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Sovereignty in the Arctic: An Analysis of Territorial Disputes & Environmental Policy Considerations

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Comment

SOVEREIGNTY IN THE ARCTIC: AN ANALYSIS OF TERRITORIAL DISPUTES & ENVIRONMENTAL POLICY CONSIDERATIONS

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I. INTRODUCTION

Global climate change has affected the Arctic region with greater intensity than the rest of the world.[1] The warming Arctic temperature is causing an unprecedented reduction of its trademark sea ice.[2] The summer of 2007 marked record-breaking shrinkage, spurring estimates that the Arctic may have ice-free summers before the close of this century.[3] 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.[4] Furthermore, it is estimated that the Arctic may contain twenty-five percent of the earth's oil and gas reserves.[5] 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).[6] 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.

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.

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.[7] These efforts were cut off by the icy conditions of the Arctic, which made travel through parts of the Arctic Ocean impossible.[8] Recently, however, the global climate is changing, causing the Arctic Region to become warmer.[9] This, in turn, is causing the sea ice to melt and the season for navigation to lengthen.[10] Though the melting sea ice could devastate Arctic biodiversity and indigenous cultures,[11] it enables access to the Arctic Ocean, for which navigators and explorers have searched for centuries.[12] 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.[13] 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.[14] 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.[15] 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.[16] Also contributing to warming temperatures is increased ultraviolet radiation reaching the earth's surface.[17] This likely results from stratospheric ozone depletion, caused by chlorofluorocarbons and other manmade chemicals.[18]

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.[19] The Arctic's climatic vulnerability stems from its short growing season and small variety of fauna and flora.[20] 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.[21] 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.[22] 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%.[23] 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; *see also* Encyclopedia of Earth, The 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.

21. *Id.*

22. *Id.*

23. *Id.*; *see also Arctic Sea Ice May Have Fallen by 50 Percent Since 1950s*, SCIENCEDAILY, Oct. 2, 2007, http://www.sciencedaily.com/releases/2007/10/071001160655.htm.

ice reductions have been found regionally.[24] For example, in the central region of the Arctic Ocean, studies indicate a 40% reduction in ice thickness.[25] During the summer of 2007 the overall area covered by ice in the Arctic decreased by over one million square miles.[26] This massive shrinking of sea ice is part of the estimated 50% shrinkage measured since the 1950s.[27]

The Arctic ecosystem is moving rapidly toward a condition it has not been in for more than one million years.[28] It is estimated that within this century the sea ice will largely disappear for periods of time during the summers.[29] Several studies indicate the Arctic is melting far more rapidly than once predicted,[30] fueling the urgency under which the Arctic nations make their territorial claims.[31] 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.[32] 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.[33] 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.[34] The savings in distance could equate to savings of billions of dollars for commercial shippers.[35] Hence, the search for this sea route has been the aspiration of ex-

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.[36] 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.[37]

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.[38] The USGS is currently conducting further investigations into the mineral resources within the Arctic.[39] The basins off the coast of Greenland are estimated to contain nine billion barrels of oil and eighty-six trillion cubic feet of gas.[40] The Alaskan Arctic coast is believed to have at least twenty-seven billion barrels of oil.[41] The greatest Arctic oil and gas reserves, however, are predicted to lie within the Russian-claimed subsoil.[42] According to the Russian Ministry of Natural Resources, Russia's coasts may contain up to 586 billion barrels of oil.[43]

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).[44] 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-

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# (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.[45] 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.[46] The region of the Arctic without a national sovereign consists of mainly ice-covered ocean rather than land.[47] 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.[48] Baselines are a boundary normally determined by the low-water line along the coast.[49] However, if the coastline is deeply indented, has fringing islands, or is highly unstable, straight baselines may be used by joining two appropriate points.[50] Within this shallow zone of internal waters, the coastal state has full sovereignty.[51] The coastal nation is free to enjoy and regulate navigation and natural resource exploitation, while foreign nations lack rights of passage.[52]

Extending from the baseline outward twelve nautical miles is the territorial zone.[53] Within this region, the coastal state retains its right to regulate and use the natural resources.[54] 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.[55] The LOS Convention defines innocent passage as the "continuous and expeditious" traversing of the territorial sea without entering internal waters,[56] in a manner that is "not prejudicial to the peace, good order or security of the coastal

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."[57] The treaty then enumerates activities it deems prejudicial, including military activities, pollution, fishing, and research.[58] 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.[59] This area is known as the contiguous zone.[60]

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 . . . ."[61] The EEZ extends 200 nautical miles from the baseline.[62] 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.[63]

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.[64] 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.[65] A nation's continental margin is the submerged land mass that is not actually the ocean floor,

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 [CDFAIT], Frequently Asked Questions, 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."[66] 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.[67] These resources include nonliving resources found in the seabed and subsoil, such as minerals, and living organisms found therein belonging to sedimentary species.[68] These sovereign rights, however, do not extend to the water column above the continental margin.[69] 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.[70]

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[71]—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.[72] The Commission is comprised of twenty-one geological, geophysical, or hydrographic experts elected by the state-parties to the LOS Convention.[73] The duties of the Commission are twofold: to provide scientific and technical advice to nations pre-

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 (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.[74]

Compiling and evaluating the bathymetric, seismic, and geophysical data necessary for a submission to the Commission is a great undertaking for a coastal nation.[75] 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.[76] However, the Commission has allowed time extensions, mainly to accommodate developing countries. [77] Upon receipt of a nation's submission, the Commission convenes a sub-commission assigned to the submission.[78] 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.[79] 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.[80] 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.[81]

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".[82] 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 (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.[83] 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.[84] 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."[85] 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.[86] Conversely, if the boundary conflicts with the Commission's recommendation, the nation's claim is more discredited.[87]

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),[88] Finland, Iceland, Norway, Sweden, the Russian Federation, and the United States of America.[89] 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 (last visited June 14, 2009).

also environmentally and ecologically.[90]

A. Canada's Claims to the Arctic

Canada is the world's second largest circumpolar country.[91] The extensive coastline of northern Canada and many of the islands of the Arctic Ocean fringing this coast are unequivocally Canadian territory.[92] However, little else regarding Canadian Arctic territory is so resolute—not even its starting point, the baselines.[93] Rather than the usual baselines determined by the low water line,[94] Canada has drawn straight baselines around its Arctic Archipelago.[95] 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.[96] This assertion, effectively enclosing the Northwest Passage as Canadian internal waters[97] and giving Canada the right to exclude foreign ships or charge them tolls for their passage, is one of four main international disputes concurring Canda's Arctic sovereignty.[98]

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

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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.

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.

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.

several European nations maintain[99] 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.[100] 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.[101] Thus, waters that would otherwise be part of the nation's territorial or contiguous zones become part of the nation's internal waters.[102] 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.[103]

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.[104] 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.[105] According to the International Court of Justice (ICJ)[106] in the Corfu Channel Case,[107] 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."[108] 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 (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.[109] 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[110] 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.[111] 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.[112] 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.[113] With the oil and gas reserves estimated to lie within this wedge of ocean, neither country is likely to retreat from its territorial claim.[114] Some sources assert that a joint-management scheme allowing both nations access to minerals in the disputed area is a relatively simple solution.[115] However, past attempts to negotiate similar agreements between Canada and the U.S. have failed.[116] Given the potential value of the territory at stake, future negotiations for a joint-management scheme are unlikely to succeed.[117]

Thirdly, Canada and Denmark have disputed the sovereignty of Hans Island, a 1.3 kilometer "rock," since the 1970s.[118] 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.[119] 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.[120] 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.[121]

The fourth Canadian Arctic territorial dispute, and possibly the one with the greatest ramifications, is over the northern continental shelf.[122] 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. [123] Determinations of the outer limits of each nation's continental shelf under the LOS Convention will be essential in resolving this heated dispute.[124] Canada ratified the LOS Convention in November 2003[125] and therefore has until November of 2013 to submit a continental shelf claim to the Commission.[126] 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.[127] In 2004, Canada announced its federal budget of $70 million to fund its ocean mapping project.[128] 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.[129] Since the announcement, an additional $20 million has been reportedly allocated to the program.[130] Currently, the Canadian government estimates that the breadth of its continental shelf beyond its EEZ covers 1.7 million kilometers.[131] Canadian

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; 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-limites.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.[132] 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.[133] Furthermore, the "Alpha-Mendeleev Ridge" may be part of the underwater mountain range containing the Lomonosov Ridge, currently claimed by Russia[134] and claimed to possibly belong to Denmark as well.[135] 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.[136] 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,[137] and Denmark regarding their overlapping Arctic interests.[138] However, considering what is at stake, international Arctic relations remain tense.[139]

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.[140] The inter-

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 (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; 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 (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.[141] Russia's submission declared 1.2 million square kilometers of Arctic territory stretching through the North Pole, including the potentially oil[142] and gas-rich Lomonosov and Alpha-Mendeleev Ridges.[143] This is about the size of Texas, California, and Indiana combined.[144] Canada, Denmark, the U.S., and Norway could also claim portions of this region.[145] 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.[146] 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,[147] while the U.S.

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.

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; *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 Feburary 4, 2002), *available at* 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. 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."[148] 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.[149]

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.[150] With its fleet of eighteen Arctic-worthy icebreakers[151], 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[152] and was the first nation to utilize the mechanisms provided in the treaty for claiming an extended continental shelf.[153] In November 2007, the Russian prime minister visited Canada and affirmed its commitment to diplomacy regarding Arctic territorial issues.[154]

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.[155] Norway's submission would

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 (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.

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.[156] 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).[157] 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.[158] 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.[159] 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.[160] 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.[161] The Commission has yet to make a recommendation on the Norwegian submission.[162] 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; *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; *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 (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.[163] Denmark's deadline to make its submission to the Commission is November 2014.[164] 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.[165] 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.[166] On its current mission, called Lomrog or "Lomonosov Ridge Off Greenland," the Project is mapping the potentially oil-rich mountain chain.[167] As previously mentioned, this controversial ridge may belong to Russia, Canada, or may not be a part of any nation's continental land mass.[168] 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.[169] The Banana Hole region may also be claimed by Iceland.[170]

Also noted previously in the discussion of Canada's claims, Denmark asserts sovereignty over Hans Island.[171] 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.[172] 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 (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.[173]

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.[174] 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.[175] 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.[176] 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.[177] 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]."[178]

Opponents of adherence to the LOS Convention argue that the treaty is objectionable because it impinges on U.S. sovereignty.[179] Opponents also claim that the treaty interferes with U.S. military and intelligence activities.[180] 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,[181] it does not change the current status under which the U.S. conducts military and intelligence activities within the territorial zones of other nations.[182] 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.[183] 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[184] 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.[185]

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.[186] 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[187] "as soon as possible."[188] 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; *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; *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.

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.

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.[189] 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.[190] 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."[191]

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[192] and the Chukchi Sea off the northwestern coast.[193] 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.[194] The maritime boundary between the U.S. and Canada in the Beaufort Sea is already a point of contention between the two nations.[195] Estimates by scientists that the continental shelves of the U.S. and Canada likely overlap in this area adds further strife to the dispute.[196] 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[197] and to oppose the claims submit-

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.[198] 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.[199] 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."[200] Animal species such as the polar bear and ice-dependent seals[201] may face extinction as a result of the melting sea ice.[202] Walruses and ice-dependent seabirds will also be endangered.[203] These animals rely on the sea ice for essential habitat, foraging, and reproductive activities.[204] Unfortunately, their populations and well-being have already been adversely affected.[205] Further, the reduction and possible extinction of polar bears and other animals disrupts the food chain, impacting other Arctic species.[206] The diminishing sea ice also directly devastates organisms on the opposite end of the Arctic food web.[207] 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,[208] such as krill and small crustaceans.[209] Those organisms, in turn,

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.

208. HASSOL, *supra* note 1, at 60.

209. Travis, *supra* note 207.

are the sustenance for larger life forms, such as whales.[210] Thus, the warming climate is directly impacting Arctic fauna and flora at all trophic levels.[211] With the symbiosis of the ecosystem, all Arctic species will be affected either directly, indirectly, or both.[212]

Also resulting from the warming climate is increased economic activity, such as commercial fishing, drilling for oil and gas, and navigation.[213] Commercial fishing affects the environment and is affected by environmental changes.[214] As the climate warms, fish stocks that are indigenous to colder temperatures have begun migrating north.[215] The displacement of fish species disrupts the Arctic food web, thus potentially causing "widespread disruption" on the entire ecosystem.[216] This is also a symptom of overfishing, which has been a problem in the Arctic in the past.[217] 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.[218] 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.[219] 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.[220] 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.[221] 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."[222] 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.[223] Thus, chronic environmental damage occurs by the daily operations of the exploration, exploitation, and transportation of minerals.[224]

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.[225] Unlike terrestrial oil spills, marine oil spills are more difficult to contain with the oil spreading for hundreds to thousands of miles.[226] 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.[227] The coating of the feathers or fur of a bird or animal with oil results in numerous physical detriments.[228] For example, if the oil compromises the insulation provided by the fur, in cold climates the animal may die of hypothermia.[229] 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.[230] 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.[231] Furthermore, in icy waters, "there continues to be no effective method for containing and cleaning up an oil spill . . . ."[232] 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.[233]

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/ (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.[234] 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.[235] 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.[236] 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.[237] The gravity of the climate change in the Arctic alone warrants the attention of policymakers.[238] The Arctic is undergoing a monumental change that has the potential to devastate its entire ecosystem.[239] 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.[240] These practices bring the threat of oil spills and other significant environmental consequences.[241] 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

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.[242] Furthermore, the treaty is universal, dealing not just with the issues of the Arctic Ocean, but all the world's oceans.[243] 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.[244] 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),[245] the Arctic Council is similarly limited to environmental issues.[246] Also like the AEPS, the Arctic Council lacks independent funding, a restriction undermining its effectiveness.[247] 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."[248] As this list suggests, the only major environ-

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 (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.[249] 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.[250] The Polar Code recognizes the distinct dangers that the Arctic environment poses to watercraft.[251] Tthe Polar Code was Originally intended to implement a mandatory set of standards for safety and controlling pollution in Arctic navigation.[252] However, following U.S. objections the standards became voluntary and were renamed the Guidelines for Ships Operating in Arctic Ice-Covered Waters (the Guidelines).[253] Today, the Guidelines are primarily a standard that the Arctic shipping industry uses to obtain ship insurance.[254] 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)[255] and agreements regarding fish stocks.[256] 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.[257] 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.[258]

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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).[259] Areas of the Arctic are covered by this treaty, but it is not meant to address distinct Arctic issues.[260] 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.[261] 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.[262] The OSPAR Convention protects against a multitude of environmental harms from various human causes through its "ecosystem approach."[263] 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.[264] 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.[265] "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."[266] Ultimately, the objective of this approach is to achieve "sustainable use of ecosystem

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; 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 (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 (last visited June 17, 2009).

264. *See generally* First Joint Ministerial Meeting of the Helskinki 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."[267]

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.[268] The OSPAR Commission further supported this plan by participating in the 2002 World Summit on Sustainable Development.[269] Furthermore, the OSPAR Convention is not limited to gathering information, but is empowered with a permanent secretariat, funded by the contracting parties.[270] 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.[271] Thus, the OSPAR Convention is fortified with implementation abilities that are lacking in its soft law counterparts.[272]

Another treaty with possible parallels to an effective regime in the Arctic is the Antarctic Treaty.[273] 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.[274] Hence, there are lessons to be learned from the Antarctic Treaty's nearly fifty years of experience.[275] Successes of the Antarctic Treaty include its foundation of scientific research,[276] its moratorium on territorial claims and thus mineral exploitation,[277] and its demilitarization.[278] These concepts merit consideration, but because of differences between the Arctic and the Antarctic regions, they do not translate seamlessly to the Arctic.[279]

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 (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]."[280] Antarctica is land mass surrounded by ocean, whereas the Arctic is ocean surrounded by land mass.[281] Also, Antarctica is more geographically isolated from dense human populations than is the Arctic.[282] 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.[283] 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.[284] 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.[285] 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."[286]

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.[287] 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/seaice/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 (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.[288] The six working groups of the Arctic Council have already made significant progress in identifying and monitoring the unique environmental issues of the Arctic.[289] 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.[290] 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.[291] Furthermore, sustainable development is also particularly important in the Arctic.[292] 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.[293] In addition, the environmental issues of fishing and navigation should be specifically addressed by working groups of this regime.[294] 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 (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.[295] The fishing issues, however, require the development of a seventh working group comprising a fisheries management plan for the entire Arctic Region.[296] Finally, but no less crucial, the regime must be empowered with independent funding and the authority to take action on its findings.[297] 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.[298]

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.