

THIN ICE, SHIFTING GEOPOLITICS: THE LEGAL IMPLICATIONS OF ARCTIC ICE MELT

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INTRODUCTION

Navigators searched for a commercial sea route via the Arctic Sea for centuries. In North America, this route was historically known as the Northwest Passage, and generations of merchants and seamen sought the route because the existence of such a passage would dramatically cut travel time and costs.¹ Heavy ice in the Arctic Ocean once prevented utilization of both the Northwest Passage over the American continent and the Northern Sea Route over the Eurasian continent. Today, this may be changing. Arctic ice naturally recedes every summer when the region is exposed to long hours of sunlight, and the melting in recent years has been considerably greater than historical averages. Due to rising global temperatures, scientists project that the Arctic sea routes will open up to seasonal shipping within the century.²

The melting ice will also facilitate access to the Arctic's lucrative natural resources. Not only does the Arctic seabed have rich mineral deposits, but geologists also believe large quantities of oil and natural gas lie beneath the Arctic seabed.³ As one expert has aptly noted, "[i]ronically, the great melt is likely to yield more of the very commodities that precipitated it: fossil fuels."⁴ The growing pressure to discover diminishing supplies of oil and natural gas will likely entice oil and gas companies to extract the resources that are predicted lie under the Arctic sea.

Due to the hostility of the region, the Arctic expanse has been largely ignored or forgotten throughout modern history. Because Arctic sovereignty has never been completely determined or agreed upon, rights to the opening Arctic passageways as well as the natural resources located under the water are sure to be

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1. Clifford Krauss, Steven L. Myers, Andrew C. Revkin & Simon Romero, *As Polar Ice Turns to Water, Dreams of Treasure Abound*, N.Y. TIMES, Oct. 10, 2005, at A1.

2. Mark Jarashow, Michael B. Runnels, & Tait Svenson, Note, *UNCLOS and the Arctic: the Path of Least Resistance*, 30 FORDHAM INT'L L.J. 1587, 1587 (2007).

3. *Scramble for the Seabed*, THE ECONOMIST, Jan. 3, 2009.

4. Scott G. Borgerson, *Arctic Meltdown: The Economic and Security Implications of Global Warming*, 87 FOREIGN AFFAIRS 63 (2008).

contested in years to come.⁵ As a consequence, questions regarding the delineation of territorial sovereignty that are largely settled in other areas of the world remain contested in the Arctic. As states realize the value of the Arctic, they start to assert and enforce their privileged claims of dominion. Within the last few years, the international struggle for control of the Arctic's natural resources, navigational capacity, and military opportunities have dramatically increased.⁶

International law has a vital role to play in resolving the unfolding dispute. The provisions and definitions within the United Nations Convention on the Law of Sea⁷ ("UNCLOS" or "the Convention") provide critical guidance for Arctic nations as they attempt to assert sovereignty claims. UNCLOS also establishes dispute resolution mechanisms that could be used to determine ownership of Arctic territory if countries cannot negotiate acceptable decisions. Moreover, although not yet ratified by the United States, this Convention is largely seen as a codification of customary international law. Therefore, UNCLOS should be regarded as a primary resource for resolution of Arctic disagreements.

Sovereignty disputes reflect the geopolitical realities of the region. Geopolitics is defined as the study of the influence of geography, history, and social science with reference to spatial politics and patterns at various scales.⁸ The geopolitical balance of power in the Arctic is radically changing as the geography of the region undergoes massive transformation. Arctic geography has increasing economic and strategic significance because the resources in the area are becoming commercially available. Geopolitics, because it is preoccupied with borders, resources, flows, territories, and identities, can provide a pathway for critical analysis of future disputes.⁹ Moreover, the interrelationship between power and geography can be used as a tool to understand and anticipated trends in the international law of the region. The changes in the Arctic have created a unique situation, and the analysis that follows will provide an in-depth review of the various legal claims.

This paper is divided into six parts. Part I gives background information about how fast the ice is melting. The pace of the melt is important because visible signs of warming pressures countries to assert claims on resources and navigable regions. Part II highlights the importance of northern sea routes and is followed by Part III outlining the mineral wealth in the region. Because mining and travel in the Arctic will be both expensive and hazardous even after significant portions of sea ice have melted, states seek to understand the dangers of the region to better appreciate the costs and benefits of development. Part IV analyzes the law of continental shelves and how countries are already utilizing this law to claim the sea floor. Part V examines the laws that could affect the Northwest Passage and the

5. See Stephanie Holmes, Comment, *Breaking the Ice: Emerging Legal Issues in Arctic Sovereignty*, 9 CHI. J. INT'L L. 323, 324 (2008).

6. *Scramble for the Seabed*, *supra* note 3.

7. UN Convention on the Law of the Sea, opened for signature Dec. 10, 1982, U.N. Doc. A/CONF. 62/122 (1982), 21 I.L.M. 1261 (1982) [hereinafter UNCLOS].

8. GEARÓID Ó TAUTHAIL, *CRITICAL GEOPOLITICS* 10 (1996).

9. *Id.*

international use of the Arctic ocean over North America. Part VI concludes by outlining potential resolutions to the Arctic dispute and projections about the future.

I. HOW QUICKLY IS ARCTIC ICE MELTING?

Global warming is most dramatic in the Arctic.¹⁰ In Alaska and western Canada, average winter temperatures have increased by as much as seven degrees Fahrenheit in the past 60 years.¹¹ Scientists agree that atmospheric warming will continue for years to come, and that this warming will significantly affect ice coverage in the Arctic. Many experts believe the particularly sharp increase in warming and melting throughout the last few decades can be attributed to both human and natural causes.¹² Because ice and snow are white, they have what is known as a “high albedo” and reflect most solar energy.¹³ Albedo is a measure of how strongly an object reflects light from sources such as the sun. Water is darker and thus has a “low albedo” that absorbs most solar radiation. This creates a condition known as a “positive feedback loop” and, as a consequence, the Arctic region essentially amplifies any sort of warming trend.¹⁴ The ocean exposed by melting ice soaks up more heat, which melts more ice and exposes more sea.¹⁵ In the most extreme scenario, the positive feedback loop could cause extreme deterioration of Arctic sea ice, leaving the Arctic Ocean more like the Baltic Sea, covered by only a thin layer of seasonal ice in the winter.¹⁶ At the current pace of retreat, trans-Arctic voyages could be possible within the next five to ten years, but it remains extremely difficult to make an accurate prediction.¹⁷

Arctic ice is melting at a much faster rate than scientists originally projected. According to satellite images from the European Space Agency, the year 2007 showed the lowest Arctic sea ice levels on record.¹⁸ The ice was so sparse that, for the first time in recorded history, the Northwest Passage was fully clear of ice.¹⁹ While the Northern Sea Route, a similar sea passage over the Siberian coast, remained blocked by a large mass of ice, the Northern Sea Route is predicted to open at approximately the same time as the Northwest Passage.²⁰ Experts at the National Snow and Ice Data Center (NSIDC) in Boulder, Colorado, noted that this significant transformation in Arctic geography occurred 30 years ahead of what

10. Borgerson, *supra* note 4.

11. *Id.*

12. Andrew Revkin, *No Escape: Thaw Gains Momentum*, N.Y. TIMES, Oct. 25, 2005, at F1.

13. *Id.*

14. *Id.*

15. *Id.*

16. *Id.*

17. Borgerson, *supra* note 4.

18. John Roach, *Arctic Melt Opens up Northwest Passage*, NATIONAL GEOGRAPHIC NEWS, Sept. 17, 2007, available at <http://news.nationalgeographic.com/news/2007/09/070917-northwest-passage.html>.

19. *Id.*

20. Press Release, National Snow and Ice Data Center, *Arctic Sea Ice Shatters All Previous Record Lows* (Oct. 1 2007) available at http://www.nsidc.org/news/press/2007_seaiceminimum/20071001_pressrelease.html.

had been predicted.²¹ Scientists are exploring several theories that may explain the mismatch between observations and climate models. The models may have assumed sea ice levels to be thicker than they actually are, they may lack a key dynamic in ocean circulation patterns, or they may underestimate the effects of the feedback loop.²²

Anthropogenic climate change will continue to affect the geography of the Arctic. Because geography shapes political power, the human struggle over borders, space, and authority in the Arctic will only increase in years to come.²³ As the physical landscape of the Arctic shifts, the landscape of human control shifts too. Not surprisingly, Arctic countries are scrambling to exert control over this potentially critical region.

II. WHY DO NORTHERN SEA ROUTES MATTER?

Northern sea routes provide economic, strategic, and political advantages. This section will analyze how an ice free Arctic tempts international shippers and traders with the promise of large cost reductions. It will also examine some of the concerns associated with shipping in this delicate and dangerous region. The Northern Sea Route and the Northwest Passage could assist international trade by cutting existing transit times by days, and would save shipping companies thousands of miles in travel.²⁴ The current route from Rotterdam and Yokohama through the Suez Canal stretches 11,200 nautical miles.²⁵ The Northern Sea Route could reduce the sailing distance to only 6,500 nautical miles, saving more than 40 percent.²⁶ Likewise, the Northwest Passage could cut a voyage from Seattle to Rotterdam by 2,000 nautical miles, making it nearly 25 percent shorter than the current route, through the Panama Canal.²⁷

International business would also be profoundly affected by Arctic ice melt. Taking into account canal fees, fuel costs, and other variables that determine freight rates, the shortcuts over the top of the world could cut the cost of a single voyage of a large container ship by as much as 20 percent, from approximately \$17.5 million to \$14 million.²⁸ The savings would be even greater for the megaships that cannot fit through the Panama and Suez Canals and must currently sail around the Cape of Good Hope and Cape Horn.²⁹ Moreover, these Arctic routes would also allow commercial and military vessels to avoid sailing through politically unstable Middle Eastern waters and the pirate plagued waters off the coast of Somalia and in the South China Sea.³⁰

21. Roach, *supra* note 18.

22. *Id.*

23. Ó TAUTHAIL, *supra* note 8, at 10.

24. Borgerson, *supra* note 4.

25. *Id.*

26. *Id.*

27. *Id.*

28. *Id.*

29. *Id.*

30. *Id.*

These advantages have led many leaders and intellectuals to reconsider the value of the Arctic; an inherently geopolitical process. Geopoliticians argue that the world is actively 'spacialized,' divided up, labeled, and sorted out into a hierarchy of places of greater and lesser importance.³¹ States then express their sovereignty by enforcing property rights over the areas of importance. As Arctic countries increasingly understand the significance of the northern reaches, they become anxious to possess them.

Arctic interest is somewhat tempered, however, by the significant drawbacks of Northern Sea routes. Not only will the Arctic remain covered in ice throughout the winter, but thick, multi-year ice will remain prevalent for some time to come.³² As opposed to first-year ice that is usually 3 feet thick and formed over a single winter, multi-year ice can be over 16 feet thick and sharp enough to cut through the hull of a ship.³³ Models have shown that the melting of first-year ice will annually open the Northwest Passage, but the melt may also clear the way for large pieces of multi-year ice to drift down from the North Canadian Archipelago.³⁴ This multi-year ice can be exceptionally dangerous. One study showed that multi-year ice accounted for 74 percent of the damage suffered by ships traveling in the Canadian Arctic between 1976 and 2007.³⁵ Therefore, if shippers ever attempt to take advantage of the passages, they will have to employ significant precautions.

In order to navigate these dangerous, opening sea-lanes, many of the world's shipyards are building ships with fortified hulls.³⁶ The lure of the Northern Sea Route and Northwest Passage are driving the development and construction of new types of ships, such as a double-ended tanker that can cruise bow first through open water and then turn around and proceed stern first to break through ice.³⁷ Russia has already acquired fourteen ice-breakers for its fleet, and many American naval specialists now say the two ice-breakers currently owned by the United States are grossly inadequate.³⁸ The very act of purchasing ice-breakers reveals interest in the region, and demonstrates future intentions.

III. WHAT ARE THE PROJECTED NATURAL RESOURCES IN THE ARCTIC?

Open and accessible sea lanes are not the only valuable commodity that an ice-free Arctic Ocean offers. This part of the paper will analyze the natural resources of the Arctic. Importantly, the technology and infrastructure needed to utilize these resources has not yet been developed. Nevertheless, these resources

31. JOHN AGNEW, *GEOPOLITICS: RE-VISIONING WORLD POLITICS* 2-3 (2d ed. 2003) (1998).

32. See Peter Tyson, *Future of the Passage*, NOVA, Feb. 2006, <http://www.pbs.org/wgbh/nova/arctic/passage.html>.

33. Anne Casselman, *Will the Opening of the Northwest Passage Transform Global Shipping Anytime Soon?*, SCIENTIFIC AMERICAN, Nov. 10, 2008, available at <http://www.sciam.com/article.cfm?id=opening-of-northwest-passage>.

34. *Id.*

35. *Id.*

36. Krauss et al., *supra* note 1.

37. *Id.*

38. Andrew Revkin, *Experts Urge U.S. to Increase Icebreaker Fleet in Arctic Waters*, N.Y. TIMES Aug. 17, 2008 at A0.

have generated the most excitement about the Arctic, and may generate future conflict. The Arctic may be the next, and probably the last, great energy frontier.³⁹ Scientists estimate the resources in the Arctic account for about 22 percent of the undiscovered, technically recoverable hydrocarbon resources in the world.⁴⁰ Typically, “undiscovered” resources are those which have not been measured or even fully identified, but are marked by some degree of geological assurance.⁴¹ “Technically recoverable resources” are those resources producible using currently available technology and industry practices.⁴² Scientists in the American government believe that 90 billion barrels of oil and vast amounts of natural gas may lie beneath the Arctic Ocean.⁴³ This quantity of oil would sufficiently meet current world demand for approximately three years.⁴⁴ With such huge potential profits at stake, the race has begun among Arctic nations for control of the resources in areas once considered too harsh to explore. As fuel prices become extremely volatile, the possibility of oil and natural gas reserves in the Arctic takes on added geopolitical significance. Because politically unstable Middle Eastern countries currently possessed the majority of fuel resources, Arctic nations may fight to possess oil and natural gas in the region and achieve energy independence.

While scientists begin to gain a better understanding of the resources in the Arctic, the exact locations of those resources remain relatively unknown. About 84 percent of the estimated resources are expected to be offshore.⁴⁵ A third of the undiscovered oil, or about 30 billion barrels, is believed to be off the coast of Alaska while nearly two-thirds of the undiscovered natural gas resources are in two Russian provinces, the West Siberian Basin and the East Barents Basin.⁴⁶ Many countries – including the United States – have scrambled to launch geological survey missions to better understand and assert their claims.⁴⁷ The imprecise boundaries in the Arctic have made the ownership of off-shore Arctic resources ambiguous. If the majority of the Arctic oil and natural gas can be found in territorial waters, long-term conflict is less likely to occur. At this point, however, the lack of certainty and the huge economic potential of the oil and gas reserves add to tensions between Arctic nations.

Oil and natural gas are not the only resources likely to be found in the Arctic – valuable minerals may also exist on the seabed. Scientists have long known about unconventional mineral ore deposits known as manganese nodules. These nodules are spherical accretions of manganese, cobalt, copper and nickel which

39. Krauss et al., *supra* note 1.

40. Press Release, U.S. Geological Survey, 90 Billion Barrels of Oil and 1,670 Trillion Cubic Feet of Natural Gas Assessed in the Arctic (Jul. 23, 2008), *available at* http://www.usgs.gov/newsroom/article.asp?ID=1980&from=rss_home.

41. *See id.*

42. *Id.*

43. *Scramble for the Seabed*, *supra* note 3.

44. Jad Mouawad, *Oil Survey Says Arctic has Riches*, N.Y. TIMES, Jul. 24, 2008, at C0.

45. U.S. Geological Survey, *supra* note 40.

46. Mouawad, *supra* note 44.

47. U.S. Geological Survey, *supra* note 40.

precipitate out of sea water at depth.⁴⁸ They form when warm solutions of dissolved metals from the earth's crust leach into cold ocean waters, and they are found on roughly a quarter of the ocean floor.⁴⁹ Recovering the nodules can be technically difficult. The nodules are usually found under at least 2 miles of water and dredging them stirs large quantities of sediment which seriously disrupts marine habitat.⁵⁰ Thus, excitement surrounding the minerals has calmed significantly since the 1970's.⁵¹ Not only must the technology become cheaper and more widely available, but industrial commodity prices must also remain high to make manganese nodules profitable.⁵²

Because the Arctic can be relatively unstable and much remains unknown about specific conditions, environmental issues surround all forms of resource extraction in the region. Concerns about onshore resources, such as the oil in Alaska's Arctic National Wildlife Refuge, have dominated debates about Arctic development in the United States up to this point.⁵³ However, in the future most resources will likely be discovered offshore. Arctic development will surely create environmental consequences. The United States Coast Guard has already begun to prepare for the time when tanker and other ship traffic increases in the area, taking precautionary steps to deal with an inevitable oil spill.⁵⁴ Russia, on the other hand, has taken very few steps to prevent and manage oil spills. For the entire Barents region, Russia has only two bases with the equipment necessary to fight an oil spill while Norway has at least 50 bases of this kind.⁵⁵ Any oil spill occurring in the Arctic will take longer to dissipate because the waves are not as strong in the region and natural decomposition occurs slowly in colder temperatures.⁵⁶ Therefore, even as countries look to the Arctic to supplement declining oil reserves, environmental security may become an issue that divides countries as well.

Geopolitics is inherently tied to resource use and control. The Arctic, as relatively virgin territory, lacks the geopolitical stability that has been established in most other areas of the world. The fact that the geography itself is in flux adds to the instability of the region. Countries will jockey for position until an effective legal regime is established in the area.

IV. WHAT IS THE LAW OF CONTINENTAL SHELVES?

As global pressures on resources inevitably increase, contested Arctic sovereignty claims beg resolution. International law of the sea will be an essential tool in resolving debates. This section begins with a brief history of maritime law,

48. *Scramble for the Seabed*, *supra* note 3.

49. *Id.*

50. *Id.*

51. *Id.*

52. *See id.*

53. Borgerson, *supra* note 4.

54. Andrew Revkin *A Little Oil Goes a Long Way*, Dot Earth Blog, N.Y. TIMES, Jul. 25, 2008, <http://dotearth.blogs.nytimes.com/2008/07/25/a-little-oil-goes-a-long-way/?apage=9>.

55. *Id.*

56. *Id.*

followed by an examination of the United Nations Convention on the Law of the Sea, and how the Commission of Continental Shelves may be the body used to determine resource rights. These analyses reveal the importance of the Commission of Continental Shelves and UNCLOS, and suggest that it is imperative for the United States to ratify this treaty to protect its national interests.

A. Historic Maritime Law

In 1608, Hugo Grotius published a short treatise arguing that the world's oceans constitute a common resource belonging to all states.⁵⁷ This proposition became known as the Freedom of the Seas Doctrine and still forms the basis of modern maritime law.⁵⁸ Grotius supported his argument with the premise that the ocean was so large and inexhaustible that rival countries could simultaneously carry out the major activities of fishing and navigation without incident.⁵⁹ Unfortunately, Grotius' premise did not hold true post-industrialization, and the world's oceans have become vulnerable to overuse.⁶⁰ The high seas have become subject to the tragedy of the commons.⁶¹ In this context, the tragedy of the commons is represented by multiple states acting independently and ultimately spoiling large portions of the ocean through over-fishing, resource exploitation, and pollution.⁶² The Arctic region, with its fragile environment, seems particularly susceptible to the tragedy of the commons, especially if sovereignty rights remain unresolved.

International law of the sea evolved dramatically throughout the twentieth century as technology developed and the problems associated with overuse expanded. Historically, nations could only exert rights over the ocean for three nautical miles (nm) beyond their geographic territory, but this standard began to shift in the beginning of the twentieth century as countries sought to extend their territories to include mineral deposits and fishing rights. In 1945, President Truman extended the United States' control to all resources on the continental shelf using the customary international law principle of resource protection.⁶³ Also in the latter part of the 1940's, several countries extended their control to 200 nm beyond their land territory to cover productive fishing grounds.⁶⁴ Both the 200 nautical mile boundary and continental shelf sovereignty have become part of modern law.⁶⁵

57. Hugo Grotius, *Mare Liberum* (Ralph Van Deman, trans., Oxford 2001) (1916).

58. Rebecca Bratspies, *Financing King Neptune: Fisheries Management and the Limits of International Law*, 25 HARV. ENVTL. L. REV. 213, 219 (2001).

59. *Id.*

60. *Id.* at 216-17.

61. See Garrett Hardin, *Tragedy of the Commons*, 162 SCIENCE 1243, 1243 (1968).

62. *Id.*

63. *Policy of the United States With Respect to the Natural Resources of the Subsoil and Sea Bed of the Continental Shelf*, Proclamation No. 2667 (Sept 28, 1945), reprinted in 1945 Pub. Papers 150, 150 (nullified by the Outer Continental Shelf Land Acts, 43 USC § 1331 et. seq. (2000)).

64. Bratspies, *supra* note 58, at 222.

65. See UNCLOS, *supra* note 7, art. 57, 76.

Toward the latter half of the twentieth century, resources heavily contested, and thus nautical disagreements, became more frequent. There was a general call for the codification of international maritime law, so negotiations began on the United Nations Convention on the Law of the Sea in 1973. The Convention was designed to resolve international nautical disputes⁶⁶ and to set aside the resources of the high seas as the common heritage of mankind.⁶⁷ UNCLOS is sometimes considered the “constitution of the oceans,” due to its expansive nature.⁶⁸ UNCLOS governs nearly every aspect of maritime law, including sovereignty limits, navigation, seabed mining, and environmental protection.⁶⁹ Moreover it provides a legal framework for resolving ocean-related disputes, which may make it an appropriate organization to deal with the Arctic conflict. While the United States has not yet ratified UNCLOS, it has become generally accepted worldwide and recognized as a codification of customary international law. To understand how UNCLOS may apply to the Arctic, the following provides a brief description of the terminology and access rights associated with coastal zones described in UNCLOS.

B. UNCLOS and Continental Shelves

Despite the United States’ non-ratification, the expansive nature of UNCLOS and its general acceptance make this treaty a prime candidate for adjudicating sovereign claims and natural resource disputes in the Arctic. UNCLOS creates a general structure of maritime control for coastal states all over the world. UNCLOS codified customary international law by granting states the most control over the waters closest to its shore or “baseline.”⁷⁰ A state can exercise less control over areas found further from its land territory. In general, a state can exercise its sovereignty 200 nm from its baseline.⁷¹ This area is known as the exclusive economic zone (EEZ), and the coastal nation has sole exploitation rights over all natural resources within that boundary – including oil and natural gas reserves.⁷² UNCLOS allows states to extend their exclusive economic zone beyond 200 nm only if they can demonstrate that the continental shelf beyond their coastline extends further.⁷³

UNCLOS defines the continental shelf as the natural prolongation of the land territory to the continental margin’s outer edge.⁷⁴ So long as the shelf extends at least 100nm from the point at which the sea reaches a depth of 2.5km – known as the 2500 meter isobath – a country may be granted rights over the natural resources

66. *Id.* at Preamble.

67. *Id.* art. 150.

68. UNCLOS is often commonly referred to as the “constitution of the oceans.” See e.g., John T. Swing, *What Future for the Oceans?*, FOREIGN AFFAIRS Sept. 2003 at 139.

69. See UNCLOS, *supra* note 7.

70. See discussion of internal waters and the Northwest Passage, *infra*.

71. UNCLOS, *supra* note 7, arts. 56, 57.

72. *Id.*

73. *Id.* arts. 76, 77.

74. *Id.* art. 76.

on and under the seabed up to 350 nautical miles from land.⁷⁵ This provision allows coastal states to extract oil and natural gas on the continental shelves, to the exclusion of others.

Because it can be difficult to decipher the geologic structures of the continental shelf, UNCLOS created a specific body to examine claims. This body, known as the United Nations Commission on the Limits of the Continental Shelf, meets every two years.⁷⁶ While this Commission may provide specific proposals to the countries that submit claims, UNCLOS describes the role of the Commission of the Continental Shelf as 'recommendatory' only.⁷⁷ Coastal states have the liberty to establish their boundaries on the basis of the Commission's suggestions.⁷⁸ Countries have ten years to submit claims to the body after ratification of UNCLOS.⁷⁹ Five countries have territory within the Arctic Circle: the United States (via Alaska), Russia, Canada, Denmark (via Greenland), and Norway. The U.S. has not ratified UNCLOS, and so has not yet established a ten year deadline. Russia ratified the Convention in 1997, making 2009 the last session during which it could bring claims.⁸⁰ Canada ratified UNCLOS in 2003 and Denmark in 2004, so both of these countries have some years before they must submit their final claims.⁸¹ Norway ratified the Convention in 1996, and submitted a claim to the Commission on Continental Shelves in 2006.⁸²

The Commission on Continental Shelves has already reviewed Norway's submission and in 2009, the Commission approved Norway's 146,000 square mile claim.⁸³ One small section, known as the Loophole, overlaps with a previous Russian claim.⁸⁴ When the Commission approved Norway's claim, it stated that it was up to Norway to resolve any disputed areas through negotiation.⁸⁵ Because the United States has not ratified the UNCLOS, it cannot bring claims before the commission and no representatives sit on the advisory board.

Russia has aggressively asserted its sovereignty in the region since its ratification of UNCLOS in 1997. In 2001, Russia was the first Arctic nation to bring a submission before the UN Commission on the Limits of the Continental Shelf.⁸⁶ In this claim, Russia sought ownership of approximately 460,000 square miles of the continental shelf; an area roughly the size of the states of California,

75. *Id.*

76. *Id.* Annex II.

77. *Id.*

78. See David A. Colson, *The Delimitation of the Outer Continental Shelf Between Neighboring States*, 97 A.J.I.L. 91, 93 (2003).

79. UNCLOS, *supra* note 7, at Annex art. 4.

80. Holmes, *supra* note 5, at 331.

81. *Id.*

82. *UN Backs Norway claim to Arctic Seabed Extension*, CALGARY HERALD, Apr. 15, 2009, available at <http://www.calgaryherald.com/technology/back+Norway+claim+Arctic+seabed+extension/1499675/story.html>.

83. *Id.*

84. *Id.*

85. *Id.*

86. Borgerson, *supra* note 4.

Indiana, and Texas combined.⁸⁷ This 2001 claim included the North Pole.⁸⁸ The UN Commission neither rejected nor accepted the Russian proposal, but recommended the country undertake additional research.⁸⁹

In the summer of 2007, Russia sent a team of scientists in one of its nuclear powered ice-breakers to survey the Arctic region and plant the Russian flag on the seabed beneath the North Pole.⁹⁰ While the submersible was planting the flag, it also took samples from the sea floor.⁹¹ From these geologic samples, Russia argued the Lomonosov Ridge, an underwater mountain ridge that runs underneath the North Pole, and the Mendeleev Ridge, were natural extensions of the Eurasian continent.⁹² Russia submitted these findings to the UN Commission on Continental Shelves in May of 2009.⁹³

What did Russia argue in its submission to the Commission? Under the Convention, a state must demonstrate that an underwater structure is a geologic extension of the land territory. Thus, Russia would have to establish that the Lomonosov and Mendeleev Ridges were not “oceanic ridges,” defined in the Convention as free-standing geologic structures separated from the continental shelf.⁹⁴ Therefore, Russia would have to demonstrate that the Lomonosov and Mendeleev Ridges were “submarine elevations that are natural components of the continental margin.”⁹⁵ If Russia is successful in its claims, then the 200 nm EEZ outer limit would be removed, allowing Russia to extend its EEZ to 350 nm or the end of the continental shelf.⁹⁶

While Canada and Denmark have not yet submitted a claim to the Commission on Continental Shelves, Canadian and Danish scientists claim to have proof that the Lomonosov Ridge is actually a natural extension of the North American continent.⁹⁷ The culminating research – the product of millions of dollars of contributions from both governments – was presented at the 2008 International Geological Congress.⁹⁸ These two countries hope that the geologic

87. *Id.*

88. Press Release, UN Commission on Continental Shelves, Commission on Continental Shelves Receives its First Submission: Russian Federation First to Move to Establish Outer Limits on its Extended Continental Shelf (12/21/2001) available at <http://www.un.org/News/Press/docs/2001/sea1729.doc.htm>. Mark Benitah, *Russia's Claim in the Arctic, and the Vexing Issue of Ridges in UNCLOS*, 11 A.S.I.L. 27 (2007).

89. *Id.*

90. Yuri Zarakovich, *Russia Claims the North Pole*, TIMES, Jul. 12, 2007.

91. *Id.*

92. Benitah, *supra* note 88.

93. *Id.*

94. *Id.* See also UNCLOS *supra* note 7, art. 76. (“The continental margin comprises the submerged prolongation of the land mass of the coastal State, and consists of the seabed and subsoil of the shelf, the slope and the rise. It does not include the deep ocean floor with its oceanic ridges or the subsoil thereof.”).

95. Benitah, *supra* note 88.

96. *Id.*

97. Randy Boswell, *Canada to Make Groundbreaking Arctic Claim*, NATIONAL POST, Aug. 6, 2008, available at <http://www.nationalpost.com/news/canada/story.html?id=705136>.

98. *Id.*

research will give them grounds to support territorial claims to the Commission on Continental Shelves. These two nations must submit their final submissions by 2013 and 2014 respectively.

Canada has been strengthening its claims of sovereignty over the continental shelf in other ways as well. In 2002, Canada began patrolling the most remote reaches of the Arctic with army rangers.⁹⁹ In response to Russia's symbolic flagging of the Arctic sea floor, Canada added eight new ice-breakers to its fleet, built a new deep-water port, reopened a closed air force base, and started a "cold weather" army training facility.¹⁰⁰ The Canadian military recently launched a satellite system that will allow surveillance of the Arctic as far as 1,000 miles offshore.¹⁰¹ Bill Graham, the Canadian defense minister, exemplified the aggressive Canadian posture when he said: "I don't see the Northwest Passage as something for another 20 years, but at the rate of present global warming, we know that it will be within 20 years and we have to get ahead now."¹⁰² Canada aims to not only tighten control of its territory, but also establish a strong posture for future disputes over the ownership of the continental shelf and the Northwest Passage.

These widely varied country positions make it clear that more geologic evidence must be acquired before this issue can be settled decisively. While the Commission on Continental Shelf is in the best position to delimit boundaries, the Commission has received dozens of pending claims from countries claiming continental shelves all over the world. Some argue the Commission on Continental Shelves has become overburdened with work in the past couple of years.¹⁰³ The Commission may not be able to resolve the nature and ownership of the Lomonosov Ridge and the area around the North Pole for some time to come. Therefore, even though it is my belief that the Commission on Continental Shelves would provide the best resolution to the problems of the region, Arctic countries have incentives to scrutinize alternative methods of settling disputes.

V. WHAT IS THE LAW REGARDING STRAITS AND PASSAGES?

As mentioned previously, under the UNCLOS regime, states can exert the most control over the waters closest to shore. This section will analyze the various legal standards and levels of control associated with the maritime zones immediately surrounding coastal states. This section focuses on the classification of the maritime zone containing the Northwest Passage, because its categorization may affect the ability of international shippers and merchants to traverse the waters above Canada. It is important to note that the analysis to follow would not apply to the waters above Russia. The Northern Sea Route is completely within Russian

99. Krauss et al., *supra* note 1.

100. *Arctic Patrol Ship Purchase Met with Skepticism*, CBC NEWS, Jul. 10, 2007, available at <http://www.cbc.ca/canada/north/story/2007/07/10/north-shipreax.html>.

101. Borgerson, *supra* note 4.

102. Krauss et al., *supra* note 1.

103. Nathaniel Gronewold, *A Peek Inside the U.N.'s Continental Shelf Commission*, N.Y. TIMES, Sept. 14, 2009.

control, which is significant because many models demonstrate the Northern Sea Route opening before the Northwest Passage does.

Each coastal zone is measured from a carefully defined baseline most often located at the shore or low-water line. UNCLOS recognizes “internal waters” as all waterways on the landward side of baseline.¹⁰⁴ These waterways basically function as a continuation of a country’s land territory. The coastal state may set laws, regulate use, exploit resources, and maintain absolute control over internal waters.¹⁰⁵ UNCLOS defines “territorial waters” as the coastal area up to 12 miles from baseline.¹⁰⁶ The state retains the right to set laws, regulate use, and draw on any resource. Foreign vessels, however, have a the right of “innocent passage” through these waters, which this means a foreign vessel can safely traverse territorial waters but cannot fish, pollute, fire weapons, or spy.¹⁰⁷ “Archipelagic waters” under the UNCLOS, are considered a hybrid of internal and territorial waters. An archipelagic baseline can be drawn between the outermost points of the outermost islands, so long as the points are sufficiently close to one another.¹⁰⁸ Archipelagic waters are like internal waters in that the state can exercise full sovereignty, but foreign vessels have right of innocent passage – similar to territorial waters.¹⁰⁹

Canada has claimed sovereignty over many of the islands in the Arctic sea, and argues that these islands create archipelagic waters under UNCLOS.¹¹⁰ If these claims are upheld, then experts believe that Canada may be able to assert sovereignty over the Northwest Passage and thus regulate its use – which could include the imposition of usage fees.¹¹¹ The United States disputes Canada’s claim to exclusive sovereignty over the Northwest Passage.¹¹² The United States holds the position that the northern islands of Canada may constitute archipelagic waters, but contends that the Northwest Passage is actually an international strait under UNCLOS, and thus cannot be subjected to Canada’s restrictive control.

If the Northwest Passage is classified as an international strait, then ships could freely to travel the route without Canadian control. International straits are defined as internationally trafficked waterways that connect oceans and economic zones through several viable routes.¹¹³ While the Northwest Passage connects oceans through numerous viable routes, Canada argues the route should fall under its exclusive sovereignty because it has never been “internationally trafficked.”¹¹⁴

104. UNCLOS, *supra* note 7, arts. 5, 8.

105. *Id.* art. 2.

106. *Id.* art. 3.

107. *Id.* arts. 17-19.

108. *Id.* art. 47.

109. *Id.* arts. 47-53.

110. Donald R. Rothwell, *The Canadian-U.S. Northwest Passage Dispute: A Reassessment*, 26 CORNELL INT’L L.J. 331, 332 (1993).

111. See Jarashow, Runnels, & Svenson, *supra* note 2, at 1600-01.

112. Rothwell, *supra* note 110, at 332.

113. Jarashow, Runnels, & Svenson, *supra* note 2, at 1605. See also UNCLOS, *supra* note 7, art. 37.

114. Jarashow, Runnels, & Svenson, *supra* note 2, at 1605-1607.

Since 1903, when the first transit of the Northwest Passage was made, less than fifty transits have been completed.¹¹⁵ Non-Canadian vessels made only sixteen of these transits and few were for commercial use.¹¹⁶ Even though the number of completed transits may rise exponentially in the future, at this point Canada claims primary usage. The United States has not accepted Canada's efforts to conclusively establish exclusive sovereignty over the Northwest Passage. Instead, the United States argues the Northwest Passage should not be subject to the exclusive sovereignty of one state.¹¹⁷ However, the United States has not ratified the Convention, thus hampering the utility of any of the potential dispute resolution mechanisms discussed below.

VI. HOW WILL ARCTIC NATIONS RESOLVE DISPUTES OVER CONTINENTAL SHELVES AND THE NORTHWEST PASSAGE?

International dispute resolution is controversial and tenuous. There are few enforcement mechanisms and states are often unwilling to bind themselves to unsavory decisions. Nevertheless, this section will analyze various legal frameworks within the international sphere that could be used to resolve the Arctic disputes. UNCLOS will be addressed first, followed by the International Court of Justice ("ICJ") and the continental shelf cases that have already been decided by this body. The Arctic Council and the rights of indigenous peoples will be examined next and the benefits of an Arctic Treaty will be treated last. While this aspect of the paper will focus on the more binding forms of dispute resolution, it is worth remembering that non-binding decisions are the norm in the international sphere. Thus, "negotiation, enquiry, mediation, conciliation, arbitration, judicial settlement, resort to regional agencies or arrangements, or other peaceful means"¹¹⁸ may be a more realistic, efficient, and effective means of resolving Arctic disputes.

A. International Tribunal for the Law of the Sea

Article 83 of the UNCLOS instructs countries with opposite or adjacent coasts that have submitted overlapping claims to the UN Commission on Continental Shelves to agree upon a boundary.¹¹⁹ If the countries cannot reach an agreement within a "reasonable period of time," then Article 83 directs them to resort to the remedial provisions of UNCLOS.¹²⁰ UNCLOS recognizes that dispute resolution within the international sphere can be complex, and so the Convention offers a variety of resolution options. UNCLOS indicates a strong preference for peaceful resolution of disputes, and provides that countries should first try to settle disputes informally.¹²¹ If the two parties are unable to settle a dispute on their own, UNCLOS suggests a range of forums. UNCLOS directly

115. *Id.* at 1610.

116. *Id.*

117. Rothwell, *supra* note 110, at 332.

118. U.N. Charter art. 33, para. 1.

119. UNCLOS, *supra* note 7, art. 83.

120. *Id.*

121. *Id.* art. 279.

sponsors the International Tribunal for the Law of the Sea, but also allows parties to access the International Court of Justice or an arbitral tribunal.¹²²

The International Tribunal for the Law of the Sea has 21 member judges.¹²³ Thus far, it has decided 16 cases.¹²⁴ The Tribunal has jurisdiction over all disputes submitted to it in accordance with the Convention.¹²⁵ It also extends to all matters specifically provided for in any other agreement which confers jurisdiction on the Tribunal. Notably, Article 298 allows nations to opt out of the binding dispute resolution provisions for disputes that arise under Article 83.¹²⁶ All Arctic nations except Norway have exercised this option.¹²⁷ This is not surprising given the general distaste for binding dispute resolution in international law, and this fact should not be read to undermine the effectiveness of the Tribunal. The Tribunal could still act as an arbitral body or issue an advisory opinion, presenting a valuable opportunity for compromise among Arctic nations.¹²⁸

B. International Court of Justice

The International Court of Justice has decided three major overlapping continental shelf disputes since its inception in 1946, and could act as to resolve the current Arctic disputes over sovereignty of the Arctic sea floor and the resources that may lie below.¹²⁹ The ICJ applied UNCLOS customary international law provisions on continental shelves in *Tunisia v. Libya*¹³⁰ and *Libya v. Malta*.¹³¹ The well known *North Sea Continental Shelf Case*¹³² was decided in 1969, before UNCLOS was drafted, but this case also dealt with similar issues.¹³³ However, as the ICJ noted in *Libya v. Malta*, even as the UNCLOS esteems a goal of equitable solutions, it offers little guidance in achieving those solutions.¹³⁴ Because the language of the Convention is unclear, the ICJ may draw on other international law principles—such as the equidistant principle, natural prolongation principle, historical practice, and sector theory—to give UNCLOS provisions context in an Arctic dispute decisions.

The equidistant principle has a strong history in customary law. Before UNCLOS, the 1958 Geneva Convention on the Continental Shelf provided that continental shelf disputes for countries with opposite or adjacent coasts should be decided by drawing a median line between the two coasts, unless the countries

122. *Id.* art. 287.

123. *Id.* Annex VI art. 2.

124. International Tribunal for the Law of the Sea, http://www.itlos.org/start2_en.html (last visited Jan. 17, 2010).

125. *Id.*

126. UNCLOS, *supra* note 7, art. 298.

127. Holmes, *supra* note 5, at 325.

128. UNCLOS, *supra* note 7, art. 191

129. *See, e.g.*, Holmes, *supra* note 5, at 340-41.

130. Continental Shelf (Tunis. v. Libya) 1982 I.C.J. 63 at 25-26 [hereinafter *Tunis. v. Libya*].

131. Continental Shelf (Libya v. Malta), 1985 I.C.J. 3 (June 3) [hereinafter *Libya v. Malta*].

132. North Sea Continental Shelf (F.R.G. Den. v. F.R.G. Neth.) 1969 I.C.J. 2 (Feb. 20) [hereinafter *North Sea*].

133. *See id.*

134. *Libya v. Malta* at 37-39.

came to another agreement or special circumstances required a different arrangement.¹³⁵ This method of demarcation was used in the *North Sea Continental Shelf Cases* but rejected in *Tunisia v. Libya*.¹³⁶ Originally, the method often came under strong attack for being arbitrary because “special circumstances” could preempt its use.¹³⁷ However, the principle has grown more widely accepted over time. An analysis based on the equidistant principle would likely favor Canada’s interests in the Arctic – at the expense of the United States. Canada argues the Alaskan border should be demarcated as a straight continuation from the land border on the coast. This method would allow Canada to claim a portion of the Beaufort Sea that is predicted to be rich in natural resources.¹³⁸

The United States argues that the Alaskan maritime border should follow the landform in a continuous northeasterly line.¹³⁹ This argument seems to be a variation on the natural prolongation principle – or the principle that a nation’s maritime boundaries should reflect the ‘natural prolongation’ of the land territory where reaches the coast. The meaning and application of the natural prolongation principle has evolved over time as well. When the doctrine was first used, its relationship to the 1958 Geneva Convention was far from clear.¹⁴⁰ The Court began to expand and clarify both the equidistant principle and the natural prolongation doctrine in *Libya v. Malta*.¹⁴¹ Libya argued that the natural prolongation of the land territory into and under the sea was fundamental to the juridical concept of the continental shelf.¹⁴² The Court, however, disagreed. This was the first case decided after the adoption of UNCLOS, and the Court completely set aside the relevance of natural prolongations.¹⁴³ Instead, the Court noted the significance of the 200nm exclusive economic zone described in the access rights of the UNCLOS, and disregarded the geological or geomorphological characteristics of the sea floor.¹⁴⁴ Since the time of *Libya v. Malta*, however, the law and practice of maritime delimitation has matured and natural prolongations are often considered today when determining continental shelf access rights.

Countries coming before the ICJ may also try to bolster their claims with evidence of historical use.¹⁴⁵ While Tunisia successfully made this argument in *Tunisia v. Libya*, Tunisia had an eighty year historical practice of fishing in the contested area.¹⁴⁶ In that case, the Court noted that historical rights and the

135. Holmes, *supra* note 5, at 344.

136. *North Sea* at 5. *See also* *Tunis. v. Libya* at 25-26.

137. Colson, *supra* note 78, at 99-100.

138. WALTER B. PARKER & JOHN H. BYRNE, SEA CHANGES: PERSPECTIVES ON ALASKA’S FUTURE UNDER PENDING UNITED NATIONS CONVENTION OF THE LAW OF THE SEA AND THE FINDINGS OF THE UNITED STATES OCEANS COMMISSION REPORT 3 (2004).

139. *Id.*

140. Colson, *supra* note 78, at 100.

141. *Libya v. Malta* at 23-24, 45-46.

142. *Id.* at 40.

143. Colson, *supra* note 78, at 91.

144. *Id.* at 100.

145. Holmes, *supra* note 5, at 342.

146. *Tunis. v. Libya* at 134-35.

continental shelf are governed by distinct legal regimes.¹⁴⁷ As noted previously, the Arctic has generated very little interest historically; the region has largely been left to indigenous people who call the region home.

Various Arctic countries may also try to assert coastline proportionality, a method of delimitation used in *Libya v. Malta*.¹⁴⁸ In the Arctic, coastline proportionality could be advanced by calling on “sector theory,” a historic method of claiming territory around the poles. Under sector theory, a country may assert sovereignty over a pie-shaped wedge formed by extending lines of longitude from its coast to the pole.¹⁴⁹ Russia and Canada have both been strong proponents of sector theory, arguing that the ocean within each nation’s sector becomes internal waters subject to their exclusive control.¹⁵⁰ The United States has historically opposed sector theory, as Alaska represents a narrow shoreline and sector theory tends to favor those countries with the longest coastlines.¹⁵¹ This method of demarcation does not require geologic evidence gathering from deep-sea ridges, and will provide each Arctic country an expansion in territory.

While the ICJ has some experience dealing with continental shelf issues, non-binding dispute resolution is the norm in the international sphere. However, even if the parties choose to act outside the International Tribunal for the Law of the Sea or the International Court of Justice, UNCLOS would still probably apply. UNCLOS has gained almost universal ratification, and those countries that remain as hold-outs recognize the Convention as a codification of customary international law. Thus, an international arbitral tribunal or mediator would almost certainly use UNCLOS if the Arctic nations chose a non-binding resolution process.

C. Arctic Council

The Arctic Council is another forum that could offer resolution to Arctic territorial disputes. The Ottawa Declaration formally established the Arctic Council in 1996 as an international body designed to deal with problems in the region, but currently it only addresses issues of sustainable development and environmental protection.¹⁵² Part of the reason for its silence on the most pressing concerns is a 1996 prohibition made by the United States that prevents the group from addressing security concerns, a prohibition that has thus far prevented the Arctic Council from addressing territorial demarcation of the region.¹⁵³ If the charter were reconstructed, however, the Arctic Council might prove a powerful tool in the creation of a new standard for the Arctic region. One of the major advantages of utilizing this international group is the consideration the Arctic Council already gives to the indigenous people of the region – including the Aleuts, Inuits, and Saami.¹⁵⁴ The Arctic has a population of over four million

147. *Id.*

148. Holmes, *supra* note 5, at 345.

149. *Id.*

150. Colson, *supra* note 78, at 97.

151. *Id.*

152. About Arctic Council, <http://arctic-council.org/article/about> (last visited Feb. 26, 2010).

153. Borgerson, *supra* note 4.

154. About Arctic Council, *supra* note 152.

people, including more than thirty different indigenous groups.¹⁵⁵ The people who currently live in the Arctic and have roots going back centuries deserve to have their opinions incorporated into future decisions. If indigenous people have a voice in the decision-making process, then they will be more likely to support policies and aid scientists with their ability to detect early or unnoticed impacts of climate change.¹⁵⁶ Thus, the concerns of indigenous people should be considered in any attempted resolution, whether through the Arctic Council or otherwise.

D. Arctic Treaty

The conflicts surrounding arctic resources and sea routes could also be resolved through treaty. A treaty could adjudicate sovereignty, postpone territorial disputes, and foster cooperation amongst signatories. One option is a limited treaty involving the North American countries. The other option is an expansive treaty involving all Arctic nations. In the wake of the aggressive Russian maneuvering that took place in 2007, some called for the United States, Canada, and Denmark/Greenland to enter into a limited trilateral treaty that would exercise joint jurisdiction over any potential North American Arctic shipping.¹⁵⁷ This treaty could be designed to counteract Russian control over the region, and would allow the free passage of vessels from the United States through the Northwest Passage. A treaty such as this could enact a policy that would allow countries to share responsibility for policing the Arctic waters as well as protecting the fragile Arctic environment.¹⁵⁸ Specific provisions within the treaty could be used to administrate the division of resources such as oil and natural gas. Moreover, a treaty of this kind would offset or even stop Russian expansionism and afford Canada and Greenland protection under the United States' military. However, a limited treaty such as this would contain drawbacks. Excluding Russia would leave measure of oversight for Russian use of the Arctic. Therefore, most experts advocate a multilateral treaty among all Arctic nations rather than the more limited trilateral treaty.

Multilateral treaties have already proved to be an effective way of resolving territorial disputes similar to the Arctic controversy. For 50 years, the 1959 Antarctic Treaty has regulated the sovereignty disagreements that previously plagued the southern polar region and has preserved the region as a global commons area.¹⁵⁹ The success of the Antarctic Treaty is often attributed to its expansive membership. The Antarctic Treaty quickly became a legitimate document because twelve major powers ratified it immediately after its creation.¹⁶⁰

155. *Id.*

156. Erika M. Zimmerman, Comment, *Valuing Traditional Ecological Knowledge: Incorporating the Experiences of Indigenous People into Global Climate Change Policies*, 13 N.Y.U. ENVTL. L. J. 803, 827 (2005).

157. Dianne DeMille, *Steerage and Stewardship: US, Canada, & Denmark/Greenland Should Join Forces to Guard the North American Side of the Arctic*, CAN. AM. STRATEGIC REV. (2008) available at <http://www.casr.ca/ft-arctic-trilateral-treaty-1.htm>.

158. *Id.*

159. The Antarctic Treaty Dec. 1, 1959, 12 U.S.T. 794, 402 U.N.T.S. 71.

160. British Antarctic Survey, *The Antarctic Treaty: Background Information*, <http://www>.

Since its inception, more than 40 states have ratified the Antarctic treaty, thus cementing its goal of promoting peace and science.

The Arctic and the Antarctic nations share four common goals: continued scientific investigation, preservation of territorial sovereignty, national security, and environmental protection.¹⁶¹ In Antarctica, these goals have been achieved through the unique provisions of Article IV of the Antarctic Treaty.¹⁶² Article IV suspended all territorial rights to the Antarctic, but also stated that signing the Treaty did not represent “a renunciation or diminution by any Contracting Party of any basis of claim to territorial sovereignty in Antarctica.”¹⁶³ Part 2 of Article IV also states no country may make new claims of territorial sovereignty while the treaty is in force.¹⁶⁴ The treaty has been successful because no party has been allowed to advance their claims, but at the same time no party has been forced to renounce their claims.

Article IV has undoubtedly been essential to the Antarctic Treaty, and if an Arctic Treaty were created, the decision to include a similar clause would be a major and controversial choice. While the suspension of territorial rights in the Arctic may protect the environment, the countries in the region may hesitate to give up their claims on hydrocarbon fuels. Some critics argue the differences between the Arctic and Antarctic outnumber the similarities, and thus the Antarctic Treaty is an imperfect guide. Not only does the Antarctic lack the promise of readily accessible hydrocarbon resources, but the southern polar reaches are also removed from valuable trade routes and are far from any other continent.¹⁶⁵ Furthermore, the Arctic is an ocean while the Antarctic is a continent. The solutions that allowed the peaceful division of land may not be as successful in oceanic disputes over valuable waters.

While there are undeniable differences between the Arctic and the Antarctic, they are similar in that they are both fragile ecosystems needing protection. Moreover, the fact that the Arctic is closer to trade routes and continents means that it is even more subject to dispute and clearly designated ownership is all the more essential. Undoubtedly, Arctic nations will have a difficult time compromising, and it is possible that ‘soft law’ provisions may be the best way to reach a compromise. Any decision made must not only balance the competing sovereignty claims, but also assess long term environmental concerns as well.

CONCLUSION

The United States’ persistent refusal to ratify UNCLOS is somewhat surprising because the Convention’s negotiations concluded in 1982 and every

antarctica.ac.uk/about_antarctica/geopolitical/treaty/ (last visited Jan. 23, 2010).

161. Melissa A. Verhaag, Note, *It Is Not Too Late: The Need for a Comprehensive International Treaty to Protect the Arctic Environment*, 15 GEO. INT’L ENVTL. L. REV. 555, 558-59 (2003).

162. See, Rothwell, *supra* note 110, at 364-65. Antarctic Treaty *supra* note 159, art. IV.

163. Antarctic Treaty *supra* note 159, art. IV.

164. *Id.*

165. Borgerson, *supra* note 4.

other major industrialized country has ratified it.¹⁶⁶ Presumably, the United States' position is rooted in the negotiation of the Convention that took place in the 1970's. At that time, the UN proposed arrangements for the sharing of technical mining information with a new International Seabed Authority.¹⁶⁷ The United States – a leader in the development of the technologies necessary for deep sea mining – was unwilling to divulge its practices, and thus refused to sign the Convention.¹⁶⁸ Even though the provision was dropped in 1994, the United States has yet to endorse UNCLOS despite numerous calls for the ratification from within the country and abroad.¹⁶⁹ It appears that a few U.S. Senators remain the last holdouts of resistance to the Convention – blocking its ratification.

Can UNCLOS be considered a powerful international agreement if the United States has not ratified it? Legitimacy relies on the internalization of external standards to substantiate the belief by an actor that a rule or institution ought to be obeyed. In the international sphere, very few laws or organizations have obtained recognition and approval of all countries. Because so few bodies govern the relations between states, any breach to the legitimacy of those bodies is clearly significant. Despite the destabilizing effect of the United States' non-ratification of the UNCLOS, 157 countries and the European Community have joined in the Convention.¹⁷⁰ Moreover, in many areas, UNCLOS codifies preexisting customary international law of the sea that the United States already recognizes.¹⁷¹ Therefore, while non-ratification may weaken the UNCLOS, at the moment, it appears the rest of the world accepts the Convention as legitimate. UNCLOS will play an essential role in resolving disagreements in the Arctic, and it is critical for the United States ratify UNCLOS in the very near future.

This paper began with an explanation of climate change and Arctic ice melt because predictions about future developments in the region rely on a basic understanding of these forces. As the ice melts, the Northwest Passage and the Northern Sea Route will become viable routes for summer shipping – opening the region to a new reality. Merchants as well as politicians are calculating the dangers as well as the potential cost reductions associated with northern shipping routes. As the technology and infrastructure develop in the Arctic, it may become

166. "Status of the United Nations Convention on the Law of the Sea, etc.," Division for Ocean Affairs and the Law of the Sea, http://www.un.org/Depts/los/convention_agreements/convention_agreements.htm, accessed Jan. 17, 2010.

167. JAMES MORELL, *THE LAW OF THE SEA: AN HISTORICAL ANALYSIS OF THE 1982 TREATY AND ITS REJECTION BY THE UNITED STATES*, 96 (1992).

168. *Id.*

169. Former President Bush urged Congress to ratify the Convention in 2007. See, Press Release, Office of the Press Secretary, President's Statement on Advancing U.S. Interests in the World's Oceans (May 15, 2007) available at <http://georgewbush-whitehouse.archives.gov/news/releases/2007/05/20070515-2.html>. Secretary of State Clinton noted that the ratification of the Law of the Sea treaty was long overdue in her Senate Confirmation hearing. *Transcript of Hillary Clinton's Confirmation Hearing*, (Jan. 13, 2009), available at http://www.cfr.org/publication/18225/transcript_of_hillary_clintons_confirmation_hearing.html.

170. "Status of the United Nations Convention on the Law of the Sea, etc.," *supra* note 166.

171. GERARD J. MAGONE, *LAW FOR THE WORLD OCEAN* 40 (1981).

possible to utilize the region's rich natural resources. It is this prospect that has generated the most excitement among Arctic nations and precipitates the need for an effective legal regime in the area. It is my belief that UNCLOS and the Commission on Continental Shelves can provide the legal mechanisms necessary to delineate sovereignty over the continental shelves and ownership of the resources that may be discovered there. UNCLOS will inform the debates about the Northwest Passage; implicating the future of international trade. Finally, any dispute resolution in the Arctic would likely either involve a UNCLOS body, such as the International Tribunal for the Law of the Sea, or an application of UNCLOS principles. The United States' non-ratification of the Convention acts as a major roadblock to advancing its national interests and settling the controversies in the region.

While it is probably already too late to prevent the Arctic ice melt, it is not too late to effectively resolve the sovereignty issues the melt will create. Thus far, the United States has not taken a significant role in the conflict or its resolution, but this type of ambivalence cannot continue as disputes escalate. Many suggest the United States join and support multilateral efforts that have already been established. Dispute resolution will be certainly be complicated and controversial; therefore, the full participation and engagement of all Arctic nations will be necessary. A geographical transformation of this magnitude has never occurred in the course of modern human history, and never has a physical change in landscape freed so many natural resources or created such new potential for trade. Therefore, it is essential that an adequate framework be developed to deal with these radical changes, and it is obvious that the framework needs not only the cooperation, but also the leadership of the United States.