission may publish its own nonbinding findings and recommendations on the merits of the case.<sup>81</sup>

Not surprisingly, the U.S. has not ratified the Inter-American Convention on Human Rights and would almost certainly not subject itself to the Court's jurisdiction voluntarily. The United States failing to ratify such treaties has become a reoccurring theme in American foreign policy.

There is a remote possibility, however, that the Inter-American Commission on Human Rights *could theoretically* obtain jurisdiction over the United States on the issue of climate change. There are several advantages to this system, as recognized by the Inuit Circumpolar Council (ICC) when they filed a petition with the

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78. Statute of the IACHR, art. 1, Oct. 1, 1979, O.A.S. Res. 448 (IX-0/79), O.A.S. Off. Rec. OEA/Ser.P/IX.0.2/80, vol. 1, at 98, entered into force Jan. 1, 1989. *See also* American Convention on Human Rights, art. 62.3, Nov. 22, 1969, 1144 U.N.T.S. 123, O.A.S.T.S. No. 36, at 1, OEA/Ser.L/V/II.23 doc. rev. 2, entered into force July 18, 1978 [hereinafter IACHR].

79. The United States is not a party to the Covenant on Civil and Political Rights, thus an appeal to the Human Rights Committee is not possible. *See* International Covenant on Civil and Political Rights, Dec. 16, 1996, 999 U.N.T.S. 171, *available at* [http://www.unhchr.ch/html/menu3/b/a\\_ccpr.htm](http://www.unhchr.ch/html/menu3/b/a_ccpr.htm).

80. Tara J. Melish, *The Inter-American Court of Human Rights: Beyond Progressivity*, in *SOCIAL RIGHTS JURISPRUDENCE: EMERGING TRENDS IN COMPARATIVE AND INTERNATIONAL LAW* 12-13 (M. Langford ed., 2008) (emphasis in original).

81. *Id.* at 12.

IACHR against the United States (alleging the U.S. could be held liable for climate change because of its status as the world's largest emitter of GHGs).<sup>82</sup> The petition contended that the emissions violated the Inuit's human rights,<sup>83</sup> and recognized the IACHR as a comparatively progressive institution in the international arena because it had previously found a connection between a state's individual environmental actions and human rights.<sup>84</sup> Another recognized advantage is the willingness and ability of the Commission to consider ways in which human rights claims were previously handled in international human rights forums.<sup>85</sup>

At the time of this writing, the case is still pending. The decision by the IACHR regarding this petition will offer insight into the future viability of this system of climate change litigation, particularly against the United States.<sup>86</sup> Although initially rejected, the IACHR later reconsidered its decision and held hearings on March 1, 2007, to determine whether climate change was itself a human rights violation.<sup>87</sup> Although the IACHR hearings will largely be limited to the publication of its findings, it is the first such hearing held in an international forum and may, at the very least, move climate change (as a human right) towards an international consensus.

The limitations of submitting a petition with the IACHR are inherent in the preceding paragraphs; namely, the organization's lack of authority to mandate state emission cuts or order compensation for human rights violations. Furthermore, the system requires a complete exhaustion of domestic legal remedies before consideration of a petition,<sup>88</sup> and although United States climate change policy is far from progressive, American courts are historically a viable vehicle for change. It is also worth restating that the IACHR is limited to American states. Thus, as China's emissions continue to rise at an unprecedented rate, this system is not available to file claims against that state. Ultimately, these limitations may not prove to be impossible barriers to issuance of a recom-

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82. WATT-CLOUTIER, *supra* note 28.

83. *Id.* at 5.

84. Koivurova, *supra* note 65, at 287 (citing IACHR decisions implicating this connection).

85. *Id.* (citing cases in which the IACHR looked to other regimes to further human rights doctrine).

86. Koivurova provides a detailed account of the foundations for violations of human rights alleged by the Inuit in this petition, along with the potential consequences stemming from the IACHR decision. See Koivurova, *supra* note 65, at 293-95.

87. See, e.g., Jonathan Spicer, *Hearing to Probe Climate Change and Inuit Rights*, REUTERS, Feb. 21, 2007, <http://www.reuters.com/article/scienceNews/idUSN204267120070221>.

88. IACHR, *supra* note 78, art. 28.

mendation, particularly with this systems progressive reputation. However, the impacts are limited due to a lack of enforcement mechanisms for an actual finding and an award of liability.

*E. United Nations Convention on the Law of the Sea & the U.N. Fish Stocks Agreement*

There exists a mounting body of academic literature on the viability of the United Nations Convention on the Law of the Sea (LOS Convention)<sup>89</sup> and the U.N. Fish Stocks Agreement (UNFSA),<sup>90</sup> as dispute resolution mechanisms and a means to liability. The viability of these agreements rests on the impacts previously described (sea level rise, warming water temperatures, and changes in ocean pH)<sup>91</sup> because the LOS Convention addresses the rights and duties of states in protection of the marine environment.

It has been argued that Article 194(2) of the LOS Convention implicitly limits a state's right to emit GHGs in that it requires states "to ensure that activities under their jurisdiction and control are so conducted as to not cause damage by pollution to other States and their environment . . ." <sup>92</sup> This article continues by stating these requirements must "deal with all sources of pollution [to] the marine environment" and explicitly covers "the release of toxic, harmful or noxious substances, especially those which are persistent, from land-based sources, from or through the atmosphere or by dumping."<sup>93</sup>

Another portion of the LOS Convention frequently cited when discussing potential liability is Article 235.<sup>94</sup> This article outlines state responsibility, triggered when States fail to meet LOS Convention-required environmental duties. "States are responsible for

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89. United Nations Convention on the Law of the Sea, Dec. 10, 1982, 1833 U.N.T.S. 243 [hereinafter LOS Convention].

90. Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, Aug. 4, 1995, 2167 U.N.T.S. 3 [hereinafter UNFSA].

91. See generally William C. G. Burns, *Potential Causes of Action for Climate Change Damages in International Fora: The Law of the Sea Convention*, 2 INT'L J. SUSTAINABLE DEV'L L. & POL'Y 27 (2006), available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=930438](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=930438) (considering potential climate change impacts in the world's oceans that may give rise to LOS Convention actions).

92. LOS Convention, *supra* note 89, art. 194(2).

93. *Id.* art. 194(3).

94. *Id.*; see also Burns, *supra* note 91, at 46 (arguing that "[a]rticle 235 may impose a more stringent standard of care, mandating that States are responsible for fulfilling international obligations that contribute to the protection and preservation of the marine environment.").

the fulfillment of their international obligations concerning the protection and preservation of the marine environment. They shall be liable in accordance with international law.”<sup>95</sup> Also, importantly, the Convention defines “pollution of the marine environment” expansively;

‘pollution of the marine environment’ means the introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities.<sup>96</sup>

Thus, one could connect GHG emissions, (scientifically linked to rising sea levels, increased water temperatures, and changes in pH due to increased carbon dioxide levels in the water), to widespread oceanic impairments. The Convention provides four options for settling disputes over its provisions: (1) the International Tribunal for Law of the Sea (ITLOS); (2) the ICJ; (3) an arbitral tribunal; or (4) a special arbitral tribunal.<sup>97</sup> States may choose their forum, but in instances where no choice is made or parties differ on forum selection, the only option available is binding arbitration.<sup>98</sup>

An immediate limitation of the LOS Convention is the United States’ failure to ratify it, and thus, a suit could, arguably, not be brought under the Convention.<sup>99</sup> However, the United States is arguably already bound by the environmental provisions, as many aspects of the LOS Convention are codifications of customary international law.<sup>100</sup> In fact, some U.S. federal courts have held that the LOS Convention is customary international law, due to its

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95. LOS Convention, *supra* note 89, art. 235.

96. *Id.* art. 1(4).

97. *Id.* art. 287(1).

98. *Id.* art. 287(5).

99. United Nations, Chronological Lists of Ratification of, Accessions and Successions to the Convention and the Related Agreements at 16 March 2009, [http://www.un.org/Depts/los/reference\\_files/chronological\\_lists\\_of\\_ratifications.htm](http://www.un.org/Depts/los/reference_files/chronological_lists_of_ratifications.htm) (last visited Apr. 8, 2008).

100. *See, e.g.*, Strauss, *supra* note 40, at 10188 (arguing LOS Convention environmental provisions are likely customary international law and thus may bind the United States, despite its lack of signatory status). The Strauss article also supports the contention that provisions in the LOS Convention are binding on the U.S. by referencing the 1983 Presidential Proclamation by then President Reagan which espoused to follow most of the LOS Convention as customary international law, except in the area of seabed mining. *Id.*

nearly universal ratification.<sup>101</sup> Thus, although some of the means for mandatory arbitration may not be viable against the United States per se, they may be utilized against any of the other 155 members. Furthermore, it is theoretically possible for a party to use the LOS Convention in a suit before the ICJ, against the United States.<sup>102</sup> As previously mentioned, however, the United States withdrew compulsory jurisdiction under the ICJ and unless the new administration adopts major changes in policy towards climate change and international law in general, it is highly unlikely the U.S. will voluntarily submit.<sup>103</sup>

Another limitation of using the LOS Convention to file suit is the difficulty in showing causation. In this context, the defendant/state would likely argue a number of intervening and/or alternative causes, making the causal connection between one state's emissions and the impacts on the marine environment tenuous at best.<sup>104</sup> Furthermore, in defining the standard of care by which parties to the LOS Convention are to conform their behavior,<sup>105</sup> the most likely international climate change obligation is either Kyoto, to which major emitters have no binding obligations, or the UNFCCC, which is largely inspirational and non-binding in nature.<sup>106</sup>

The UNFSA presents an additional avenue for finding liability.<sup>107</sup> As is the case with the LOS Convention, this agreement contains a binding dispute resolution procedure,<sup>108</sup> but unlike the LOS Convention, the United States largely follows it.<sup>109</sup> Arguing for climate change liability under this agreement is somewhat of a stretch, as it does not make an explicit reference to pollution or emissions. However, one plausible argument is that the commercial fisheries' sectors are adversely impacted by climate change and these impacts fall upon many of the fish stocks directly regulated under the UNFSA.<sup>110</sup> William Burns' timely article, *Potential*

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101. *Sarei v. Rio Tinto PLC*, 221 F. Supp. 2d 1116 (C.D. Cal. 2002).

102. *See, e.g.*, Burns, *supra* note 91, at 45; *see also* ICJ Statute, *supra* note 69, art. 36 (as previously mentioned, jurisdiction can be obtained under the ICJ by treaties and conventions provided for under the UN Charter).

103. Burns, *supra* note 91, at 45 n.106 (describing a "likely" U.S. reaction to such an action submitted to the ICJ).

104. *See id.* at 49-50 (citing terrestrial runoff, disease, predators and pollution as other possible contributors to those harms a plaintiff may allege were caused by climate change).

105. LOS Convention, *supra* note 89, art. 212 (requiring parties to take into account "internationally agreed rules, standards, and recommended practice and procedures" in establishing measures to prevent and reduce pollution).

106. *See* discussion *supra* Part III.B. (concerning UNFCCC and Kyoto).

107. UNFSA, *supra* note 90.

108. *Id.* art. 30.

109. Strauss, *supra* note 40, at 10,188.

110. *See* William C.G. Burns, *Potential Causes of Action for Climate Change Impacts*

*Causes of Action for Climate Change Impacts Under the United Nations Fish Stocks Agreement*, outlines an outstanding basis for adequate harms on which to base a climate change claim,<sup>111</sup> and discusses ways in which the agreement explicitly and implicitly contains sufficient environmentally protective provisions to demonstrate a breach of the agreement.<sup>112</sup>

Overall, there are two significant and unique advantages to using the UNFSA, assuming causation between the impacts on fisheries and climate change emissions. First, the United States is actually a party to the UNFSA, a rarity in the environmental context. Second, the UNFSA contains binding dispute resolution, which is another exceptional rarity in the field of international environmental law and one that does not go unnoticed. On the other hand, there are significant hurdles that are not necessarily unique to UNFSA. As is normally the case with liability claims in this area, finding proof of general and specific causation is difficult, particularly due to evidence of intervening causes. Additionally, one might wonder about the timeliness of UNFSA panels in deciding such a contentious issue as climate change, particularly when the intent of the convention was the harvesting of straddling fish stock, and when the legitimacy of the institution, especially in international circles, is highly dependent upon members submitting to jurisdiction and recognizing their party status.

#### *F. Domestic Law: United States Federal and State Courts*

Given the United States' generally plaintiff-friendly tort system, and the fact that the U.S. is a leader in GHG emissions and number of high-emitting industries, an article on potential liability for climate change would be remiss for failing to discuss the pros and cons of filing suit in a U.S. court. This article addresses two options, which are in no way exhaustive of potential domestic remedies: nationals filing in federal court using common law nuisance claims and aliens filing suit under the Alien Tort Statute.

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*Under the United Nations Fish Stocks Agreement*, 7 SUSTAINABLE DEV. L. & POL'Y 34, 34-37 (2007) (outlining the potential impacts of climate change on species of fish, especially impacts on highly migratory and straddling stocks, as well as providing information relating to UNFSA and potential actions for climate change damages there under); *see generally* S.M. GARCIA ET AL., WORLD REVIEW OF HIGHLY MIGRATORY SPECIES AND STRADDLING STOCKS: FAO FISHERIES TECHNICAL PAPER NO. 337 (D. Spencer et al. eds., 1994), available at <http://www.fao.org/docrep/003/T3740E/T3740E00.htm> (providing "information on the fisheries and state of stocks of a number of highly migratory species and straddling stocks.").

111. Burns, *supra* note 110, at 35-37.

112. *Id.*; *see also* UNFSA, *supra* note 90, arts. 5, 6.

Additionally, the typical issues of standing, political question doctrine, and causation will briefly be discussed.

### 1. Issues of Standing

U.S. Courts have begun to acknowledge their potential role in the pressing climate change issue. In a landmark decision, the U.S. Supreme Court recently held that climate change science is sufficiently direct and tangible to form a basis for standing,<sup>113</sup> proving the impetuous for overcoming one gigantic hurdle. To gain standing in a U.S. federal court, a well-known three-part test for standing must be met. The plaintiff must show that (1) he suffered an injury in fact that is concrete and actual or imminent rather than hypothetical; (2) the injury is fairly traceable to the challenged action of the defendant; and (3) the injury alleged is capable of redressability by the judiciary.<sup>114</sup> The Supreme Court reiterated previous holdings by stating that, “standing is not to be denied simply because many people suffer the same injury,” to hold otherwise “would mean that the most injurious and widespread Government actions could be questioned by nobody.”<sup>115</sup> Although not directly related to actual liability, obtaining standing is an important first step to that end. With this recent decision the burden has eased, especially for the right plaintiffs, who allege more particularized harm than in the recent case of *Northwestern Environmental Defense Center v. Owens Corning Corp.*<sup>116</sup>

### 2. Causation and Apportionment of Liability

To be sure, all climate change opinions will discuss the adequacy of climate science for judicial review, but recent cases, including the previously discussed case of *Massachusetts v. EPA*, tend to con-

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113. *Mass. v. Env'tl. Prot. Agency*, 549 U.S. 497, 525-26 (2007).

114. *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560-61 (1992).

115. *Mass. v. Env'tl. Prot. Agency*, 549 U.S. at n.24.

116. *Nw. Env'tl. Def. Ctr. v. Owens Corning Corp.*, 434 F. Supp. 2d 957 (D.Or. 2006) (holding environmental organization had standing to challenge issuance of permit application which would have allowed significant releases of GHGs); *see also* *Friends of Earth, Inc. v. Watson*, 2005 WL 2035596 (N.D. Cal.) (affirming standing of environmental organization to bring claim, requesting governmental agency to include in their environmental assessments the subject of climate change). *But see* *Korsinsky v. Env'tl. Prot. Agency*, 2005 WL 2414744 (S.D.N.Y.) (rejecting standing of individual suing in tort for climate change). For a scholarly discussion of standing, see Bradford C. Mank, *Standing and Global Warming: Is Injury to All Injury to None?*, 35 ENV'T'L L. 1 (2005) (arguing some climate change plaintiffs with concrete injuries likely have standing to sue); David R. Hodas, *Standing and Climate Change: Can Anyone Complain About the Weather*, 15 J. LAND USE & ENV'T'L L. 451 (1999).

firm the scientific consensus regarding climate change.<sup>117</sup> Accordingly, with the right plaintiff and defendant, it is likely that courts will be more reluctant to dismiss cases on standing grounds related to causation alone.

Winning the issue of causation on the merits, however, has and will be far more challenging for climate change victims. Naming the right defendant is a significant ingredient in the recipe for successful litigation. The theory of liability should be such that a large number of defendants, who are all significant GHG contributors, can be brought in and found jointly and severally liable, as it seems nearly impossible to hold any single emitter alone liable. For example, a liability compensation scheme similar to that in *Sindell v. Abbott Laboratories*<sup>118</sup> may be ideal in the realm of climate change. *Sindell* was a products liability action against the drug manufacturers of DES, a drug that was administered during the plaintiff's pregnancy. Although DES was routinely administered at the time, it was later discovered to cause a rare form of cancer in some of the women whose mothers took the drug. After discovering she had cancer, the plaintiff sued eleven of the more than two hundred drug manufacturers of DES.<sup>119</sup> Despite the plaintiff's inability to identify the manufacturer of her mother's drug, the court still found the plaintiff successfully stated a cause of action against the drug manufacturers because they all used an identical formula.<sup>120</sup> Much of the courts holding seemed to rest on a broad policy statement, which noted that the manufacturers were "better able to bear the cost of the injury resulting from the manufacture of a defective product."<sup>121</sup> Importantly, the court apportioned liability, a then novel idea which has since been followed by a number of courts, making each defendant liable for their corresponding market share of DES.<sup>122</sup>

Comparable to the drug case above, it is nearly impossible to link any one particular GHG emitter to an individual injury. GHGs have been emitted in significant amounts since the industrial revolution, and their buildup is cumulative.<sup>123</sup> However, like

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117. *Mass. v. Env'tl. Prot. Agency*, 549 U.S. at 521-27.

118. *Sindell v. Abbot Laboratories*, 607 P.2d 924 (Cal. 1980).

119. *Id.* at 925-26.

120. *Id.* at 928-32.

121. *Id.* at 936.

122. *Id.* at 936-37; *see also* Grossman, *supra* note 24, at 39-51 (discussing the possibility of a products liability claim for climate change).

123. As previously mentioned, attributing specific climate change harms is difficult because, among other reasons, it is the accumulation of GHGs in the atmosphere from the past, compounded by today's and future emissions, that has resulted in harms and will continue to plague the Earth. However, there are historical reports, for example the one conducted by World Research Institute (WRI) on emissions by country from 1900-1990 (and

the manufacturers of DES, who used identical formulas, any carbon dioxide emission is similar in nature, particularly within the electricity generation industry. By narrowing the defendants to a particular industry, like electricity generation, one could argue the processes for fuel combustion are vastly similar in makeup and apportionment, and thus form an equitable way of apportioning the harms associated with climate change. Additionally, like the manufacturers of DES, the energy companies are better able to bear the cost of the injury resulting from continued emissions.<sup>124</sup>

### 3. Nuisance Law

The focus of this section is the federal common law of nuisance.<sup>125</sup> Before discussing the specifics of bringing this kind of action in a U.S. court, the underlying goals of tort law are worth mentioning. Many scholars argue that the disproportionate effects of climate change are such that a claim sounding in tort is more than appropriate. Several reasons for this are offered. First, although causation is a hurdle in any climate change suit, one of the primary reasons for the tort system is to compensate for damages to individuals and property caused by human activity, thereby decreasing the costs of accidents.<sup>126</sup> Other readily apparent connections between tort law and climate change include the disproportionate effects of climate change harms on localized victims, particularly, the disparity between rich and poor nations/individuals, the availability of allocation of costs across multiple U.S. companies and industry sectors, and the idea of attributing costs to the

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significant tracking post-1990). Europe is said to have contributed 28%, the U.S. 30%, Japan 4% and the former Soviet Union 14%, while Africa is responsible only for 3% and South and Central America combined for 4% during this early time period. WRI, Contributions to Global Warming: Historic Carbon Dioxide Emissions from Fossil Fuel Combustion, 1900-1999, <http://earthtrends.wri.org/text/climate-atmosphere/map-488.html> (last visited Mar. 23, 2008). Accordingly, there may be a creative way to average emissions over the last one hundred years to apportion damages, while giving more weight to those emissions taking place post-1990, with the mainstreaming of climate change dialogue and with it, responsibility to act.

124. *Sindell v. Abbot Laboratories*, 607 P.2d 924, 936 (Cal. 1980).

125. Although some argue that a claim for climate change could also sound in negligence, it seems an unlikely proposition given that the requirements of negligence include a duty owed to the victim and reasonableness of care, both of which are likely tough hurdles for plaintiffs to overcome. *But see* David Hunter & James Salzman, *Climate Change Litigation and the Duty of Care*, 155 U. PA. L. REV. 1741 (2007) (arguing that negligence cause of actions will gain acceptance and viability with the passage of time and with increased exposure).

126. *See generally* RICHARD A. POSNER, *ECONOMIC ANALYSIS OF LAW* §§ 6.1-6.17 (4th ed. 1992); Eduardo M. Penalver, *Acts of God or Toxic Torts? Applying Tort Principles to the Problem of Climate Change*, 38 NAT. RESOURCES J. 563, 569-79 (1998); Grossman, *supra* note 24, at 3-5.

party who can best bear the burden of the injury.<sup>127</sup> For example, when you pit the oil, gas, or electricity generation industries against the Inuit, who may be the first American environmental refugees of climate change, the industries are plainly more adept and financially capable of internalizing the costs of climate change damage when compared to a small native Alaskan fishing village. Similarly, when considering which cost allocation scheme best decreases climate change “accident” costs, the analysis seems compelling for an action in tort. The reason is that making already poor victims bear those burdens would only ensure a higher frequency and level of “accidents” in the future.<sup>128</sup> Given the lack of incentives for emission reductions currently at play in the United States, evidence of these accident costs abound in data concerning increasing levels of emissions each year. This is particularly true for the “vulnerable defendant” industries previously discussed.

With regards to the public nuisance doctrine in particular, the Restatement (Second) of Torts §821B defines public nuisance as “an unreasonable interference with a right common to the general public.” Factors taken into consideration in determining whether the conduct in question is a violation of a public right include the effects on the public health, safety, peace, convenience or comfort.<sup>129</sup> Another factor is whether the conduct is “of a continuing nature or has produced a permanent or long-lasting effect,” and whether the potential defendant “knows or has reason to know” of its effect on the “right[s] common to the general public.”<sup>130</sup>

Accordingly, the first step in a public nuisance suit is proving that the rights alleged are common to the general public. In the context of climate change, one could imagine the scope of the infringements on public rights. For example, when beaches and other public lands are lost to erosion or rising sea levels and when the infrastructures of entire villages are destroyed due to melting sea ice and coastal erosion, these effects have historically been sufficient to show interference with public rights.<sup>131</sup>

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127. See, e.g., Grossman, *supra* note 24; POSNER, *supra* note 126; Penalver, *supra* note 126.

128. See Grossman, *supra* note 24, at 4-5 (discussing three principal obstacles inherent in climate change victims’ effective organization to force industry changes in reduction of GHGs).

129. RESTATEMENT (SECOND) OF TORTS § 821(B) (1977).

130. *Id.*

131. NAT’L ASSESSMENT SYNTHESIS TEAM, CLIMATE CHANGE IMPACTS ON THE UNITED STATES: THE POTENTIAL CONSEQUENCES OF CLIMATE VARIABILITY AND CHANGE (2000). See generally, IPCC, *supra* note 8.

A second element to be proven is that the interference is unreasonable and the factors previously mentioned are considered. Thus, for a climate change suit, plaintiffs need to demonstrate that the emissions caused by the named defendants are such that they interfere with the public health, safety, peace, convenience, or comfort, and that defendants knew or had reason to know of the effects upon the public right.<sup>132</sup> Given the ever-increasing scientific body of evidence demonstrating the connection between GHG emissions (in particular carbon dioxide) and climate change effects, and new comprehensive tracking mechanisms of GHGs released by industry sectors, satisfying this element seems increasingly realistic. For example, in the cases of the Alaskan Inuit and the island inhabitants of Tuvalu, both of whom are on the brink of losing their infrastructure, property, and culture, the defendants' conduct could be shown to significantly interfere with their safety, peace, and comfort. Further, evidence has long shown that by emitting carbon dioxide into the atmosphere, climate change effects take place. As in any case, particularized findings of harm must still be alleged, but it certainly seems the propensity is there for demonstrating these elements.

The comments in the Restatement dictate that simply staying within the bounds of statutory law is not necessarily sufficient to meet the reasonableness standard and avoid liability.<sup>133</sup> Courts consider all attendant circumstances.<sup>134</sup> Thus, simply because the U.S. government has not enacted new guidelines or regulations mandating particular reductions in carbon emissions, the attendant circumstances would be considered in a case of public nuisance. The fact that many U.S. states and most of the developed countries of the world have had emission reduction policies in place for years may add additional fuel to the proverbial fire. Additionally, the disproportionate impact of climate change-related injuries felt by specific groups of victims has been apparent for some time, and the ability to mitigate those damages has also been readily available. This evidence is useful to support a claim in nuisance.

Finally, at least two of the petitions recently filed against U.S. electricity generators have alleged a fraudulent misinformation campaign to keep the country misinformed, or at the least, create doubts about climate change.<sup>135</sup> If such a campaign is proven to

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132. RESTATEMENT (SECOND) OF TORTS *supra* note 129, § 821

133. *Id.* § 821 cmt. f.

134. *Id.*

135. See, e.g., *Comer v. Murphy Oil Co.*, No. 05-CV-436LG (S.D. Miss. Aug. 30, 2007); *Complaint for Damages & Demand for Jury Trial, Native Village of Kivalina v. ExxonMobil*

exist, these tactics would readily support the unreasonableness of industry inaction and failure to mitigate.

One immediate advantage to these kinds of suits is the existence of a fairly long and well-developed body of law specific to the federal court's use of public nuisance, particularly in pollution related suits.<sup>136</sup> Thus, courts would not have to stretch too far to say air pollution and carbon dioxide emissions should entail similar legal analysis. Furthermore, scholars argue many of the difficulties associated with causation are more readily overcome due to the nature of public nuisance suits.<sup>137</sup>

In order to obtain a damage award under the common law of public nuisance, plaintiffs must show they "suffered harm of a kind different from that suffered by other members of the public exercising the right common to the general public that was the subject of interference."<sup>138</sup> Thus, to obtain an award of damages rather than injunctive relief, one must allege particularized findings of harm distinct from that of the general public. For example, people residing in northern Alaska, within fifty miles of the Kivalina coast, may visit Kivalina to enjoy the beaches, fish, or to use the roadways in and out of the area. They may claim this use is a public right and that this right is unreasonably interfered with due to impacts of climate change from GHG emissions, citing that the beaches are eroding, the roads are falling into the water, etc. However, this is not necessarily a different harm from any other member of the general public. Should you or I take a trip to northern Alaska, we could allege the same harm. Instead, it is the native population of the area, who depend on the land, the roads, and the sea ice for survival, and therefore may claim harm different in kind. For these individuals, there is specialized harm. Overall, a suit in public nuisance appears most desirable for the population that is suffering the greatest amount of identifiable, specialized harms, specific to their way of life.

There are a number of obstacles to a successful nuisance suit, aside from the damage limitations just mentioned. At the outset, issues of standing and the political question doctrine must be con-

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Corp. (N.D. Cal. Feb. 26, 2008), available at <http://www.turtletalk.files.wordpress.com/2008/02/kivalina-complaint.pdf> [hereinafter Kivalina Complaint].

136. See Benjamin P. Harper, *Climate Change Litigation: The Federal Common Law of Interstate Nuisance and Federalism Concerns*, 40 GA. L. REV. 661, 674-79 (2006) (discussing the development of the federal common law of public nuisance, as well as a number of the key cases); see also Robert V. Percival, "Greening" the Constitution – Harmonizing Environmental and Constitutional Values, 32 ENVTL. L. 809 (2002).

137. See Harper, *supra* note 136, at 685-88 (giving an overview of the ways in which this is true, including various approaches to causation).

138. RESTATEMENT (SECOND) OF TORTS, *supra* note 129, § 821(C).

sidered. Although some have seen the U.S. Supreme Court's holding in *Massachusetts v. EPA*<sup>139</sup> as indicative of an "ease" in the standing burden for climate change litigants, the holding in that case would differ, given the nature of the plaintiffs, had the plaintiffs been individuals rather than states.<sup>140</sup> Even assuming the standing requirement is satisfied, there still remains a significant question; can a climate change suit, in any context, survive the political question doctrine?

The obstacle here is whether federal courts view themselves as sufficiently equipped to deal with such a large, controversial, and scientifically complex policy issue as climate change. In nuisance, there are two parts to this question. First, is this an issue capable of judicial determination, and second, if it is, is application of federal common law appropriate in these circumstances?

Satisfying the political question doctrine has, and will likely continue to be, the most formidable hurdle. For example, in *Connecticut v. American Electric Power Co.*,<sup>141</sup> Connecticut, seven other states, the City of New York, and several environmental groups sued a group of electric utilities under federal public nuisance common law, asking them to abate the global warming nuisance.<sup>142</sup> The complaint alleged that the defendants were the five largest emitters of carbon dioxide in the United States, constituting approximately one fourth of the electricity generation sector's carbon dioxide emissions, and that U.S. electric power plants are responsible for ten percent of worldwide carbon dioxide emissions from human activities.<sup>143</sup> The court held that nuisance claims aimed at the utilities' abatement of emissions, alleging their contribution to climate change, raised non-justiceable political questions beyond the court's jurisdiction.<sup>144</sup> The court stated that "[t]he scope and magnitude of the relief Plaintiffs seek reveals the transcendently legislative nature of this litigation. Plaintiff asks this

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139. See generally *Mass. v. Env'tl. Prot. Agency*, 549 U.S. 497, 520-26 (2007).

140. See, e.g., *Comer v. Murphy Oil Co.*, No. 05-CV-436LG (S.D. Miss. Aug. 30, 2007) (dismissing, on grounds of standing and political question doctrine, individual plaintiff's public nuisance suit against a variety of coal, oil and energy companies and distinguishing *Mass. v. EPA* because of the nature of the private versus public plaintiffs); Lisa Heinzerling, *Mass. v. EPA*, 22 J. ENV'TL L. & LITIGATION 301, 311 (2007) (arguing that it is unlikely a state will now be denied standing to bring a climate change suit but that it will be a much closer call when it comes to private litigants, as the Court's indication of the special status afforded state claims may have been indicative of limitations of the holding); Thomas Merrill, *Global Warming as a Public Nuisance*, 30 COLUM. J. ENV'TL L. 293, 294-305 (providing a detailed analysis of standing hurdles for private individual claims and claims brought as *parens patriae*). But see Grossman, *supra* note 24, at 55 (arguing particularly vulnerable plaintiffs, such as those on the coast, are "among the paradigmatic public nuisance plaintiffs" and thus should be able to meet usual standing requirements).

141. *Conn. v. Am. Elec. Power Co.*, 406 F. Supp. 2d 265 (S.D.N.Y. 2005).

142. *Id.* at 267-68.

143. *Id.* at 268.

144. *Id.* at 273-74.

court to cap carbon dioxide emissions and mandate annual reductions of an as-yet-unspecified percentage.”<sup>145</sup> The standard offered was that the court could only decide a case that is “justiceable in light of the separation of powers ordained by the Constitution,” and only if “the duty asserted can be judicially identified and its breach judicially determined, and protection for the right molded.”<sup>146</sup> The decision was appealed and no ruling has been issued. Thus, the uncertainty over whether this issue may prove to be a barrier is still unsettled.<sup>147</sup>

#### 4. Alien Tort Statute

Potential litigants could also pursue climate change liability in the United States by arguing that the emission of GHGs is a human rights violation. There is a substantial body of scholarly work on the potential for U.S. domestic litigation centering on human rights and brought under the Alien Tort Statute (ATS).<sup>148</sup> This statute allows non-citizens to bring claims in U.S. courts based on torts violating treaties and customary international human rights laws.<sup>149</sup> The ATS states that “district courts shall have original jurisdiction of any civil action by an alien for a tort only, committed in violation of the law of nations or a treaty of the United

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145. *Id.* at 272.

146. *Id.* at 271 (citing *Baker v. Carr*, 369 U.S. 186 (1962)).

147. At least three cases have held that climate change issues presented non-justiciable political questions. See *Conn. v. Am. Elec. Power Co.*, 406 F. Supp. 2d 265 (S.D.N.Y. 2005); *Cal. v. Gen. Motors Co.*, C06-05755 MJJ, 2007 U.S. Dist. LEXIS 68547 (N.D. Cal. Sept. 17, 2007); *Comer v. Murphy Oil Co.*, No. 05-CV-436LG (S.D. Miss. Aug. 30, 2007).

148. See, e.g., Eric A. Posner, *Climate Change and International Human Rights Litigation: A Critical Appraisal* (Univ. of Chicago Law Sch, Working Paper No. 329, Jan. 26, 2007), available at <http://ssrn.com/abstract=959748> (arguing that although American courts might be open to suits for global warming under Alien Tort Statute, it would be a mistake to utilize such measures because American courts cannot provide sound, acceptable policy for climate change the world over); Bradford C. Mank, *Can Plaintiffs Use Multinational Environmental Treaties as Customary International Law to Sue Under the Alien Tort Statute?*, 2007 UTAH L. REV. 1085-1170, available at <http://ssrn.com/abstract=1010205> (arguing that in light of the U.S. Supreme Court decision in *Sosa*, most international legal principles are too vague to rest environmental claims on, under the ATS); Natalie L. Brideman, *Human Rights Litigation Under the ATCA as a Proxy For Environmental Claims*, 6 YALE HUM. RTS. & DEV. L.J. 1 (2003); DINAH SHELTON, *The Environmental Jurisprudence of International Human Rights Tribunals*, in LINKING HUMAN RIGHTS AND THE ENVIRONMENT 8-19 (Romina Picolotti & Jorge Daniel Taillant, eds. 2003); Rosemary Reed, *Rising Seas and Disappearing Islands: Can Island Inhabitants Seek Redress Under the Alien Tort Claims Act?*, 11 PAC. RIM L. & POL'Y J. 399 (2002); James Boevig, *Half Full . . . or Completely Empty?: Environmental Alien Tort Claims Post Sosa v. Alvarez-Machain*, 18 GEO. INT'L ENVTL. L. REV. 109 (2005) (arguing that the *Sosa* decision failed to clarify the ATS scope but did seem to leave the door open for foreign plaintiffs to make environmental claims based on human rights as a proxy for environmental harm, solidifying the role of legal scholars to continue to impact the definition of customary international law).

149. Alien's Action for Tort, 28 U.S.C. § 1350 (2003).

States.”<sup>150</sup> The test for determining the “law of the nations,” mentioned above, was laid out in *Sarei v. Rio Tinto*, which asks “(1) whether [plaintiffs] identify a specific, universal, and obligatory norm of international law; (2) whether that norm is recognized by the United States; and (3) whether they adequately allege its violation.”<sup>151</sup> The ATS is distinctive from many other legal avenues in that it awards damages, making it arguably “the most prominent and effective means for litigating international human rights.”<sup>152</sup> However, that does not necessarily mean it is the best avenue for litigating climate change liability.

Most of the limitations inherent in this type of suit are the same mentioned in the general international arena; namely, that a right to a healthy environment is not yet fully recognized in customary international human rights law.<sup>153</sup> Thus far, U.S. Courts have rejected such a basis for liability under the ATS.<sup>154</sup> One of significant obstacles noted by scholars in this arena is the notion that by awarding damages for climate change injury, U.S. federal courts would essentially be acting as a climate change policymaker for the world.<sup>155</sup> This would be a generally undesirable policy, and courts are incredibly resistant to filling the aforementioned void, particularly in an area as contentious as global warming. Potential litigants will want to keep a close eye on developments regarding environmental claims in this area, as the next few years may largely determine the viability of this statute. These cases may also yield insight into federal courts’ views on the use of the LOS Convention as a proxy to climate change liability. Either way, as

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150. *Id.*

151. *Sarei v. Rio Tinto PLC*, 221 F. Supp. 2d 1116, 1132 (C.D. Cal. 2002).

152. Posner, *supra* note 148, at 5.

153. *But see id.* at n.14 (listing a vast array of international documents codifying a right to a healthy environment).

154. *See, e.g., Sarei v. Rio Tinto PLC*, 456 F.3d 1069 (9th Cir. 2006), *withdrawn and superseded in part on rehearing by Sarei v. Rio Tinto PLC*, 487 F.3d 1193 (9th Cir. 2007). The court held that plaintiffs presented a cognizable ATS claim under the LOS Convention, reasoning that the LOS Convention was declaratory of customary international law, and paving the way for potential plaintiffs’ suits based on treaty provisions that are arguably customary international law due to widespread ratification (*i.e.*, Kyoto). However, in August of 2007, the court withdrew its decision and ordered a rehearing. *Sarei v. Rio Tinto PLC*, 499 F.3d 923 (9th Cir. 2007). Further, the court stated the decision shall not be cited as precedent, leaving many wondering if the court will withdraw the dicta stating that the LOS Convention should be viewed as customary international law.

155. For a discussion on these effects, see Posner, *supra* note 148, at 13-17 (arguing that foreign corporations who want or need access to American markets would have to comply with American law and if they fail to do so, they could have assets seized by, in this case, climate change plaintiffs; thus, in the context of climate change, should the courts order a reduction in GHG emissions, the foreign corporations would have to choose between abandoning the U.S. market, shutting down some of their factories, or adopting significant measures in mitigating emissions).

the corpus of international environmental law grows, these suits may prove increasingly promising.

IV. A CASE STUDY: NATIVE VILLAGE OF KIVALINA V.  
EXXONMOBIL CORP<sup>156</sup>

On February 26, 2008, the Inupiat Eskimo Village of Kivalina, Alaska filed suit against twenty-four of the world's largest oil and energy companies,<sup>157</sup> alleging that they caused the global warming responsible for significant harms to Kivalina.<sup>158</sup> The claims are being brought by the Native Village and City of Kivalina, acting on its own behalf and as *parens patriae* on behalf of the citizens and residents of Kivalina.<sup>159</sup> The lawsuit was filed in the U.S. District Court for the Northern District of California.

The complaint utilizes federal common law public nuisance claims. It specifically alleges that global warming is destroying Kivalina through the melting of arctic sea ice that had, for thousands of years, protected the village from winter storms.<sup>160</sup> Further, it states that each of the defendants knew or should have known of the impacts of their emissions on global warming, and on particularly vulnerable communities such as coastal Alaskan villages, but continued their substantial contributions despite this information.<sup>161</sup> Additionally, (and it is this which sets this lawsuit apart) the complaint contends the defendants conspired to create a false scientific debate about global warming in order to deceive the public.<sup>162</sup> Finally, Kivalina is asking for monetary damages, including the cost of moving the village due to the land being uninhabitable.<sup>163</sup>

At the very least, it seems this lawsuit will bring to light the names and faces of climate change victims, which could have a big role in personalizing climate change, moving the general public, and impacting policy.<sup>164</sup> At the most, it could provide meaningful relief to some of the most immediately and gravely impacted vic-

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156. Kivalina Complaint, *supra* note 135.

157. *Id.* ¶¶ 18-122.

158. *Id.* ¶¶ 163-88.

159. *Id.* ¶ 13.

160. *Id.* ¶¶ 185-88.

161. *Id.* ¶¶ 18-180.

162. *Id.* ¶¶ 189-248.

163. *Id.* ¶¶ 260, 266.

164. See David B. Hunter, *The Implications of Climate Change Litigation for International Environmental Law-Making* (Am. Univ. Wash. College of Law Res. Paper 2008-14, July 15, 2007), available at <http://ssrn.com/abstract=1005345> (putting forth idea of using liability as a means to further climate change dialogue and bolster the climate change regime).

tims of climate change and get the ball rolling towards international liability.<sup>165</sup> However, one important consideration, noted at the outset of this discussion, and the reason international liability should perhaps be the preferred method over domestic tort litigation, is that suing only U.S. companies in domestic jurisdictions merely shuffles the source of emissions. As long as the world is dependent upon current energy sources and technology, the industries and/or factories impacted in the U.S. may simply shift operations outside the country, making U.S. corporations less competitive but having little to no effect on GHG emissions. That being said, a finding of liability within U.S. borders could certainly pave the way for limitations on imports from factories or corporations doing business in the United States. An overall analysis of this case follows.

### A. *Strong Plaintiff*

This case involves claims between natives of Alaska and domestic corporations. Thus, some of the typical barriers in a foreign legal system are not present, and chances are, domestic courts look more favorably upon their own victims.<sup>166</sup> The nature of these particular villagers, who are discrete and identifiable, should make the natives of Kivalina good plaintiffs to bring a claim. They are

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165. For example, in what is hailed as the test case for the insurance industry, in July of 2008 Steadfast Insurance Company filed the case of *Steadfast Insurance Co. v. AES Corp.*, No. 2008-858 (Va Cir. filed July 9, 2008), available at <http://www.globalclimatelaw.com/uploads/file/AES%20Complaint.pdf>. This suit arises out of the Kivalina case. Steadfast is the insurer for one of the Kivalina defendants, AES, and seeks a declaratory judgment that it is not obligated to defend or indemnify AES should the court find liability rests therewith. Steadfast's argument derives from policy language that requires covered property damage to occur during the policy period. Because Steadfast issued its policy in 2003, after harms allegedly already occurred, they should not have to provide coverage. AES, meanwhile, contends that Steadfast bases its claim for relief on too broad of a reading of narrow policy exclusions as well as a narrow reading of broad allegations found in the Kivalina complaint. Much of this case will ultimately rest on the application of the policies' pollution exclusion—whether climate change falls under the ambit of “any injury or damage which would not have occurred in whole or in part but for the actual, alleged or threatened discharge, dispersal, seepage, migration, release or escape of pollutants at any time.” Thus, the Kivalina complaint propelled serious dialogue, and likely major change, in the insurance industry.

166. See Andre Nollkaemper, *How Public International (Environmental) Law Can Furnish a Rule of Decision in Civil Litigation*, 12 ENVTL. LIABILITY L. REV. 3 (1998) (arguing that even in claims between private parties international law can play a part in civil litigation), discussed in Faure & Nollkaemper, *supra* note 37, at 138 (stating domestic courts dealing with civil liability have two opportunities to use international law norms in tort cases—one way is to “bypass national law and to provide redress for violations of international law in a tort case on basis of international law” and the second, and more common way, is to “provide redress for violations of international law . . . through the application of domestic law and to give effect to international law in the application of domestic liability law.”).

approximately 400 in number and live on a six-mile long barrier island on the Northwestern Alaskan coast, nearly seventy miles north of the Arctic Circle.<sup>167</sup> The people of Kivalina are Inupiat Eskimo and have lived in this location “since time immemorial.”<sup>168</sup>

Furthermore, because the culture is such that these native villagers do little to add to the climate change problem, the defense of “unclean hands” would likely not be available to the defendants, as may be the case in actions brought by U.S. states.<sup>169</sup> Judging from previous cases in U.S. District Courts, this could prove a big advantage, should the case reach the merits.

Finally, given the nature of these plaintiffs and the specific, identifiable harms alleged in the complaint, causation is less problematic than in many previous cases. This action could be viewed as an incremental step in liability. As previously discussed, the IPCC reports point to the arctic regions as experiencing the most profound and devastating impacts of climate change.<sup>170</sup>

### B. Vulnerable Defendant

This petition lists as defendants twenty-four major energy and electric corporations in the United States.<sup>171</sup> Evidence shows highly concentrated emissions from a few major producers.<sup>172</sup> There is no shortage of data connecting the major companies named in the Kivalina complaint with high levels of carbon dioxide emissions.

Aside from their role as major players in emitting the GHGs that are allegedly causing the climate change effects in Kivalina, these companies are also vulnerable in the sense that mitigation efforts and technological alternatives, available for some time, have rarely been utilized. As the complaint alleges, renewable energy sources, such as wind, solar, geothermal, and biomass, have

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167. Kivalina Complaint, *supra* note 135, ¶ 1.

168. *Id.*

169. Many have cited the equitable defense of “unclean hands” as an obstacle to climate change litigation. This doctrine “closes the door of a court of equity to one tainted with inequitableness or bad faith relative to the matter in which he seeks relief, however improper may have been the behavior of the defendant.” Harper, *supra* note 136, at 685-86 (citing *ABF Freight Sys. Inc. v. N.L.R.B.*, 510 U.S. 317, 330 (1994) (Scalia, J., concurring)). Harper contends that courts hearing cases of public nuisance have always considered the plaintiff’s contributions to the harms alleged. *Id.*

170. See, e.g., IPCC, *supra* note 8, at 6.

171. At the time of this writing, two of those defendants, Mirant and NRG Energy, were dismissed with prejudice by stipulation of the parties. *Native Village of Kivalina v. ExxonMobil Corp.*, 2008 WL 2951517 (N.D. Cal. June 16, 2008); *Native Village of Kivalina v. ExxonMobil Corp.*, 2008 WL 2951523 (C.D. Cal. June 4, 2008).

172. See, e.g., ENERGY INFO. ADMIN., EMISSIONS OF GREENHOUSE GASES REPORT (2008), available at <http://www.eia.doe.gov/oiaf/1605/ggrpt/carbon.html>.

continued developing, even in the face of industry backlash.<sup>173</sup> Yet these defendants have done little in attempting to reduce emissions, despite the number of potentially viable alternatives.<sup>174</sup>

Claims about prospective harms caused by current industry emissions are hard arguments on which to lay a successful claim for liability. However, with the increasing number of technologies and alternatives available to companies to cut the amount of GHGs emitted, this particular set of defendants would seem to have a significantly weaker “best technology available” defense. One could argue that the electricity generation industry purposefully missed numerous opportunities to prevent, or even to reduce, its impact on global climate change. This argument gains further support when reviewing evidence of industry profits made because of the absence of GHG regulation, and profits made well after science and affordable technology were readily available to demonstrate the need for GHG emission reductions. Science supports Kivalina’s assertion that this conduct has, and will, cause long-term harm, especially to these particular plaintiffs. The arguments for liability seem to find their strongest basis when identifying conduct that takes place after the science is readily available and the harms identified, but before full implementation of regulatory mandates.

Another reason these companies appear to be readily vulnerable defendants is that the nature of emissions from the electricity generation industry is quite similar in nature from one facility to another, each creating the same harm in much the same way. Similarly, emissions occur directly from the electricity generation source. In other words, there are no intervening causes, as would be the case with much of the transportation industry (separate companies make the parts put on vehicles, separate companies assemble the vehicles, other companies sell the vehicles, individuals then buy and run the vehicles, which release the carbon emissions). All of these factors make the defendants named in the Kivalina petition particularly vulnerable.

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173. Kivalina Complaint, *supra* note 135, ¶ 174.

174. See MCKINSEY & COMPANY, REDUCING U.S. GREENHOUSE GAS EMISSIONS: HOW MUCH AT WHAT COST?, (2007), available at [http://www.mckinsey.com/client/service/ccsi/pdf/US\\_ghg\\_final\\_report.pdf](http://www.mckinsey.com/client/service/ccsi/pdf/US_ghg_final_report.pdf) (discussing relatively long known potential options for reducing U.S. GHG emissions, focusing on particularly large emitting industries such as electricity generation sector).

*C. Chosen Theory of Liability*

The United States has long been viewed as having a plaintiff-friendly tort system. By shifting the focus of liability from government agencies and states to deep-pocketed private industries, which by their nature, emit large quantities of measurable GHGs, there is potential to skip what is typically a very time-consuming and burdensome legislative and/or executive process.<sup>175</sup> Simple talk of liability started this proactive movement in many corporate communities. One can only imagine the impact of a finding of liability.<sup>176</sup>

Additionally, many argue precedent exists for this type of mass tort litigation, which continues to serve as a governmental gap filler when domestic or foreign executive and legislative branches fail to appropriately act in the minds of the people.<sup>177</sup> Examples include, but are not limited to, tobacco, asbestos, toxic torts and prescription drugs. Furthermore, much of the discussion behind the tobacco litigation cases is similar in nature to climate change proceedings. One website even alleges that the Philip Morris Advancement of Sound Science Coalition obtains funding through ExxonMobil in order to contest climate change science.<sup>178</sup> Another entity, the American Petroleum Institute (API), is recognized as one of the organizational leaders in efforts to cast doubt on climate change science.<sup>179</sup> Most of API's work in this area focused on the "natural causes" of global climate change and greatly criticized the Kyoto Protocol which, according to API's calculations, would force a huge drop in energy use, causing significant economic damage but no change in global temperature.<sup>180</sup> These media campaigns,

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175. For example, even in the case of *Massachusetts v. EPA*, where the plaintiffs won, the timetable on regulation of carbon dioxide emissions will take months, if not years, to begin, as standards and rules must be promulgated by the agency in the typical administrative process.

176. See generally Hsu, *supra* note 29, at 710-18.

177. Hunter, *supra* note 164 (discussing liability as gap filler in both international and domestic law). In addition to the judiciary generally filling the holes of a failing political system, many also argue that domestic, or private law, influences international principles of liability as well (and vice versa). For such a discussion, see also HERSCH LAUTERPACHT, PRIVATE LAW SOURCES AND ANALOGIES OF INTERNATIONAL LAW 38-42 (Archon Books 1970) (stating that much of the international body of law in existence arose from principles of private law and international courts often rely on private law inferences for filling); Faure & Nollkaemper, *supra* note 37, at 126-27.

178. ExxonSecrets.org, The Advancement of Sound Science Coalition, <http://www.exxonsecrets.org/html/orgfactsheet.php>. (last visited Dec. 15, 2009)

179. The American Petroleum Institute, with more than 400 members, lobbies on behalf of oil and gas industry interests. More information is available about this interest group at Am. Petroleum Inst., <http://www.api.org> (last visited Dec. 15, 2009).

180. Am. Petroleum Inst., The Big Picture, What is Global Climate Change?, <http://www.api.org/ehs/climate/science/index.cfm> (last visited Feb. 12, 2008).

and the suppression of key climate change information, are the types the *Kivalina* case, and other academics, are attempting to address.<sup>181</sup>

There are several barriers to this and similar suits, including judicial determinations which must be made before moving to the merits. As previously mentioned, considerations of standing and separation of powers will permeate every climate change suit filed in the United States. On the issue of standing, results are mixed. However, due to the strength of these particular plaintiffs, namely their discrete and specialized harms, standing to sue now seems more readily attainable than in previous cases.<sup>182</sup>

The single largest impediment to this case being successful is the separation of powers issue. Courts are generally hesitant to play policymaker in highly contentious and political areas of law. This is especially true now as a new administration, one friendlier to environmental controls, is in power. I believe the courts, cognizant of the Obama administration's vow to fight climate change, will be especially sensitive to the "wait and see" game, allowing the new executive who, regardless of the recent economic downturn, will push a marked improvement in emission reduction policies over the last administration. Accordingly, courts are likely to defer to the executive and legislative branches, in the hope that the new administration will bring more progressive and proactive U.S. policy, filling in regulatory gaps that currently permeate the American system.

Additionally, climate change is a highly complicated scientific issue that requires technical reports, models, and advanced equations from both sides of the debate. Evaluating this data is a daunting task, even for the U.S. Supreme Court.<sup>183</sup> Many see the most competent policy determinations coming from experts, such as environmental and scientific agencies. Perhaps with the growing mainstream dissemination of climate change science and more

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181. See *Kivalina* Complaint, *supra* note 135, ¶¶ 189-248; see also Farber, *supra* note 14, at 1642 (arguing that the large quantities of misinformation disseminated by industry-sponsored groups, as well as U.S. government efforts to suppress climate change information, may very well lend themselves to negligence and/or the deliberate misrepresentation liability, as was the case in tobacco litigation).

182. See discussion *supra* Part IV.A.; see also Hsu, *supra* note 29, at 736-59 (discussing standing issues for a hypothetical case between the Inuit and major U.S. corporations and stating that the largest advantage of using the Inuit for plaintiff's come in the realm of standing).

183. Justice Scalia, in oral arguments of *Massachusetts v. EPA*, readily noted the complex nature of the science behind climate change, stating this complexity was the reason he did not "want to have to deal with global warming, to tell you the truth." Transcript of Oral Argument at 23, *Mass. v. Env'tl. Prot. Agency*, 549 U.S. 497 (No. 05-1120), available at [http://www.supremecourtus.gov/oral\\_arguments/argument\\_transcripts/05-1120.pdf](http://www.supremecourtus.gov/oral_arguments/argument_transcripts/05-1120.pdf).

user-friendly reports, such as the IPCC, courts can one day become comfortable making common law fault and liability determinations, as they did with the science related to cigarette smoking. However, at this point it seems the political question doctrine is a large pothole in the road to successful litigation.

Specifically regarding the use of public nuisance as a proxy for climate change litigation (assuming that standing and justiciability issues are overcome), the *Kivalina* case entails most of the necessary elements that have proven successful in past public nuisance claims. The plaintiffs are identifiable and discrete. They can allege harms that interfere with rights common to the general public and specialized injuries different from the general public; in particular, the injuries to Kivalina's property interests.<sup>184</sup> These harms are especially heinous in that not only are the rights to use impacted in the short-term, but the entire village must be relocated.<sup>185</sup> Furthermore, the Inupiat contribute little to nothing to the climate change nuisance.

By also presenting specific technical data which tracks industrial GHG emissions, available technologies, international and state-level actions, along with proof pertaining to the misinformation campaign promulgated by many of these companies, the Kivalina plaintiffs should have a good chance of adequately demonstrating that the defendants knew or should have known that their GHG emissions contributed to global warming, causing the specific injuries alleged by the plaintiffs. There is also plenty of evidence to show this is a continuing nuisance. It is not a stretch for a court to hold these companies intentionally or negligently created, contributed to, or maintained the public nuisance, despite viable mitigation alternatives.

In terms of a decision on the merits, it is causation that will play the biggest part in determining a positive outcome for Kivalina. The ultimate question is whether the facts alleged are sufficient to prove that the specific emissions from these companies caused the harms incurred by the natives of Kivalina. Even if a court found that answer to be yes, questions of apportionment and redressability are also issues plaintiffs will face. For example, even if a court were to find these companies 25 percent at fault for harms suffered by Kivalina, is that sufficient to find liability given

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184. Kivalina Complaint, *supra* note 135, ¶¶ 185-88, 250-67.

185. U.S. ARMY CORP OF ENGINEERS, ALASKA DISTRICT, ALASKA VILLAGE EROSION TECHNICAL ASSISTANCE PROGRAM: AN EXAMINATION OF EROSION ISSUES IN THE COMMUNITIES OF BETHEL, DILLINGHAM, KAKTOVIK, KIVALINA, NEWTOK, SHISHMAREF, AND UNALAKLEET 21-25 (2006); *see also* GEN. ACCOUNTING OFFICE, ALASKA NATIVE VILLAGES: MOST ARE AFFECTED BY FLOODING AND EROSION, BUT FEW QUALIFY FOR FEDERAL ASSISTANCE 32 (2003).

that 75 percent of the harm remained to be addressed by other entities and causes that are not a party to the suit nor perhaps ever discoverable? It seems, given the nature and number of contributors to climate change, courts are always going to prefer a regulatory solution to this enormous problem, making any climate change case incredibly difficult to “win.”

However, if any case can contain the necessary elements to succeed in the near future, *Kivalina*, as a whole, appears to have them all. It has a viable plaintiff. The complaint names highly vulnerable defendants with allegations of civil conspiracy. The legal theory of public nuisance is one that is well developed in federal common law and has yet to be pre-empted. It also presents an opportunity for incremental change in damage awards, asking for the realistic cost of relocation, as measured by two independent government agencies. Many scholars argue that attempting to redress a diffuse number of harms presents a number of important obstacles, including a tougher time with proof and causation, and overriding policy concerns of undermining the opportunity for adaptation and mitigation (as compensation for victims could leave industry pockets empty). This would barely scrape the surface of the capability of these profit-rich industries to internalize the costs of damages caused by their past, present, and future greenhouse gas emissions.

## V. CONCLUSION

The bottom line is that it is better to start with incremental steps in any attempt to succeed in a suit for climate change liability. A case with a small numbers of plaintiffs, requesting relatively modest damages is preferable at this stage, as compared to one that aims for a currently unattainable goal. Unfortunately, the impacts of climate change will long be with us and as such, an expansive, international system seems inevitable. It will take the world, acting in concert, to succeed in meeting the emissions reductions necessary to reverse the warming trends. The priority now should be to compensate those discrete sets of victims who are losing their culture, their land, and themselves to climate change, spurning the public and private sectors to make meaningful changes and setting a better path for the generations of people to come.

Furthermore, the *Kivalina* case presents an opportunity for further dialogue on the need for legislative and executive action. As Martin Luther King Jr. said, “we are faced now with the fact that tomorrow is today.” When courts and other highly credible

institutions validate the urgency of reducing emissions, the general public's perception of the climate change debate shifts from whether climate change is real, to what remedies are immediately available for implementation. For the public, court decisions can move the debate from an esoteric one among scientists to an issue decided by impartial judges whose job it is to resolve such matters. The only question is, will this movement come from the judiciary by finding liability for climate change? Or will the filing of cases alone move world governments to action, precluding the immediate need for large damage awards? Either way, this planet will long be dealing with how to apportion responsibility for emissions and corresponding damages incurred by victims of climate change.

Editor's Note: Pending Publication of this article,

*The court granted defendants' motions to dismiss plaintiffs' federal claim for nuisance for lack of subject matter jurisdiction. The court found the political question doctrine applicable, and further that plaintiffs lacked U.S. Const. art. III standing to pursue their global warming claims under nuisance theory because their injury was not fairly traceable to the conduct of defendant. The court declined to assert supplemental jurisdiction over the remaining state law claims which were dismissed without prejudice to their presentation in a state court action. Native village of Kivalina v. Exxon Mobil Corp., 663 F. Supp. 2d 863 (2009).*

