Brooklyn Journal of International Law

Volume 43 | Issue 1 Article 28

12-12-2017

An Arctic Peril: The Pitfalls and Potential of a Fragmentary Polar Law

Erik Vande Stouwe

AN ARCTIC PERIL: THE PITFALLS AND POTENTIAL OF A FRAGMENTARY POLAR LAW

INTRODUCTION

On May 28, 2008, representatives from Canada, Denmark, Norway, the Russian Federation, and the United States convened in the remote ice-bound city of Ilullisat, Greenland to issue a short, but decisive, statement regarding the future of international law in the Arctic Circle.[1] This was known as the Ilulisat Declaration, and its basic tenet was that The United Nations Convention on the Law of the Sea (UNCLOS),[2] despite being unratified by the United States, was sufficient to govern the Arctic Ocean.[3] The 1982 UNCLOS, the product of "the largest and most complex international negotiation ever held," codified thousands of years of maritime custom and international relations.[4] These nations decided at Illulisat that there is no need for a polar-specific regime.[5]

The Arctic Circle begins sixty-six degrees north of the equator and encompasses 8 percent of the Earth's surface and 15 percent

---

1. *See The Ilulisat Declaration*, OCEANLAW.ORG (May 28, 2008), http://www.oceanlaw.org/downloads/arctic/Ilulissat_Declaration.pdf. [hereinafter ILULISAT].

2. *See* United Nations Convention on the Law of the Sea, Dec. 10, 1982, 1833 U.N.T.S. 3 [hereinafter UNCLOS].

3. *See* ILULISAT, *supra* note 1. ("This framework provides a solid foundation for responsible management by the five coastal States and other users of this Ocean through national implementation and application of relevant provisions. We therefore see no need to develop a new comprehensive international legal regime to govern the Arctic Ocean. We will keep abreast of the developments in the Arctic Ocean and continue to implement appropriate measures."). *See also* Satya N. Nandan, *Panel I Introductory Remarks: Overview of Changes in the Arctic Environment and the Law*, *in* CHANGES IN THE ARCTIC ENVIRONMENT AND THE LAW OF THE SEA 15 (2010).

4. *See generally* UNCLOS, *supra* note 2. *See also* Peter Prows, *Tough Love: The Dramatic Birth and Looming Demise of UNCLOS Property Law (and What Is to Be Done About It)*, 42 TEX. INT'L L.J. 241 (2007).

5. ILULISAT, *supra* note 1. Hari Osofsky, Jessica Shadian & Sara Fechtelkotter, *Arctic Energy Cooperation*, 49 U.C. DAVIS L. REV. 1431, 1448 (2016). *See also* Monique Andree Allain, *Canada's Claim to the Arctic: A Study in Overlapping Claims to the Outer Continental Shelf*, 42 J. MAR & COM. 1, 4 (2011).

of its land.[6] The region spans twenty-four time zones and twenty million square kilometers.[7] The Arctic Ocean, the smallest of the world's oceans, lies within and covers fourteen million square kilometers.[8] Much of the ocean was for the greater part of human history completely inaccessible, but in the last three decades, as a result of anthropogenic climate change, Arctic sea ice has lost half its area and three quarters of its volume.[9] In a process known as the ice-albedo feedback loop, melting ice diminishes the overall albedo (solar reflection) of the planet and further contributes to global warming, especially amplifying the summer ice retreat.[10] The 2012 summer ice pack covered half the area it did in 2000.[11]

The resulting rise in sea levels has threatened coastal populations from the South-Pacific to the American gulf coast, and rapid changes in the Arctic ecosystem—shifting landscapes and dwindling biodiversity—have severely disrupted the traditional economy of the Inuit people, the largest of the three groups of hyperborean indigenous peoples.[12] Species native to the Arctic face existential challenges. Polar bears, who live on drifting sea ice during hunting season, contend with starvation as their hunting ice disappears; Peary caribou have been unable to access their tundra grasses through the crusty snow formed by warming; and killer whales have been feeding on otters because sea lions and seals have followed changing fish migrations out

6. Scott Borgeson, *The Coming Arctic Boom: As the Ice Melts, the Region Heats Up*, FOREIGN AFF. 76, 80 (2013), http://boulder-wadg.org/misc/TheComingArcticBoom.pdf.

7. Melissa Renee Pegna, *U.S. Arctic Policy: The Need to Ratify a Modified UNCLOS and Secure a Military Presence in the Arctic,* 44 J. MAR. & COM. 169, 170 (2013).

8. David Balton, *Ocean Governance in the High North*, 139 PROCEEDINGS MAG. 325, 325 (2013).

9. Borgeson, *supra* note 6, at 28. ("Climate change is redrawing the physical face of the Arctic.").

10. Clara Deser et al., *Arctic Sea Ice Variability in the Context of Recent Atmospheric Circulation Trends*, 13 J. CLIMATE 617, 617 (2000).

11. Osofsky et al., *supra* note 5, at 1431.

12. Sophie Theriault, *Northern Frontier, Northern Homeland: Inuit People's Food Security in the Age of Climate Change and Arctic Melting*, 15 SW. J. INT'L L. 223, 224–26 (2009).

of the whales' habitat range.[13] Climate change's effect on Arctic fisheries is far more difficult to predict.[14] Thermohaline circulation can vary immensely from season to season and year to year, and fish populations are plugged into so many distinct ecosystems that predicting the effect of warming on one cannot take into account changes in the others.[15] Whatever the case, Arctic states stand to gain, at least in the short term, far more than they can expect to lose. The Arctic Ocean now stands poised to become, in the words of one expert, "an emerging epicenter of industry and trade akin to the Mediterranean Sea."[16]

Despite its global relevance, the Arctic's future has been increasingly dominated by the following five powerful coastal nations: Norway, Sweden, Canada, the Russian Federation, and the United States.[17] The region's thirty different indigenous groups, representing over four million people, were ignored in the drafting of the Ilullisat Declaration and remain disenfranchised in Arctic soft-power organizations.[18] Nevertheless, the coastal states have asserted that UNCLOS is sufficient to meet the needs of the Arctic Circle, its people, economy, and environment.[19] Paradoxically, despite insoluble disagreements and rivalries, the coastal states are determined to maintain the legal status quo in the Arctic.[20]

This Note will analyze the legal infrastructure governing the opening of the Northwest and Northeast shipping lanes in the twenty-first century.[21] It will argue that the current legal regime

---

13. David Vanderzwaag, Rob Huebert & Stacy Ferrara, *The Arctic Environmental Protection Strategy, Arctic Council and Multilateral Environmental Initiatives: Tinkering while the Arctic Marine Environment Totters,* 30 DENV. J. INT'L L. & POL'Y 131, 141–43 (2001).

14. Jennifer Jeffers, *Climate Change and the Arctic: Adapting to Changes in Fisheries Stocks and Governance Regimes*, 37 ECOLOGY L.Q. 917, 936 (2010).

15. *Id.*

16. Borgeson, *supra* note 6, at 28.

17. Albert Buixadé Farré et al., *Commercial Arctic Shipping through the Northeast Passage: Routes, Resources, Governance, Technology, and Infrastructure,* 37 POLAR GEOG. 298, 306 (2014).

18. Tessa Mendez, *Thin Ice, Shifting Geopolitics: The Legal Implications of Arctic Ice Melt,* 38 DENV. J. INT'L L. & POL'Y 527, 543–44 (2010).

19. ILULISAT *supra* note 1.

20. Rob Huebert, *Cooperation or Conflict in the Arctic?*, *in* CHANGES IN THE ARCTIC ENVIRONMENT AND THE UNITED NATIONS CONVENTION OF THE LAW OF THE SEA 28 (2010).

21. The Northwest Passage, which takes its name from the fabled prize of early American explorers, refers loosely to shipping lanes running through the

is insufficient to meet the environmental, economic, military, and political challenges that the melting of the Arctic ice-cap presents. Specifically, this Note will focus on the legal problems attendant to the variously categorized maritime zones in the Arctic Ocean and explore the advantages and disadvantages of a patchwork system of institutions and laws. The current legal infrastructure provides insufficient guidance on economic, territorial, regulatory, and political dispute resolution. In response, stake-holding countries must negotiate a multilateral treaty amending the charter of the Arctic Council, the region's main international organization, to provide a more comprehensive mandate to resolve these problems.

Part I of this Note will explore the growing commercial, political, and strategic importance of the Arctic region and the potential for conflict such rapid climate change engenders. It will also examine the natural resources, fossil fuels, fish, and minerals that are drawing states to compete over Arctic access, while introducing the nascent shipping routes that pit freedom of navigation against national sovereignty. Part II will explain the problems of the current legal regime governing the Arctic, including the difficulty of determining which straits are international and which are internal, where coastal continental shelf ends and the Common Heritage of Mankind seabed begins, and how aggressively a coastal state may regulate shipping that passes through its Exclusive Economic Zone (EEZ). Finally, Part III will lay out a treaty-based solution to the region's myriad legal shortcomings. The proposed treaty system would vest legislative, adjudicative, and enforcement powers in newly inclusive and globally accountable Arctic Council institutions.

I. AN OCEAN IN FLUX

This Part will describe the breakneck speed of the Arctic's changing commercial, political, and morphological reality. As the waters warm, glaciers melt, and summers lengthen, Arctic ecosystems are changing dramatically and threatening the livelihoods of many who depend on Arctic natural resources. This

---

Arctic waters North of Canada. Farré et al., *supra* note 17, at 299. The Northeast Passage is an even broader term for the shipping routes that run across the Northern flank of Russia, connecting Europe and Asia through the Arctic. *Id.* The term is used interchangeably with the Russian term, the Northern Sea Route. *Id.*

Part will describe the helter-skeleter dash to establish influence in the cryospere. It will articulate why and how nations are rushing to fill the power vacuum that melting sea ice has opened up and introduce the territory at stake in the jurisdictional disputes between coastal nations.

The promise of a seasonally ice-free Arctic within twenty years has spurred hope in the Northwest and Northeast passages as viable global shipping routes. [22] Despite inroads made by air and ground transport, maritime shipping represents between 80 percent and 90 percent of global trade.[23] Much of this passes through the Suez Canal, around the Cape of Good Hope, or through the Panama Canal.[24] This is unlikely to change anytime soon. Neither the Northeast, nor Northwest passages, have emerged as significant rivals to these routes.[25] Several obstacles remain. Ice patterns vary dramatically month to month and year to year, and since container ships operate on a "just-in-time" system designed to maximize efficiency, unpredictability often amounts to commercial unfeasibility.[26]

An ice-free Arctic, however, promises more predictable schedules.[27] Ships will no longer have to contend with unpredictable ice floes. Meanwhile, the possibility of navigable shipping routes has already stimulated investment in resource extraction within the Arctic Circle.[28] Ships plying the Northeast Passage, which runs through the Novaya Zemlaya Sea, will cover 24 percent less distance from Shanghai to Rotterdam than those which pass through the Suez Canal.[29] In the summer of 2013, the 19,000 ton cargo vessel, the Yong Shen, shaved off 5,700 nautical miles, or 60 percent of its route, by using the Northeast Passage in transit

22. Colonel Todd L. Sharp, *The Implications of Ice Melt on Arctic Security,* 11 DEFENSE STUD. 297, 299 (2011). Theriault, *supra* note 12, at 224–26.

23. Sharp, *supra* note 22, at 298–300.

24. *Id.*

25. *Id.*

26. Farré et al., *supra* note 17, at 302. Tight financial margins require a just-in-time system to eliminate any inefficient waiting time in a ship's schedule. *Id.*

27. *Id.*

28. *Id.*

29. This passage is neither a single route nor a static concept. *See* Christopher R. Rossi, *Russian Arctic Straits and the Temptation of Uti Possidetis,* 24 TRANSNAT'L L. & CONTEMP. PROBS. 19, 19–22 (2014). *See also The Water Area of the Northern Sea Route*, NORTHERN SEA ROUTE ADMIN, http://www.nsra.ru/ru/ofitsialnaya_informatsiya/granici_smp.html (Russ.).

from Dalien to Rotterdam.[30] The northern route saved $600,000 USD worth of fuel and avoided the risk of piracy that plagues more southern seas.[31] For now, Russian icebreaker support is expensive and ice floes are unpredictable, but the economics of the passage could change dramatically in the next two decades.[32] A burgeoning marine tourism industry is already moving into the Arctic, a development made ironic by the contributions cruise-ships and air travel have made to the global warming that is opening up previously inaccessible portions of the polar regions.[33]

The intersection of developing nautical technologies with melting ice sheets may also make transport of people and goods more profitable.[34] For example, Samsung's Azipod propeller mechanism—a propeller capable of 360-degree rotation and an icebreaker prow attached to the "back" of a ship—can transform a standard blue-water vessel into an icebreaker capable of breaking through 1.5 meters of ice.[35] Maersk is currently constructing seven ice-class container vessels to be built by COSCO Shipyard Company in Zhousan, China, to trade in Northern Europe.[36] Prior to such developments, commercial shipping vessels universally required ice-breaker escorts to travel safely in icy waters.[37] Lifting this cost from shipping operations will greatly increase the feasibility of trans-Arctic shipping.

The growth in Arctic shipping will also be spurred by direct resource exploitation in the Arctic Ocean itself, which provides a further incentive for coastal states to cultivate their territorial

30. Rossi, *supra* note 29, at 19.

31. *Id.* at 19–20.

32. *Id.* at 62–64.

33. Mary Edes, *Ecotourism in the Arctic Circle: Regional Regulation is Necessary to Prevent Concerned Environmentalists from Further Contributing to Climate Change*, 21 PAC. MCGEORGE GLOBAL BUS. & DEV. L.J. 251, 252–53 (2008).

34. Huebert, *supra* note 20, at 48.

35. *Id.*

36. Jeanne L. Amy, *Historically Iced Out: Calling on the United States To Resolve Its International Law Disputes in the Arctic Ocean,* 40 TUL. MAR. L. J. 137, 155 (2017).

37. Huebert, *supra* note 20, at 48.

claims over the Arctic.[38] Indeed, the region presents an enormous opportunity for hydrocarbon extraction.[39] The U.S. Geological Survey has estimated that the ocean may hold 13 percent of the world's undiscovered oil and 30 percent of its undiscovered natural gas.[40] Much of this will become extractible for the first time as the ice sheets recede.[41] Further, recent advances in ship-design and extraction technology allow oil and gas companies to access hydrocarbons where previously impossible.[42] For countries deeply anxious about their energy independence, the Arctic represents a promise of energy security well into the twenty-first century.[43]

Less spoken of, but perhaps just as promising, heavy metal mining has a promising future across the world's oceans.[44] Technological breakthroughs, specifically in the field of hydraulic mining systems, are allowing companies to access minerals thousands of meters below the surface.[45] Mining companies have been laying claim to various sites thought to be promising in polymetallic nodules, valuable ores of manganese, iron hydroxides, and diamonds.[46] Even the cold itself may be a promising resource, for it offers ample cooling potential for servers and digital storage centers that typically require expensive HVAC infrastructure. Facebook, for instance, recently opened a data storage center in northern Sweden.[47]

The most prized resources of the Arctic, however, are those that have been exploited for the longest amount of time. Arctic fisheries represent some of the most promising resources in the

38. Vanderzwaag et al., *supra* note 13, at 300.

39. *Id.*

40. Sharp, *supra* note 22, at 297.

41. Pegna, *supra* note 7, at 170.

42. Brian Spielman, *An Evaluation of Russia's Impending Claim for Continental Shelf Expansion: Why Rule 5 Will Shelve Russia's Submission*, 23 EMORY INT'L L. REV. 309, 341–48 (2009).

43. *Id.*

44. INT'L SEABED AUTHORITY, POLYMETALLIC NODULES, https://www.isa.org.jm/files/documents/EN/Brochures/ENG7.pdf.

45. *See generally* S.A. Schulte, Vertical Transport Methods for Deep Sea Mining (June 19, 2013) (unpublished M.A. thesis, Delft University of Technology Section of Dredging Engineering), https://repository.tudelft.nl/islandora/object/uuid:86da5533-5a17-4c06-b725-1022794f0d84/datastream/OBJ/download.

46. Huebert, *supra* note 20, at 29.

47. Borgeson, *supra* note 6, at 81–82.

world.[48] The Arctic has always been a rich source of cod, pollock, salmon, squid, crab, and shrimp.[49] Recently, however, as global ocean temperatures have increased, fish populations have begun migrating even further north.[50] Lucrative fisheries are behind the U.S.-Canadian dispute over a 6,000 square-mile wedge of the Beaufort Sea.[51] A similar fish-fueled conflict has kept Russia and Norway at loggerheads over the waters of the Svalbard Islands.[52] Shipping, fossil fuels, mining, tourism fishing, and even the climate itself, all represent jewels in the Arctic crown over which its coastal nations now vie.

The Arctic, in short, has gone from a no man's land to a promising frontier.[53] As economic opportunities have drawn political and strategic focuses north, long frozen border disputes have begun to thaw.[54] All eight coastal Arctic nations firmly insist on weak circumpolar institutions, blurry maritime boundaries, promising resource bases, and developing nautical technology.[55] All of these nations, however, provide an alarming backdrop for what may be the initial stages of an Arctic military build-up.[56] The Russian Federation has commissioned eight new ballistic missile nuclear submarines and continues to build large nuclear icebreakers.[57] In 2008, it resumed naval patrols in disputed seas north of Norway to "protect Russian fishermen in the area."[58] Norway has equipped five new frigates with the top-of-the-line Aegis class aerial defense and its newest frigate carries a Bofor 57-mm cannon.[59] Denmark has recently finished four ice-capable frigates of the Thetis class with anti-air and anti-submarine capabilities, and its ice-capable patrol vessels of the Knud Rammsen series are designed to quickly accept 76-mm main guns, Sparrow missile launchers and anti-submarine torpedo

48. Daud Hassan, *Climate Change and the Current Regimes of Arctic Fisheries Resources*, 40 J. MAR. L. & COM. 511, 513–14 (2009).

49. In addition, scallops, sablefish, perch, halibut, sole, atka, flatfish, and turbot can also be found in these waters. *Id.*

50. Pegna, *supra* note 7, at 171.

51. Sharp, *supra* note 22, at 307.

52. *Id.* at 308.

53. *Id.*

54. *Id.*

55. Huebert, *supra* note 20, at 40–50.

56. *Id.*

57. *Id.*

58. *Id.*

59. *Id.*

tubes.[60] Rather than develop their navies, Sweden and Finland have deepened their ties with the North Atlantic Treaty Organization, permitting major exercises on their territory.[61] Canada has also taken Arctic security very seriously, employing a veritable fleet of icebreakers, frigates, and offshore patrol vessels, along with a training base for Canadian Rangers in Resolute, Canada, and 24-hour satellite coverage of the Canadian high north (Radarsat II).[62] Ironically, only the United States, with four aging and sometimes out-of-commission icebreakers, has opted not to build up its ice-capable fleet, to the dismay of some military commentators.[63] The Admiral of the U.S. Coast Guard, Paul Zukunft, warned of the Russian presence in the Arctic:

> They've made a strategic statement and they've got all their chess pieces on the board right now. . . . Right now we've got maybe a pawn and maybe a rook. . . . If you look at this Arctic game of chess if you will, they've got us at checkmate.[64]

As one military analyst cautions, however, this does not make the Arctic a "Hobbesian free-for-all with dangerous potential for conflict."[65] Rather, parties have demonstrated a remarkable willingness to bind their claims to international law.[66] Political goodwill, transparent cooperation between state agencies, acceptance of shared science-based outlooks on the region, and international institutions all militate towards peaceful dispute resolution.[67] Rapprochement and diplomacy, rather than unilateral seizure, have characterized Arctic border disputes.[68] UNCLOS, for its part, provides a flexible battery of dispute resolution mechanisms—a "complex third party settlement system," which includes the International Tribunal on the Law of

60. *Id.*
61. *Id.*
62. Huebert, *supra* note 20, at 40–50.
63. Rossi, *supra* note 29, at 24.
64. Admiral Paul F. Zukunft, Commandant, U.S. Coast Guard, On America's Arctic Frontline (May 3, 2017), https://www.csis.org/events/americas-arctic-frontline-conversation-admiral-paul-f-zukunft-commandant-us-coast-guard.
65. Sharp, *supra* note 22, at 308.
66. *Id.*
67. Huebert, *supra* note 20, at 29–33.
68. Sharp, *supra* note 22, at 308.

the Sea, the International Court of Justice (ICJ), and special arbitration before technical experts.[69] Such institutions have thus far managed to head off any more explicit confrontations over disputed maritime rights.[70] Nevertheless, the draw of new resources and shipping opportunities has put immense stress on existing legal instruments to peaceably resolve attendant conflicts.

II. FAILURES OF THE CURRENT LEGAL ORDER

While a complicated web of legal arrangements is beginning to envelop the Arctic Circle, much in the cryosphere remains largely uncovered by law.[71] This Part will describe the limitations of UNCLOS when it comes to adjudicating disputes in the Arctic Ocean. Specifically, this Part will focus on the ambiguity attendant to international conceptions of internal waters, territorial seas, exclusive economic zones, continental shelf extensions, and administratively special "frozen waters." This complicated and motley patchwork of legal categories fails to adequately provide for conflict resolution or environmental protection.

A. Questions of Sovereignty: Internal Waters and Territorial Seas

The prevailing international law of internal waters and territorial seas gives insufficient guidance on which shipping lanes fall within or without coastal states' sovereignty, as well as what the right of innocent passage[72] through those waterways entails.[73] Internal waters can be delimited by straight baselines, which are boundary marker lines between defined points of reference in accordance with UNCLOS Article 7.[74] According to Article 7, a non-archipelagic state can only draw straight baselines past its coastal low-tide marker "in localities where the coastline

69. John Noyes, *Judicial and Arbitral Proceedings and the Outer Limits of the Continental Shelf*, VAND. J. TRANSNAT'L L. 1211, 1214–15 (2009).

70. Huebert, *supra* note 20, at 29–33.

71. Anna Maria Thoren, "Article 234, UNCLOS and the Polar Code," 42–44 https://www.duo.uio.no/bitstream/handle/10852/42108/5071.pdf.

72. Passage is considered innocent or not according to UNCLOS Article 19, which excludes from the category of innocent passage such activities as the use of force, serious pollution, and fishing. *Id.* at 9.

73. Huebert, *supra* note 20, at 29–33

74. UNCLOS, *supra* note 2, art. 7.

is deeply indented and cut into" or "if there is a fringe of islands along the coast in its immediate vicinity."[75] An exception is made for archipelagic states in UNCLOS Article 50, which provides that an archipelagic state may draw straight baselines around its outermost islands, such that waters inside those baselines are internal waters.[76] Internal waters are important because, unlike territorial seas, they carry no right of innocent passage.[77] States are free to deny other states navigation rights in their internal waters.[78]

Drawing straight baselines around islands has been contentious in the Arctic well before UNCLOS.[79] In 1951, the ICJ decided, in the Fisheries Case,[80] that drawing baselines around islands was permissible under certain local conditions, but that such an act must be in accordance with international law, not merely a municipal act.[81] The ICJ reasoned that the Skjaergaard, a fjorded region surrounding island formations on the coast of Norway, was—by its jagged and erratic nature and traditional association with Norway—more suitably understood as internal waters of Norway than coastal waters.[82] The ICJ referenced both the "peculiar geography" of the Norwegian coast and England's own tacit acceptance of Norwegian sovereignty.[83] It remains to be seen, however, whether Russia and Canada have such compelling cases based on the peculiar geography of their own northern coasts, or whether the practice of other coastal states has effectively ceded them control.

Despite the narrow conditions for drawing straight baselines under UNCLOS, both Canada and the Russian Federation have

---

75. *Id.* art. 6

76. *Id.* art. 50.

77. FRANCIS NGANTCHA, THE RIGHT OF INNOCENT PASSAGE AND THE EVOLUTION OF THE INTERNATIONAL LAW OF THE SEA 26–27 (1990).

78. *Id.* at 26–29.

79. *Id.* at 27–30.

80. At stake in this case was where the boundary between Norway's territorial waters ended and high seas began, or, how close to Norway's coast British vessels could fish. *See* Fisheries (U.K. v. Norway), Judgment, 1951 I.C.J. Rep. 116, 126–28 (Dec. 18) [hereinafter Fisheries Case].

81. NGANTCHA, *supra* note 77, at 26–31. *See also* Fisheries Case, *supra* note 80, at 132 ("Although it is true that the act of delimitation is necessarily a unilateral act, because only the coastal State is competent to undertake it, the validity of the delimitation with regards to other States depends upon international law.").

82. Fisheries Case, *supra* note 80, at 132.

83. *Id.* at 139.

drawn straight baselines that cut through significant portions of the Northwest and Northeast Passages.[84] These claims may be without merit, however, for UNCLOS Article 46 defines an archipelagic state as one "constituted wholly by one or more archipelagos."[85] According to a U.S. ambassador tasked with designing UNCLOS, it would be unfeasible to recognize a Canadian right to archipelago status without recognizing that of other mainland coastal nations like Greece, or even the United States (for Hawaii and the Aleautian Islands).[86] Nevertheless, both states have maintained these claims based on what commentators have interpreted as historic title.[87] The ICJ, in the Fisheries Case, recognizes "waters which are treated as internal waters but which would not have that character were it not for the existence of a historic title."[88] The Norwegian Skjaergaard falls into such a category.[89] Historic possession of territory, *possessio longi temporis*, may also be territorialized under the Roman private law formulation, *uti possedetis, ita possideatis*, or, "as you possess, so may you possess."[90] Canada has demonstrated that it is willing to withdraw from the ICJ, as it did after ratifying Arctic Water Pollution Prevention Zones in 1970 in order to protect its historical title over northern archipelagic waters.[91] In 1985, before ratifying UNCLOS, the Russian Federation (then USSR) codified in its domestic law its claim over its northern waters as internal waters and drew straight baselines across much of its northern archipelagic waters.[92] Specifically, it claimed historic title over the following several "chokepoints" through which all transit must currently pass: the Vilkitsky and

84. ARCTIC COUNCIL, ARCTIC MARINE SHIPPING ASSESSMENT 2009 REPORT 51 (2009), http://www.pmel.noaa.gov/arctic-zone/detect/documents/AMSA_2009_Report_2nd_print.pdf [hereinafter AMSA].

85. John Norton Moore, *The UNCLOS Negotiations on Ice-Covered Areas*, *in* CHANGES IN THE ARCTIC ENVIRONMENT AND THE LAW OF THE SEA 23 (2010).

86. *Id.* at 24.

87. *See* DONAT PHARAND, CANADA'S ARCTIC WATERS IN INTERNATIONAL LAW 106–23 (1998).

88. Fisheries Case, *supra* note 80, at 130.

89. *Id.*

90. Rossi, *supra* note 29, at 50.

91. Canada was unclear on the legal foundation of its domestic legislation and decided it was safer to withdraw from ICJ jurisdiction, rather than risk an adverse judgment that could have far-reaching implications for its regulatory regime past its territorial seas. *See* Moore, *supra* note 85, at 20.

92. PHARAND, *supra* note 87, at 152–53; *see also* Amy, *supra* note 36, at 145.

Shokalsky Straits, the Dmitry Laptev and Sannikov Straits, and the Proliv Long Strait.[93]

There are powerful cultural, political, and historical reasons for both nations to take such stances.[94] Canada has always seen itself as a northern nation, and its Arctic character is a vital component of its national identity.[95] Several times during the late twentieth century when U.S. vessels have crossed too close to the Canadian Arctic Archipelago, such as the USS Manhattan's icebreaker mission in 1969, Canadian citizens and media have reacted with patriotic indignation.[96] Russia, for its part, has also taken great pride in its northern character, as over a million of its citizens and 20 percent of its GDP are located above the Arctic Circle.[97]

The United States and European Union have formally registered their disagreement with Canadian and Russian claims of internal waters over the Northwest and Northeast passages.[98] As these passages become increasingly accessible, shipping companies and flag states will be unclear whether their commerce in the Arctic exists by right of innocent passage or at the leisure of either the Canadian or Russian states.[99] This disagreement has the potential to be a flashpoint for greater conflict between the world's northern thalassocracies.[100] Less dangerous, but more inevitable, is that the difficulty in establishing the contours of states' internal waters will make it impossible to determine any of the other maritime zones operative beyond it.[101] The internal seas provide the starting point for the twelve nautical miles of territorial seas pursuant to UNCLOS Article 3, and from there, the 200 nautical miles of EEZ pursuant to Article 57.[102]

93. Rossi, *supra* note 29, at 31.
94. *Id.* at 28; PHARAND, *supra* note 87, at 120–24.
95. PHARAND, *supra* note 87, at 152–53.
96. *See* Amy, *supra* note 36, at 142–44. *See also* Rossi, *supra* note 29, at 19–20.
97. Rossi, *supra* note 29, at 26.
98. Thoren, *supra* note 71, at 31.
99. *Id.* at 26.
100. Rossi, *supra* note 29, at 33.
101. UNCLOS, *supra* note 2, art. 3, 57.
102. *Id.*

Internal and territorial waters overlap at the following five junctions in the Arctic region: Norway-Russia, Canada-Denmark, Canada-U.S., Denmark-Russia, and Canada-Russia.[103] At the heart of all these disputes is a question of whether modern international law or more ancient bilateral treaties or historical titles should govern maritime jurisdiction. For instance, Norway and Russia disagree over whether the Spitsbergen Treaty of 1920, which provides Norway with administrative and fishing rights over the Svalbard Islands, should allow Norway to measure its EEZ from the shores of the Svalbard Islands.[104] Russia also seeks to use the sector line to divide waters off of the Svalbard Islands, whereas Norway would prefer the sector line, putting 175,000 square kilometers of prime fisheries in dispute.[105] Even stalwart allies like Canada and the United States have found themselves disagreeing over possession of lucrative fishing grounds.[106] The Beaufort Sea dispute turns on dueling interpretations of the 1825 Treaty of Saint Petersburg, which reads, "the said meridian line of 141deg W in its prolongation as far as the Frozen Ocean."[107] Canada construes the 141st meridian to define the boundary as continuing into the Arctic Ocean, based on context and purpose of the treaty, whereas the U.S. construes it as until the shores of that Ocean, at which point the Equidistance Rule would apply.[108] As a result, a large swathe of the Beaufort Sea is contested and both countries endure a fishing moratorium.[109]

Territorial waters are probably the oldest form of maritime zone.[110] The idea of a *mare clausum* doctrine has existed since Roman times, falling in and out of fashion with mercantilistic interests in free trade and fear of pirates.[111] The concept was eventually crystallized in the rule of Dutch jurist Cornelius van Bynkershoek: *Potestatem terrae finiri, ubi finitur armorum vis*, which translates as, "a country's territorial sea extends as far as

103. Brian J. Van Pay, *National Maritime Claims in the Arctic*, *in* CHANGES IN THE ARCTIC ENVIRONMENT AND THE LAW OF THE SEA 71 (2010).
104. *Id.* at 67.
105. *Id.* at 71.
106. Amy, *supra* note 36, at 152–53.
107. *Id.* at 147–48.
108. Van Pay, *supra* note 103, at 75.
109. *Id.*
110. NGANTCHA, *supra* note 77, at 15.
111. *Id.* at 116–17.

the shot of a cannon."[112] This was eventually considered three nautical miles.[113] By 1956, the International Law Commission would write in a report to the General Assembly of the United Nations that the extension of territorial seas between three and twelve miles had become state practice.[114] Eventually, UNCLOS codified a twelve nautical mile territorial sea and a twelve nautical mile contiguous zone beyond that, making an altogether twenty-four nautical mile zone of control.

This concept of territory, however, has undergone much legal dispute.[115] Territorial seas have endured a push and pull between being considered, in Grotius' dichotomy, *dominium*, over which states exercise ownership, and *imperium*, over which states only have jurisdiction connected with piracy and prize-making.[116] This contest has been written into UNCLOS, which allows sovereignty over a state's territorial seas, but carves out a significant exception for innocent passage, and an even more glaring exception for innocent passage through an international strait.[117] Currently, a state's territorial waters, which begin seaward off its coastline or straight baselines, must remain open to the innocent passage of ships flying other states' flags.[118] This right, however, extends only to civilian surface transport.[119] Military uses of the strait, overflight, and submarine transit are all forbidden without the consent of the coastal state.[120] Even this accomodation to coastal sovereignty, however, is restricted where the strait through which ships pass is an international strait between high seas.[121] International straits also allow unfettered aircraft overflight, and, in no event, can the right of innocent passage be suspended.[122] Much therefore depends on whether the Northwest and Northeast shipping routes are to be

112. *Id.* at 15–16.
113. *Id.* at 16.
114. *Id.* at 16.
115. Olya Gayazova, *China's Rights in the Marine Arctic,* 28 INT'L J. MARINE & COASTAL L. 61, 67 (2013).
116. NGANTCHA, *supra* note 77, at 16–26.
117. *Id. See also* HUGO CAMINOS & VINCENT P. COGLIANTI-BANTZ, THE LEGAL REGIME OF STRAITS 227 (2014).
118. UNCLOS, *supra* note 2, art. 54.
119. NGANTCHA, *supra* note 77, at 16–26.
120. Thoren, *supra* note 71, at 9.
121. NGANTCHA, *supra* note 77, at 16–26.
122. Thoren, *supra* note 71, at 26–27.

considered international straits.[123] The United States and European Union both contend that the varying routes through the 19,000-island Canadian Arctic Archipelago, and the equally sprawling Russian Northern Sea Route, are international straits between two high seas[124] within the meaning of UNCLOS Article 37, affording other states the rights of uninterrupted passage, submarine and aircraft carrier use, and unconsented-to military transit.[125]

UNCLOS Article 37 may or may not require Canada and Russia to temper their claims of sovereignty over their northern territorial waters.[126] Certain scholars have argued that given the functional difficulty of traversing the Northern Sea Route, the designation of international strait may be inappropriate.[127] Other commentators have agreed that a "certain level of actual use" was necessary for the designation.[128] Dicta in the English translation of the Corfu Channel Case, which turned on, *inter alia*, whether Albania had a right to mine a portion of water off of its own coast, suggest that the passageway's geographical situation between two high seas is more important than use, whereas the equally authoritative French translation gives equal weight to use and geography.[129] This is important, for due to Soviet and then Russian rules of mandatory ice-breaker escort and pilotage, the Northern Sea Route may almost never have been freely used.[130] In 1976, the United States commissioned two Coast Guard icebreakers, Edisto and East Wind, to circumnavigate the Arctic Ocean by sailing through the Russian North Sea

123. *Id.*

124. High seas, for their own part, are global commons. UNCLOS, *supra* note 2, art. 87.

125. Rossi, *supra* note 29, at 19–20. *See also* UNCLOS, *supra* note 2, art. 37.

126. *Id.* at 19–25.

127. *Id.* at 41.

128. *Id.* at 43.

129. Corfu Channel (Gr. Brit. & N. Ir. v. Alb.), Judgment, 1949 I.C.J. Rep. 4, 28 (Apr. 9) ("[T]he decisive criterion is rather its geographical situation as connecting two parts of the high seas and the fact of its being used for international navigation."). The use of the singular noun "criterion" suggests that the geographical character of the strait is paramount. *See also* DONALD ROTHWELL & TIM STEPHENS, THE INTERNATIONAL LAW OF THE SEA 209 (2016).

130. Rossi, *supra* note 29, at 43. Two certain exceptions are the journey of the Vega, piloted by the Finnish-Swedish explorer, Adolf Erik Nordenskjold in 1878–79, and the Maud, captained by the Norwegian Roald Amundsen in 1918–19. *Id.*

Route.[131] They were, however, denied permission to enter the Vilkitsky Strait, which ended their circumnavigation. Although the U.S. protested vigorously, the success of Russian power-projection over its Northern Sea Route has suggested that the Russian Federation has successfully annexed the sea route as per a sort of *uti posseditis*, or right by possession.[132] Indeed, only the United States has registered its objection to Russian claims of sovereignty.[133]

Further, now that UNCLOS Article 234 licenses a coastal state to take certain police powers over shipping in its EEZ, it is unclear how the requirement that ships in transit use highly expensive Russian pilots and icebreaker escorts squares with the rights of innocent passage through international straits.[134] One researcher, William Dunlop, studied forty-three straits in the Russian Arctic and concluded that all fit the criteria of straits used for international navigation under UNCLOS Article 37.[135] He concluded, however, that Russia had effectively nationalized the entire passage-way, protests notwithstanding, and that ships regularly queue for Russian permission before entering any of the straits, out of both respect for Russian authority and the need for ice-breaker and pilotage services.[136] The unanswered question is whether, once the ice-melt reduces the need for ice-breaker escorts, the Russian Federation can still require transit fees from passing ships, or whether the Article 37 law of international straits connecting two high seas will fully apply.[137]

Similarly, Canada vehemently disputes that its archipelagic seas constitute an international strait connecting two high seas.[138] Canada's dispute has focused on historical versus present use of the strait.[139] Canada maintains that custom defines the UNCLOS term "strait used for international navigation"[140] as a "strait historically used for international navigation," as op-

131. *Id.* at 37–43.
132. *Id.* at 37–43.
133. *Id.* at 65–67.
134. *Id.* at 45.
135. *Id.* at 42–46.
136. *Id.* at 45.
137. Rossi, *supra* note 29, at 56.
138. Moore, *supra* note 85, at 17–26.
139. *Id.*
140. UNCLOS, *supra* note 2, art. 34.

posed to a "strait capable of being used for international navigation."[141] Diplomatic dust-ups between the two countries have pitted the American interest in guaranteeing unfettered commercial navigation against the Canadian interest in safeguarding its northern heritage.[142]

B. Questions of Regulation: Environmental Protection

The Arctic is protected by mainstream and side-stream regimes, with the mainstream regime being the polar-wide regulations promulgated by the Arctic Council, and the side-stream being the efforts individual countries have made to protect their northern shores under UNCLOS Article 234.[143] Article 234—granting regulatory prerogatives within that state's EEZ—and the Arctic Council—an international organization with a mandate to protect the region—do not, however, provide adequate legal mechanisms to protect the Arctic environment or its indigenous peoples, many of whom struggle not only with climate change but also with the depletion of local fisheries, dispossesion of historical territories, criminalization of traditional hunting methods, and pollution of their water, food, and soil.[144] While this Part will focus on the regulatory deficiencies of both UNCLOS Article 234 and the Arctic Council, it is necessary to first outline two of the gravest non-climate-change related threats to the Arctic.

First, Persistent Organic Pollutants (POPs) provide a unique danger to Arctic communities and their environment.[145] POPs travel north by long range atmospheric transport and accumulate around the pole.[146] They are also brought by drifting ice and migratory birds flying north in the summer who succumb to Arctic predators.[147] Pesticides[148] and industrial by-products become

141. Moore, *supra* note 85, at 23.

142. *Id.*

143. *See generally* KAMRUL HOSSEIN, *Governance of Arctic Ocean Marine Resources*, *in* CLIMATE CHANGE IMPACTS ON OCEAN AND COASTAL LAW (2015).

144. Huebert, *supra* note 20, at 28–29.

145. *See* Theriault, *supra* note 12, at 224–26 (detailing the well-known effects of pollution on Inuit food security).

146. *Id.*; Vanderzwaag et al., *supra* note 13, at 131–32.

147. *Id.*

148. Vanderzwaag et al., *supra* note 13, at 134. Pesticides include dieldrin, DDT, toxaphene, chlordane, and lindane. *Id.* Industrial compounds include polychlorinated biphenyls, hexachlorobenzene, and short-chained chlorinated paraffins. *Id.*

buried in permafrost and exposed during melts or biomagnified immediately in the food chain.[149] The sparse and skeletal food chains in the far north make concentrations of POPs in animal fat especially deleterious to their predators, including humans.[150] POPs are a problem of such global magnitude that they can hardly be confronted by the governments of individual coastal states. The Arctic Council has stepped in and organized research as part of the Arctic Environmental Protection Strategy.[151] For instance, the Draft Stockholm Convention on Persistent Organic Pollutants was finalized on December 10, 2000 and adopted by a Conference of Plenipotentiaries in Stockholm, Sweden on May 22–23, 2001.[152] Nevertheless, Arctic organizations have yet to develop a strategy to remove the region's existing POPs.[153]

Second, oil spills pose a formidable threat to the region.[154] Energy companies have been clamoring to develop the Arctic. Hillcorp LLC is exploring the Beaufort Sea; Eni Norge AS is nearing production at Goliat Field in the Barents Sea; and Gazprom is moving ahead in the Pechora Sea.[155] Yet, state approval does not necessarily guarantee a company's presence in the Arctic. Even after receiving a green light to drill in the Chukchi Sea in 2015, following almost a decade of litigation,[156] Shell Oil found itself unable to adequately enforce credible safety standards near its drill sites. The corporation was simply not equal to the nautical, logistical, and engineering challenges such a feat would require.[157]

An oil spill in the Arctic Ocean could be devastating.[158] Unpredictable ice floes in the Arctic region present a special danger to

149. Vanderzwaag et al., *supra* note 13, at 131–32.
150. *Id.*
151. *Id.*
152. *Id.*
153. Vanderzwaag et al., *supra* note 13, at 131–32.
154. See AMSA, *supra* note 84, at 152.
155. Osofksy et al., *supra* note 5, at 1443.
156. *See generally* Alaska Wilderness League v. Salazar, 571 F.3d 859 (9th Cir. 2009).
157. Indeed, Shell's containment strategy failed when, in full view of Department of Interior Inspectors, its collection dome was "crushed like a beer can" during a spill response test. David Hults, *Environmental Regulation at the Frontier: Government Oversight of Offshore Oil Drilling North of Alaska,* 44 ENVTL. L. 761, 785 (2014). *See* Osofsky et al., *supra* note 5, at 1431.
158. Hossein, *supra* note 143, at 291.

oil tankers. For instance, in 2008, the Brazilian tanker, Endless Sea, became trapped in ice and began to leak in the Antarctic Sea.[159] Eventually, the ship sank and although the crew was rescued unharmed, 2,100 gallons of oil poured into the sea.[160] In cases such as these, containment crews must often wait until temperate seasons to assess the damage.[161] Even then, response times are substantially slower than those in more temperate climes.[162] The Department of Interior derided Shell's planned response time estimates as "unrealistic" and complained of "Shell's lack of rigorous and direct contractor oversight for a complex first-of-its-kind project."[163] Dispersants are typically ineffective in such an environment in any case.[164] Compounding the danger of a spill, high north ecosystems, due to their tightly interwoven food chains, are uniquely vulnerable to massive disruption.[165] A spill on the magnitude of Deepwater Horizon, which dumped 4.9 million barrels of oil into the Gulf of Mexico, would be catastrophic.[166]

Heightening this risk is the fact that regulation is exceedingly difficult in the high north. Regulatory agencies are commonly "captured" by industry interests, whom regulatory agencies rely upon for personnel and technical expertise.[167] Agencies find it impossible to set adequate benchmarks without corporate cooperation, and this asymmetry of power often tips the scales in favor of industry.[168] Perhaps for this reason, disaster management

159. Elizabeth Burleson & Jennifer Huang, *Governance of Climate Change Impacts on the Antarctic Marine Environment*, *in* CLIMATE CHANGE IMPACTS ON OCEAN AND COASTAL LAW: U.S. AND INTERNATIONAL PERSPECTIVES 315, 328 (Randall S. Abate ed., 2015).

160. *Wrecked Brazilian Ship Leaking Oil in Anarctica*, USA TODAY (May 9, 2012), http://usatoday30.usatoday.com/news/world/story/2012-05-09/antactica-oil-spill/54861872/1.

161. *Id.*

162. *See* Christina Nunez, *What Happens When Oil Spills in the Arctic?*, NAT'L GEOGRAPHIC (Apr. 24, 2014), http://news.nationalgeographic.com/news/energy/2014/04/140423-national-research-council-on-oil-spills-in-arctic/; Melissa Bert, *A Strategy to Advance the Arctic Economy*, COUNCIL ON FOREIGN REL. (Feb. 16, 2012), http://www.cfr.org/Arctic/strategy-advance- Arctic-economy/p27258.

163. Hults, *supra* note 157, at 785–86.

164. Burleson & Huang, *supra* note 159, at 315.

165. *Id.*

166. Hults, *supra* note 157, at 806.

167. *Id.* at 789.

168. *Id.* at 768.

plans can be exceedingly optimistic. For instance, the U.S. Oil Pollution Act of 1990 mandated an oil spill response plan designed for a thirty day spill, but the Deepwater Horizon spill was not sealed until almost five months after the explosion.[169] Disasters such as Deepwater and Horizon and Exxon Valdez, while costly to clean, are also quickly forgotten by the public, as demand for natural gas and oil are inelastic and ecological disasters are often opaque and remote.[170] Behavioral biases also cause planners to underestimate the likelihood of major spills, as so-called "fat-tail"—or "black swan"—events are exceedingly unlikely and exceedingly destructive.[171] Planners, however, tend to focus on the former quality to the exclusion of the latter.[172] Russia's environmental framework is even more lax, which should worry all coastal nations, for spills obey neither borders nor official diktat.[173] A large spill would be devastating to the entire region, as the current regulatory regime is not up to the challenge of preventing or responding to one. It is the task of both national and supranational regulatory regimes to take on this challenge.

1. The National Regime: Article 234

UNCLOS has struggled to provide practical, fair, and feasible oversight to the Arctic shipping lanes.[174] Article 234 has governed the Arctic States' stewardship of their emerging shipping lanes since 1982.[175] Diplomat John Moore helped craft UNCLOS Article 234 in reaction to Canadian fears of untrammeled commerce in its northern backyard. Recognizing that the authority Canada required over Arctic waters could not be given to other nations under UNCLOS without severing throttling commercial freedom, Moore offered to Canada, in his summary:

---

169. *Id.* at 775.

170. *Id.* at 802–17.

171. *Id.*

172. *Id.*

173. *See generally* Maria Ivanova, *Oil Spill Emergency Preparedness in the Russian Arctic: A Study of the Murmansk Region,* POLAR RES. (2011), http://www.tandfonline.com/doi/pdf/10.3402/polar.v30i0.7285?needAccess=true.

174. *See generally* HOSSEIN, *supra* note 143.

175. Aldo Chircop, *International Arctic Shipping: Towards Strategic Scaling-Up of Marine Protection, in* CHANGES IN THE ARCTIC ENV'T AND LAW OF THE SEA, 177, 181–85 (2010).

> The ability in ice-covered areas, an extraordinary ability which we've opposed for every other nation in the world in every other setting, to let you set ship construction and operation standards for vessels not entitled to sovereign immunity: that is, obviously not for warships, and not for coastguard vessels, etc. This is provided in addition that the reasonableness of your regulations is also subject to third party dispute regulation.[176]

To that end, UNCLOS Article 234 has been an effective tool in the hands of Russian and Canadian lawmakers. Its foundations, however, are not without flaws. Article 234 provides a powerful but tenuous mechanism for Arctic countries to regulate economic activity off their northern coasts.[177] The Article reads:

> Coastal States have the right to adopt and enforce non-discriminatory laws and regulations for the prevention, reduction and control of marine pollution from vessels in ice-covered areas within the limits of the exclusive economic zone, where particularly severe climatic conditions and the presence of ice covering such areas for most of the year create obstructions or exceptional hazards to navigation, and pollution of the marine environment could cause major harm to or irreversible disturbance of the ecological balance. Such laws and regulations shall have due regard to navigation and the protection and preservation of the marine environment based on the best available scientific evidence.[178]

At its most basic level, the article "authorizes coastal states to develop and administer special regulations for human activities in ice-covered waters."[179] Scholars have debated, however, how broadly the article should be read. More specifically, scholars have questioned whether regulations permissible under the Article in a coastal nation's EEZ can be more stringent than those allowable in their territorial passage, and whether the right of innocent passage must also be upheld.[180] Canada and Russia have both relied on the Article for marine pollution controls and

176. Moore, *supra* note 85, at 21.
177. Chircop, *supra* note 175, at 182–83.
178. UNCLOS, *supra* note 2, art. 234.
179. Burleson & Huang, *supra* note 159, at 332.
180. Thoren, *supra* note 71, at 23–27.

more.[181] They, and other coastal nations, have drastically expanded the customary interpretation of the Article in the last decade.[182]

UNCLOS Article 234 responds to the Arctic Ocean's unique need for resource management rules, which is sharpened by relatively recent knowledge of the ocean's fragility.[183] The exact contours of this rule regime, however, are far from clear. [184] While Article 234 clearly grants regulatory powers over "iced-covered areas," interpretations differ on how much, and for how many months out of the year, ice must cover the sea for the Article to apply.[185] The ending phrase of the Article, "with due regard to navigation and the protection and preservation of the marine envrionment," is clearly meant to weight competing goals, but it provides textual support for both wide and narrow interpretations of the Article.[186] The Russian Federation has used the Article to exercise near complete control over ships passing through the Northeast Passage, requiring expensive ice-breaker escorts.[187] The Russian Northern Sea Route is still only sparingly used by global shipping companies. In the event of increased use, however, the Article's ambiguity could prove to be a point of contention between the Russian Federation and advocates of free navigation on the high seas, such as the United States.[188]

Indeed, the U.S. position on Article 234 has been one of ambiguity and contradictions. The U.S. has held, for instance, that an Arctic state has no right under the Article to deny ships passage through one's EEZ, territorial sea, or international strait, even if a non-state vessel is noncompliant with the coastal state's environmental regulations. Such a position is not only anomalous among the Arctic states, but would also functionally eviscerate Article 234, leaving coastal states with only the ability to

181. Stanley P. Fields, *Article 234 of UNCLOS: The Overlooked Linchpin for Achieving Safety and Security in the U.S. Arctic?* 7 HARV. NAT'L SEC. J. 55, 108 (2016).
182. *Id.*
183. Mendez, *supra* note 18, at 543–44.
184. Farré et al., *supra* note 17, at 310.
185. *Id.*
186. *Id.*
187. *Id.*
188. *Id.*

retroactively impose sanctions after environmental damages occur.[189] The U.S. needs to find a way to balance its full-throated support of free navigation with competing environmental and political concerns.

ii. The Supranational Regime: The Arctic Council

As a regional locus of administrative power, albeit soft power, the Arctic Council has been remarkably effective in fostering scientific research in the Arctic, leading many to be optimistic about its future.[190] Nevertheless, there are powerful reasons to believe that it will not suffice to protect Arctic ecosystems from the influx of cruise ships, oil rigs, container vessels, and deep sea barges poised to crowd the North Pole in the coming decades.[191] The Arctic Council evolved from the precursor Arctic Environmental Protection Strategy and was formally established on September 19, 1996.[192] While coastal states have made significant efforts to coordinate reaching environmental and safety objectives, these efforts have failed to create a coordinated regulatory universe.[193]

Not everyone takes such a critical viewpoint. Some argue that a fragmentary piecemeal system that functions should be preferred over a comprehensive treaty system that does not.[194] Indeed, the Arctic Council has made great inroads providing a coordinated response network to oil spills, shipwrecks, and other maritime perils. For instance, eight coastal Arctic states signed the Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic in May of 2011 to coordinate coast guard responses and then two years later the Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic to dictate minimum levels of pre-positioned oil spill remediation equipment.[195] Further, the Emergency Prevention, Preparedness and Response Working Group has published various reports, guidelines, and maps concerning hydrocarbon extraction and shipping.[196] Finally, the Arctic Regional

189. Fields, *supra* note 181, at 74.
190. *See generally* HOSSEIN, *supra* note 143.
191. Chircop, *supra* note 175, at 182–85.
192. Thoren, *supra* note 71, at 17.
193. Huebert, *supra* note 20, at 40–44.
194. HOSSEIN, *supra* note 143, at 294.
195. Vanderzwaag et al., *supra* note 13, at 303–06.
196. *Id.*

Hydrographic Commission—established in 2010—surveys the Arctic to modern standards.[197] Thus far, only 10 percent of the region has been adequately charted.[198]

Despite these scientific advancements, the Arctic Council still has a long way to go. Ships sailing in the high seas of the Arctic are still permitted to discharge oil and oily mixture because, although the 65th session of the Marine Environmental Protection Committee reached an "agreement in principle" regarding a ban on such discharge, the United States demanded exemptions for ships weighing less than 400 gross tons and the Russian Federation was against the ban, given limited port facilities on its northern coast.[199] Food waste discharge and grey water discharge are also permitted, albeit with limitations, which is a regulatory failing that could quickly become a serious problem, as melting ice brings tourist cruises closer to the North Pole. The average cruise ship generates 3.8 million liters of grey water per week.[200] Black carbon discharge regulations have also been stymied because of a difficulty in reaching a consensus.[201] A ban on heavy fuel is a political non-starter as well, despite the well-documented ecological ramifications of its use.[202] Indeed, the Arctic Council has struggled to even identify areas of heightened ecological importance and sensitivity.[203] These problems are not insoluble, as the Arctic Council may be the best institutional option for providing an environmental regulatory regime for the Arctic high seas.[204]

The Arctic Council also has an important role to play in managing coordinated safety efforts between Arctic coast guards. The increasing numbers of ships traversing the Arctic, for trade and tourism alike, create unique challenges of nautical safety.[205] In the winter, when ice blocks the sea lanes, ships can be weeks away from rescue.[206] Not only can hulls be crushed be-

197. *Id.*
198. *Id.* at 305–06.
199. *Id.* at 306.
200. *Id.* at 310.
201. *Id.*
202. *Id.*
203. *Id.*
204. *See generally* HOSSEIN, *supra* note 143.
205. Fields, *supra* note 181, at 74.
206. *Id.*

tween ice floes or dashed against icebergs, but they can also accumulate frozen water that comes off the surface in the form of sea spray, which in great enough quantities can induce capsizing.[207] Visibility is often limited, and the extreme cold can quickly turn deadly.[208] Search and rescue infrastructure is expensive to commission and maintain, but will be indispensable in providing for safe navigation in the high seas of the Arctic. The Arctic Council, as this Note will argue in Part III, must become more inclusive and more effective to coordinate coast guards' shipwreck and oil spill responses.

C. Questions of Extraction: Continental Shelf Demarcation

Cooperation on the Arctic Ocean's surface may mask competition on its seabed, however, UNCLOS provides insufficient technical guidance for Arctic states making claims to extended continental shelf. The regime for allocating underwater territory is relatively young. In 1945, Harry Truman decreed that the resources beneath the U.S. continental shelf belonged to the United States.[209] Thirteen years later, at the first UNCLOS, a crude definition of continental shelf was codified to allow the extraction of off-shore resources.[210] The mechanism for determining where a coastal state's continental shelf ends and the Common Heritage of Mankind seabed begins is, however, anything but simple. The juridical concept of a continental margin encompasses the continental shelf, the continental slope, and the continental rise. A country has exclusive rights to the seabed resources—hydrocarbons and minerals—of its continental landmass until such point where the landmass blends into the abyssal plains of the ocean floor.[211] The waters above, however, are considered high seas.[212]

---

207. GAIL OSHERENKO & ORAN R. YOUNG, THE AGE OF THE ARCTIC 111–16 (L. Bliss et al. eds., 1989).

208. Thoren, *supra* note 71, at 1.

209. Spielman, *supra* note 42, at 312–17.

210. *Id. See also* Sharveen Persand, *A Practical Overview of Article 76 of the United Nations Convention on the Law of the Sea*, UNITED NATIONS 5–6 (2005), http://www.un.org/depts/los/nippon/unnff_programme_home/fellows_pages/fellows_papers/persand_0506_mauritius.pdf.

211. Van Pay, *supra* note 103, at 65. Allain, *supra* note 5, at 11–14.

212. *Id.*

Empowered by UNCLOS Article 76 as a technical board, the Commission on the Limits of Continental Shelf (CLCS), comprised of a panel of 21 scientists, is tasked with determining where a country's continental shelf ends and where the open ocean begins.[213] A nation has a ten-year window from ratifying UNCLOS to submit claims to the CLCS.[214] Submission of such a claim is a "costly and complex process."[215] A claim must establish the existence of a natural prolongation of the continental shelf beyond 200 nautical miles.[216] The idea of a natural prolongation of territory came from the North Sea Continental Shelf Cases in 1969.[217] Prolongations are typically determined by morphological analyses. Where there is a morphological break between the shelf and the prolongation, however, geological arguments can be used to establish prolongation as well, as supported by ICJ rulings in the Tunisia/Libya Continental Shelf Case and the Libya/Malta Continental Shelf Case.[218] Both of these cases saw the ICJ reach geomorphology-based compromises to resolve a dispute over the same natural prolongation by using equitable principles and the shelf's physical characteristics.[219] Advances in deep-sea imaging technology have enabled countries to put a greater emphasis on geological analysis.[220]

Once a prolongation is established, a claim must identify the foot of the continental slope in order to determine the maximum extensions of the continental shelf.[221] The foot of the slope is de-

213. *Id.* at 24. For a definition of the term "continental shelf" *see* UNCLOS, *supra* note 2, art. 76(1) ("The continental shelf of a coastal State comprises the seabed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land territory to the outer edge of the continental margin, or to a distance of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured where the outer edge of the continental margin does not extend up to that distance.").

214. Spielman, *supra* note 42, at 314–16.

215. Allain, *supra* note 5, at 11–14.

216. *Id.*

217. *Id. See generally* North Sea Continental Shelf (Fed. Repub. Ger. v. Den.), Judgment, 1969 I.C.J. Rep. 3 (Feb. 20).

218. Allain, *supra* note 5 at 15–16. *See generally* Continental Shelf (Tunis. v. Libyan Arab Jamahiriya), Judgment, 1982 I.C.J. Rep 18, ¶ 60–62 (Feb. 24). *See also* Continental Shelf (Libyan Arab Jamahiriya v. Malta), Judgment, 1985 I.C.J. Rep. 13, ¶ 40 (June 3).

219. Allain, *supra* note 5, at 15–16.

220. *Id.*

221. *Id.*

termined by finding a series of evenly spaced bathymetric profiles perpendicular to the continental slope and deducing the point of maximum depth change from them.[222] This is made difficult in the Arctic Ocean by ice and sediment, both of which make the determination of the point of maximum gradient change difficult.[223]

From the foot of the slope, the outer limits of the continental margin can be determined. There are two permissible means to draw this line. The first is the Irish Formula, which draws the outer limit where the thickness of the sediment is at least 1 percent the distance to the foot of the slope.[224] The Hedberg Formula, on the other hand, draws a line connecting points not more than sixty meters from the foot of the slope.[225] The former is more problematic.[226] The Irish Formula requires many measurements of sediment depth, which test the accuracy of the most advanced seismic measurement technology.[227] Because both methods may be used in tandem to maximize a country's claim,[228] the variability inevitable from any use of the Irish Formula is likely to inject controversy into any claim of valuable territory.[229]

The fourth and final step in a continental shelf claim involves applying a second constraint on shelf expansion. In no case may a continental shelf "exceed 350 nautical miles from the baselines from which the breadth of the territorial sea is measured or shall not exceed 100 nautical miles from the 2,500 meter isobath, which is a line connecting the depth of 2,500 metres."[230] The first test is relatively straightforward, but the second test, of the 2,500 metre isobaths, is much more challenging, as "it necessitates the measurement of absolute water depths with the utmost

222. *Id.*
223. *Id.* at 15–16.
224. Persand, *supra* note 210.
225. Allain, *supra* note 5, at 15–16.
226. *Id.*
227. *Id.* Researchers have identified the following several problems with determining sediment thickness: 1) insufficient seismic profile coverage, 2) poor seismic resolution, 3) the use of the velocity function in depth conversion, 4) the paucity of drill holds for calibrating depth, and 5) high relief ocean floor's thickness variation. *Id.*
228. *Id.*
229. *Id.*
230. *Id.*

accuracy."[231] This isobath, along with standards that are more stringent for "ridges," as opposed to "elevations," are proving particularly problematic in assessing Arctic claims.[232]

The Arctic is unique because it has the most continental shelf by percentage of the world's seven oceans.[233] The trouble is determining what this legally means, as the juridical concept of continental shelf ignores differences in geological features between different types of continental margins, forcing a set of complicated and evolving scientific designations into one monolithic legal designation.[234] In the early years of the new millennium, several Arctic coastal nations have scrambled to put in claims with the CLCS.[235] Denmark has claimed the North Pole.[236] Norway, meanwhile, filed a more modest claim, which was granted, awarding it part of the Banana Hole, the Loop Hole, and a small area north of Svalbard.[237] Canada is gathering data to file for an extended continental shelf claim as well.[238] The United States is barred from filing a claim until it ratifies UNCLOS, but its claim could potentially be so far-reaching in scope as to overlap with other nations' claims.[239] The most ambitious of these claims, however, has been that of the Russian Federation.[240]

On August 2, 2007, a Russian nuclear-powered icebreaker cleaved through ten feet of ice and released two deep-water submersibles, Mir-I and Mir-II.[241] The submersibles descended to 4,300 meters, and while one collected soil samples, the other planted a one-meter high titanium Russian tricolor.[242] The expe-

231. *Id.*
232. *Id.*
233. Van Pay, *supra* note 103, at 61–62.
234. Allain, *supra* note 5, at 18–19.
235. *Id.* at 61–62.
236. *Id.* at 77.
237. *Id.* at 65.
238. *Id.* at 76.
239. *Id.* at 61–62.
240. Allain, *supra* note 5, at 11–14.
241. Atle Staalesen, *Russia Submits Claim for the North Pole*, BARENTS OBSERVER (Aug. 4, 2015), http://barentsobserver.com/en/arctic/2015/08/russia-submits-claim-north-pole-04-08. *See also* Tom Parfitt, *Russia Plants Flag on the North Pole Seabed*, GUARDIAN (Aug. 2, 2007), https://www.theguardian.com/world/2007/aug/02/russia.arctic.
242. *Id.*

dition's leader, Artur Chillingarov, left no doubt that the objective was to prove that "the Arctic is Russian."[243] The Canadian Foreign Minister, Peter MacKay, retorted in calculated exasperation that, "[t]his isn't the fifteenth century; you can't go around the world planting flags and declaring '[w]e're claiming this territory."[244] Former UNCLOS U.S. diplomat John Moore, however, criticized the western response as overblown and needlessly hostile to Russian expeditionary efforts.[245] He drew a parallel to the World War II flight of Jospeh Fletcher from Alaska to the North Pole, where Fletcher lit fires under the plane's engines to take off in the subzero weather and was later called to Moscow to be awarded a medal for his flight.[246]

Nevertheless, arguing that the Lomonosov Ridge and the Alpha Mendeleeyev Ridge are the "submerged prolongations" of the Russian landmass, the Russian Federation has since laid claim to a large swathe of the Arctic Circle.[247] Minister MacKay was likely correct in suggesting that the 2007 Russian flag-planting was a legally meaningless "show,"[248] but the soil and rock samples collected from the undersea Lomonsov Ridge are proving to be of great consequence to continental shelf claims in the Arctic.[249] The United States has argued against this claim on the grounds that the two ridges, which run through the North Pole, constitute free standing oceanic features not tied to any continental shelf.[250]

These disputes will not soon resolve themselves, for the terms contemplated by UNCLOS are necessarily legally terms, whereas the proof they demand is scientific.[251] Land mass, continental margin, and oceanic ridges, for instance, are geomorphological concepts open to scientific disagreement.[252] Land ter-

243. *Id.*
244. *Id.*
245. Moore, *supra* note 85, at 17–18.
246. *Id.*
247. Farré et al., *supra* note 17, at 311.
248. Parfitt, *supra* note 241.
249. Farré et al., *supra* note 17, at 311.
250. Vladimir Jares, *The Continental Shelf Beyond 200 Nautical Miles: The Work of the Commission on the Limits of the Continental Shelf and the Arctic,* 42 VAND. J. TRANSNAT'L L. 1265, 1287 (2009).
251. Spielman, *supra* note 42, at 316–17.
252. Jares, *supra* note 250, at 1272.

ritory and continental shelf, however, are legal terms demanding hard and fast definitions.[253] Article 76 seeks to employ the latter to define the former, defining the continental margin as "the submerged prolongation of the land mass of the coastal State, and consists of the sea-bed 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."[254]

The United States brought several geomorphological objections to the Russian claims.[255] First, Article 76 provides that a 2,500 meter isobath is a definitive backstop on any continental shelf claim: excluding natural prolongations, no continental shelf can extend within 100 nautical miles of the 2,500 meter isobath.[256] The U.S. report argued that the Russian claims must necessarily diverge in their assumptions from the data supplied by the Intergovernmental Bathymetric Chart of the Arctic Ocean.[257] Second, the U.S. report avered that oceanic ridges, including the Alpha-Mendeleeyev and Lomonsov ridges, are geologically distinct from continental shelves and could thus not be considered a natural prolongation of the Russian landmass.[258] The United States further contended that the Alpha-Mendeleeyev ridge is formed by hot spot vulcanism and thus not a "natural prolongation" of the Russian national landmass."[259] Third, focusing on the geology of the ridges, the United States contended that the rocks present on the ridge are nonspecific to the Russian shelf and thus cannot be considered a geomorphological extension of the continent.[260]

These geomorphological arguments are problematic. Not only are scientific and legal standards of certainty set side-to-side in an uneasy embrace, but also the CLCS does not answer the ambiguity presented in Article 76 as to the differences, *vel non*, be-

253. *Id.*
254. UNCLOS, *supra* note 2, art. 76(3).
255. Spielman, *supra* note 42, at 329–40.
256. Jares, *supra* note 250, at 1275.
257. Spielman, *supra* note 42, at 329–40.
258. *Id.*
259. *Id.*
260. *Id.*

tween ridges, oceanic ridges, and submarine ridges as to the formation of natural prolongations.[261] The CLS also does not provide an adequate definition of oceanic ridge, suggesting that in some cases "[the term oceanic ridge] clearly refers to 'oceanic spreading ridges' only, while in others it seems to apply to all ridges composed of oceanic basaltic rocks."[262] The CLCS does not exactly clarify the standard when it provides that its "view shall be based on such scientific and legal considerations as natural prolongation of land territory and land mass, morphology of ridges and their relation to the continental margin . . ., and continuity of ridges," and the CLCS notes finally that ridges be examined on "a case-by-case basis."[263] Such flexible administrative interpretation of an already ambiguous Article 76 provides little in the way of predictability, especially given that coastal states' submissions to the CLCS are confidential. For example, a strict formulation of 'oceanic ridges' would limit the term to oceanic spreading ridges, which would likely result in a CLCS holding for Russia's claim on the Alpha Mendeleeyev ridge, as the opposing U.S. claim suggests that the ridge was formed by a hot spot.[264] A broader interpretation of oceanic ridges, which includes hot spots, might encompass the Alpha Mendeleeyev ridge under the American theory, and would therefore defeat the Russian claim.[265]

This is a poor mechanism to allocate Arctic resources, as it promises a haphazard and adversarial division of the seabed.[266] It risks divvying up the Arctic in favor of those countries with the resources and access to make claims.[267] The collection of bathymetric data required for these claims is time-consuming

261. *Id. See also* Comm'n on the Limits of the Continental Shelf, Scientific and Technical Guidelines of the Commission on the Limits of the Continental Shelf adopted at its Fifth Session, CLCS/11, at § 7.2 (May 13, 1999), http://www.un.org/depts/los/clcs_new/documents/Guidelines/CLCS_11.htm#7.2.%20Oceanic [hereinafter CLCS Guidelines].

262. *Id. See also* Spielman, *supra* note 42, at 329–40.

263. CLCS Guidelines, *supra* note 261.

264. Spielman, *supra* note 42, at 329–40.

265. *Id.*

266. Brent Carpenter, *Warm is the New Cold: Global Warming, Oil, UNCLOS Article 76, and How an Arctic Treaty Might Stop a New Cold War,* 39 ENVTL. L. 215, 243–46 (2009).

267. *Id.*

and prohibitively expensive.[268] Because the CLCS rules allow this data to remain confidential, other states cannot vet their rivals' data, leaving them unsure as to how other submissions may interact with their own.[269] Although bathymetric cartography, the mapping of the various depths of ocean floor, has come a long way since Fridjof Nansen first used lead lines to measure ocean depth between 1893 and 1896, even multi-beam echo sounding faces technical challenges in the Arctic.[270] The transducer array must be in direct contact from the water and is thus vulnerable to both ice debris and the sonic interference in its echo reception caused by icebreaking.[271]

The inherent potential of conflict in continental shelf demarcation would be worrisome by itself, but, as the U.S.-Canadian dispute over the Beaufort Sea has demonstrated, the relationships of friendly nations can usually survive even a pressing territorial dispute.[272] When combined with other sources of conflict, however, the territorial dispute can become a dangerous tripline.[273] Russian-American relations, overcast even in the sunniest weather, have taken on a progressively stormy aspect in the last decade.[274] Technical challenges aside, the adversarial nature of the Continental Shelf demarcation process, as well as the geographical singularity of the Arctic Ocean, risk closing off the Arctic from the rest of the world—a process of territorializing that could create a *mare clausum* which would "certainly lay bare pieties regarding the future role of the Common Heritage of Mankind principle in international law."[275]

III. A TREATY BASED SOLUTION TO THE ARCTIC'S LEGAL DEFICIENCIES

This Part argues that the Arctic's legal lacunae will best be filled by a far-reaching multi-lateral treaty addressing political,

268. This being said, there have been exciting breakthroughs in bathymetric technologies over the last few decades. *See generally* Larry Mayer, *Sea Floor Mapping and Exploration in a Changing Arctic Sea Ice Environment, in* CHANGES IN THE ARCTIC ENVIRONMENT AND THE LAW OF THE SEA 91 (2010).

269. Jares, *supra* note 250, at 1302.

270. *Id.*

271. Mayer, *supra* note 268, at 90,

272. Rossi, *supra* note 29, at 29.

273. *Id.* at 31.

274. Farré et al., *supra* note 17, at 311.

275. Rossi, *supra* note 29, at 57.

environmental, and commercial disagreements. It will advocate that nations with an interest in the Arctic—all members of the Arctic Council, including indigenous groups and observer states—negotiate and sign a treaty, or set of treaties, codifying the regulatory and territorial rules governing the region, especially the prevailing interpretations of UNCLOS as applied to the high North. A comparison of the current Arctic legal regime with the Antarctic Treaty System (ATS) will demonstrates the potential of such a treaty. Ultimately, however, the Arctic is unique, and coastal nations will not consent to such an untouchable *res communis* so close to their Northern borders. Rather than calling for new institutions, this Part will instead advocate for strengthening the Arctic Council and, through multilateral treaty law, transforming the Arctic Council from a soft-power body to a robust and independent body with binding legislative, adjudicative, and enforcement functions. There is no doubt that the Arctic Council must be changed dramatically in order to act as the forum of such a treaty-making process and engage in the substantive rule-making needed.

A. A Multilateral Treaty Investing Legislative Power in the Arctic Council

The ATS is an excellent model of polar governance.[276] Signed by seven states on December 1, 1959, the treaty did not resolve, but only froze, existing disputes and territorial claims.[277] The ATS mandated that the Antarctic region remain demilitarized and unexploited, while listing the region under special annexes pertaining to stricter restrictions of oil, noxious liquid substances, and garbage, none of which include the Arctic Ocean.[278]

Such a parallel polar treaty would diminish risks of both armed conflict and further ecological degradation around the North Pole. There are, however, many obstacles preventing the formation of a comprehensive treaty system capable of crafting such binding regulations.[279] Foremost among them are questions of coastal nations' sovereignty, structural governance, and indigenous peoples' autonomy.[280] Although the ATS could serve as a

276. Burleson & Huang, *supra* note 159, at 316–20, 329.
277. *Id.* at 320.
278. *Id.*
279. *Id.* at 336–39.
280. *Id.* at 336–39, 342.

valuable model for treaty law in the region, ultimately, a comprehensive Arctic Treaty must stand on its own merits and permit the levels of economic development that stakeholder nations will require.[281]

The Arctic Council, restricted by mandate and consensus to the role of a soft-power institution, could serve as a platform for the gradual development of such a system.[282] The Arctic Council, if it is to be useful, needs to be reformatted in both its membership and its mandate.[283] Real development of a permanent environmental and political solution to the Arctic quandary must entail a multilateral treaty modifying the Arctic Council.[284]

Such a treaty should aspire to the ATS in both scope and membership, if not substance.[285] As a threshold issue, the hegemony of the Arctic Five must give way to a global stewardship of the planet's northern pole.[286] Second, politically sensitive geographical demarcations, especially the borders between continental shelfs and the designations of international straits, must be agreed upon by international consensus or frozen until such a point of agreement is politically feasible.[287] International custom regarding the interpretation of Article 234 must be clarified, and, where possible, strengthened by treaty.[288] The Arctic needs a robust set of environmental regulations that do not depend upon political uncertainties for their existence or enforcement.

B. Greater Inclusion of the Arctic Council

An Arctic treaty must involve as signatories all affected parties, especially non-Arctic trading powers such as the People's Republic of China and India. The Arctic Council's membership and voting structure should thus be amended to constitute a more representative chorus of Arctic stakeholders, which in the twenty-first century, includes all coastal nations.[289] All trading nations, not only the Arctic Five, stand to gain or lose from the

281. Molly Watson, *An Arctic Treaty: A Solution to the International Dispute over the Polar Region,* 14 OCEAN & COASTAL L.J. 307, 328 (2008).
282. Burleson & Huang, *supra* note 159, at 315.
283. *Id.*
284. Watson, *supra* note 281, at 330.
285. *Id.* at 328.
286. *Id.* at 329–30.
287. *Id.* at 329–30.
288. *Id.* at 318.
289. Burleson & Huang, *supra* note 159, at 342.

melting of the Arctic ice caps over the course of the next few decades.[290] Indeed, in May 2013, when the Arctic Council voted at the Kiruna Ministerial meeting to grant permanent observer status to China, Japan, South Korea, Singapore, Italy, and India, the Danish Foreign Minister observed that the move "reflects the fact that many countries outside the Arctic area also have legitimate interests in the development of the region."[291] The People's Republic of China, for instance, has been positioning themselves as a near-Arctic state.[292] Its dependence on hydrocarbons and its export-based economy require increased access to fossil fuels and decreased shipping costs.[293] The nature of reciprocity in international law likewise ties questions of maritime policy in Chinese territorial seas and EEZ to those in the Arctic Circle.[294]

The authority and power of the Arctic Council has grown dramatically in the previous decade.[295] Currently there are twelve observer nations, all of whom are shipping powers in their own right, and who are currently denied speaking privileges in the Arctic Council.[296] This has a deleterious effect on multilateral decision-making. Not only is the "cross-pollination of ideas" stifled by constraining discourse to the opinions of the eight Arctic Council member states,[297] but the Arctic Council also risks incentivizing excluded parties to seek alternative avenues of power projection.[298] Arctic Council members should no longer pretend that they are the only ones affected by changes in the Arctic, for barring equally affected non-coastal states from decision-making processes only denigrates the Arctic Council's legitimacy.[299] The melting of the Arctic icefields is a global problem

290. *Id.* at 342.

291. Shiloh Rainwater, *International Law and the 'Globalization of the Arctic': Assessing the Rights of Non-Arctic States in the High North,* 30 EMORY INT'L L. REV. 115, 116 (2015).

292. Fields, *supra* note 181, at 108.

293. Sharp, *supra* note 22, at 311.

294. Olya Gayazova, *China's Rights in the Marine Arctic,* 28 INT'L J. MAR. & COASTAL L. 61, 63–74 (2013).

295. *See generally* HOSSEIN, *supra* note 143, at 18.

296. Burleson & Huang, *supra* note 159, at 339.

297. The Arctic Eight are the Arctic Five plus Finland, Iceland and Sweden. Allain, *supra* note 5, at 4. *See also* Rainwater, *supra* note 291, at 149.

298. Rainwater, *supra* note 291, at 149.

299. Burleson & Huang, *supra* note 159, at 339.

and a global opportunity that demands a global response in the form of integrated polar governance.[300]

C. More Sophisticated Arctic Council Environmental Regulation

A detailed clarification of the custom emerging from Article 234 would better delineate the scope of coastal nations' regulatory powers over shipping beyond their territorial seas. The Arctic's "rich and fragile ecosystem" requires a clear demarcation of regulatory jurisdictions to prevent large swathes of the ocean from seeping through the regulatory cracks.[301] A treaty system would be able to provide comprehensive environmental protections without necessarily deciding more difficult questions of sovereignty and jurisdiction. As coastal states did with the ATS, they could freeze their territorial claims and agree upon environmental safeguards while the shipping lanes are still mostly frozen.[302] This would disentangle environmental protections from jurisdictional and territorial claims and provide a level of protection for Arctic ecosystems that does not depend on political vicissitudes.[303]

In practice, an Arctic treaty regime would have to provide for regulatory agencies that exercise each individual nations' Article 234 powers. Each coastal nation could opt for stronger regulations within its respective EEZ, but a baseline of environmental protection must be administered by a supranational agency. A multinational Arctic Council is the obvious choice for such an agency. The Arctic Council already administers the Arctic Environmental Protection Strategy, and treaty provisions that provided it with binding authority to implement the strategy would go a long way towards filling conspicuous gaps in the Arctic environmental regime.[304] The Arctic Council should also take on the responsibility for a Regional Fisheries Management Organization. Such an organization would be tasked with managing fish stocks on the high seas that move through one or more member states' EEZ.[305] Part V of UNCLOS urges the creation of such

300. *Id.* at 339–40.
301. Watson, *supra* note 281, at 329–30.
302. *Id.*
303. *Id.*
304. Vanderzwaag et al., *supra* note 13, at 134.
305. Jeffers, *supra* note 14, at 975. *See also* Hassan, *supra* note 48, at 511.

inter-EEZ conservation regimes.[306] Such systems would be able to address the transnational reality of fish depletion and craft balanced and consistent rules to commercial fishing in the Arctic.[307]

A more vigorous Arctic Council could provide for a stronger set of environmental regulations and policies in the high North, while also integrating the voices of the many stakeholders in the region. Polycentric governance by national, indigenous, and transnational entities would not do away with the current patchwork of actors and regulations. Instead, it would move towards organizing and marshalling those systems around common goals. This may already be underway, as certain commentators have looked favorably on the "mosaic" of current polar law.[308] Indigenous groups are eager to work with multinational corporations on profitably extracting the region's resources. They also insist on having a stake in the process that reflects their history in the Arctic.[309] A hybrid model of governance, with the Arctic Council as the premier forum for debate and coordination, would involve key stakeholders working together to form practical legal mechanisms to resolve resource and shipping disputes and protect the environment.[310] The Arctic Inupiat Offshore LLC, for instance, joined six Alaskan North Slope indigenous groups with Shell Oil in order to lay the groundwork for gas and oil exploration.[311] Strong indigenous institutions can ensure that those communities reap the benefits of their natural resources while

306. Hassan, *supra* note 48, at 519–22. *See also* UNCLOS, *supra* note 2, art. 118 ("States shall cooperate with each other in the conservation and management of living resources in the areas of the high seas. States whose nationals exploit identical living resources, or different living resources in the same area, shall enter into negotiations with a view to taking the measures necessary for the conservation of the living resources concerned. They shall, as appropriate, cooperate to establish subregional or regional fisheries organizations to this end.").

307. Jeffers, *supra* note 14, at 975.

308. Osofsky, et al., *supra* note 5, at 1431–40.

309. Aqqaluk Lynge has written on the uneasy syncretization of western and indigenous ideas of property. He has observed, "[w]hile we are uncomfortable with the word 'own,' I say it is all Inuit who 'own' much of the Arctic, if I must use a non-Inuit word. And through ICC, Inuit will continue to voice this message loudly, clearly and collectively." Osofsky et al., *supra* note 5, at 1449–50.

310. *Id.* at 1431–34.

311. *Id.*

protecting their environment as well.[312] Polar indigeneity emphasizes cultural sovereignty over territorial sovereignty and calls for traditional Westphalian states to cede certain levels of sovereignty to indigenous entities.[313] Placing indigenous groups in positions of power need not threaten the traditional political sovereignty of coastal states, but empowering such groups is absolutely necessary to ensure an effective stewardship over the Arctic. In the words of Aqqaluk Lynge, the chair of the Inuit Circumpolar Council:

> Our organization is not against the exploitation of non-renewable resources or industrial development in the circumpolar Arctic, but find it highly relevant that this development takes place on sustainable premises where the public is fully informed about the consequences of how industrial, oil and petroleum projects can impact nature, the environment and society.[314]

The inherent problems of crafting regulation in a region as strange and forbidding as the Arctic demands that regulators approach industry with an abundance of caution. Prescriptive regulations will help regulators escape corporate determinations of what is technically achievable.[315] Though bright-line rules can slow the pace of advancement, such inflexibility can be mitigated by scientific expertise on the part of regulators.[316] Such demanding standard-setting is resource and time intensive. The stakeholders would also benefit by pooling their resources and bolstering mainstream regulatory regimes, rather than relying exclusively on side-stream systems.[317] Circumpolar political collaboration, which would deepen the connections already forged by

312. *Id.*

313. Jessica M. Shadian, *Reimagining Political Space: The Limits of Arctic Indigenous Self-Determination in International Governance, in* GOVERNING ARCTIC CHANGE: GLOBAL PERSPECTIVES 43, 40–45 (Kathrin Keil & Sebastian Knecht eds. 2017).

314. Aqqaluk Lynge, Chair of the Inuit Circumpolar Council, Address at the Arctic Frontiers Conference in Tromsø (Jan. 21, 2014), http://inuit.org/fileadmin/user_upload/File/2014/Presse/Arctic_Frontiers_2014_Aqqaluk_Lynge_speech_jan-21-2014.pdf.

315. Hults, *supra* note 157, at 823–24.

316. *Id.*

317. *Id.* at 806.

the Arctic Environmental Protection Strategy, is the only solution to the grave challenges facing the Arctic Ocean in the twenty-first century.

D. Coordinated Shipping Safety Measures

All states with flagged ships plying the waters of the Arctic have an interest in creating uniform safety standards in the Arctic.[318] On May 12, 2011, all Arctic States signed an Arctic Search and Rescue Agreement to establish responsibilities on the part of each signatory's coast guard in case of shipwrecks on the high seas.[319] They should go farther and provide the Arctic Council with a standard-setting body that can keep abreast of developments in nautical technology in order to develop, deepen, and modernize the International Maritime Organization's Polar Code, which although state-of-the-art as of 2014, will surely need more rapid adjustments than other forms of regulation.[320] Further, technical bodies organized under the auspices of the Arctic Council could plug information gaps currently troubling Arctic shipping. Arctic navigation charts need to be redrawn with current bathymetric data to respond to opening sea routes; ice and iceberg formations need to be mapped and charted; and hydrographic charts need to be redrawn to improve voyage planning and safe navigation.[321]

CONCLUSION

There is no doubt that as the Arctic ice sheets melt, the region will experience significant ecological trauma and widespread habitat loss. Indeed, low-lying countries around the world will see their coastland disappear as a result of ice sheet melting. Nevertheless, the international community has a unique opportunity in these remaining few years or decades before the thaw to ensure that the Arctic is opened in a responsible manner.

The current legal regimes available under UNCLOS are not adequate to resolve this issue. There is no firm understanding of

---

318. AMSA, *supra* note 84, at 5–8.

319. Rainwater, *supra* note 291, at 140.

320. Thoren, *supra* note 71, at 13. *See generally* Int'l Maritime Org. [IMO], annex 10, MPEC 68/21/Add. 1, *International Code for Ships Operating in Polar Waters (Polar Code)*, (Nov. 17–21, 2014), http://www.imo.org/en/MediaCentre/HotTopics/polar/Documents/POLAR%20CODE%20TEXT%20AS%20ADOPTED.pdf.

321. AMSA *supra* note 84, at 7.

which shipping lanes are international straits and which are internal waters or territorial seas. There is also no means of adjudicating competing claims to seabed resources under the current UNCLOS Article 87 rules. Not only are the environmental safeguards of Article 234 unevenly applied, but the Arctic Council is too weak to enforce significant additional regulation. With the support of the broader international community, the coastal states that came together on May 28, 2008 ought to do so again to create an inclusive and resilient framework of Arctic governance. Polar conflicts are looming, and without a legal infrastructure to mediate such conflicts, the Arctic and its myriad stakeholders will be left adrift.

Erik Vande Stouwe[*]

* B.A. Tulane University (2012); J.D., Brooklyn Law School (2018); Symposium Editor, *Brooklyn Journal of International Law*. I would like to thank my editors, Jessica Martin, Michelle Lee, and Samantha Barach, who were patient enough to trace the labyrinths of my logic in this work's construction, along with Professor Julian Arato, who provided early guidance on its architecture. All errors are my own.