

# A New Ocean: The Legal Challenges of the Arctic Thaw\*

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*Arctic warming poses considerable legal challenges to the region. The fast disappearance of polar ice will increase economic activity, destabilize the environment, and create a host of security issues. Previous discussions have tended to focus on one of these facets in isolation. This Article aims instead to provide the reader with a comprehensive, up-to-date picture of the Arctic region's legal needs.*

*The Article first addresses navigation and natural resource disputes arising from the expected increase in Arctic shipping and hydrocarbon exploitation. It then examines the pollution and conservation challenges this increase in human activity will bring. Finally, it analyzes the human security, law enforcement, and military security issues brought about by the Arctic thaw.*

*The Article concludes by critically evaluating the international community's current institutional responses to Arctic warming and considering possible measures to address current response gaps, including the possibility of a holistic treaty.*

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## INTRODUCTION

The Arctic is warming twice as fast as the rest of world and melting so rapidly that it could become reliably ice-free in summer by the 2030s.<sup>1</sup> The region is unprepared for the considerable economic, environmental, and security challenges this transformation poses. Unlike the Antarctic, which is subject to a binding and holistic framework agreement, the Arctic is governed by a patchwork of sectoral instruments.<sup>2</sup> This Article evaluates the current state of Arctic governance and its adequacy in addressing the consequences<sup>3</sup> of the Arctic thaw.<sup>4</sup>

The Arctic thaw unlocks sea trade routes that could dramatically cut shipping distances compared to routes passing through the Suez or Panama Canals; sailing from Europe to northeast Asia is up to 50 percent shorter through the Northern Sea Route (NSR) over Russia and up to nine thousand kilometers shorter through the Northwest Passage (NWP) over Canada.<sup>5</sup> The Arctic thaw also allows the exploitation of a region thought to hold 13 and 30 percent of the Earth's total oil and natural gas reserves, respectively.<sup>6</sup> This tremendous economic potential is accentuating freedom of navigation and resource distribution disputes previously thought to be of little immediate consequence. In particular, certain states strongly disagree with claims by Ottawa and Moscow that the new sea routes are part of their internal waters and therefore under their unfettered jurisdiction.<sup>7</sup> There is also a multilateral dispute regarding the ownership of the central Arctic Ocean's seabed, where the combination of national claims leaves barely anything as "common heritage of all humankind" for non-Arctic States.<sup>8</sup>

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1. Muyin Wang and James E. Overland, *A Sea Ice Free Summer Arctic within 30 Years: An Update from CMIP5 Models*, 39 GEOPHYSICAL RES. LETTERS L18501 (2012).

2. Antarctic Treaty, Dec. 1, 1959, 402 UNTS 71.

3. This Article focuses on regional challenges of climate change adaptation rather than climate change mitigation. Thus, it does not address how to stop or slow Arctic warming, even though Arctic warming itself magnifies overall global warming through the "albedo effect" and the release of greenhouse gases trapped in permafrost. See Peter Wadhams, *The Global Impacts of Rapidly Disappearing Arctic Sea Ice*, YALE ENVIRONMENT 360 (Sept. 26, 2016), [https://e360.yale.edu/features/as\\_arctic\\_ocean\\_ice\\_disappears\\_global\\_climate\\_impacts\\_intensify\\_wadhams](https://e360.yale.edu/features/as_arctic_ocean_ice_disappears_global_climate_impacts_intensify_wadhams).

4. There is no universally accepted definition of the Arctic. One possible definition is the area north of where trees do not grow anymore. This Article focuses on the "circumpolar Arctic"—the area north of the so-called "Arctic Circle" at 66° 33' North.

5. Vyacheslav Khon et al., *Perspectives of Northern Sea Route and Northwest Passage in the Twenty-First Century*, 100 CLIMACTIC CHANGE 757, 758 (2010).

6. Kenneth J. Bird et al., *Circum-Arctic Resource Appraisal: Estimates of Undiscovered Oil and Gas North of the Arctic Circle: U.S. Geological Survey Fact Sheet FS-2008-3049* (2008), <http://pubs.usgs.gov/fs/2008/3049/>.

7. Michael Byers, INTERNATIONAL LAW AND THE ARCTIC 133, 144 (2013).

8. Shiloh Rainwater, *Race to the North: China's Arctic Strategy and Its Implications*, 66 NAVAL WAR C.R. 62, 74 (Spring 2013); see P.K. Gautam, *The Arctic as a Global Common*, INST. DEF. STUD. & ANALYSES ISSUE BRIEF, (Sept. 2, 2011), [https://www.files.ethz.ch/isn/135416/IB\\_TheArcticasaGlobalCommon.pdf](https://www.files.ethz.ch/isn/135416/IB_TheArcticasaGlobalCommon.pdf); Donald Rothwell, THE POLAR REGIONS AND THE DEVELOPMENT

Meanwhile, the prospect of increased human activity in the Arctic raises pollution and conservation challenges. Increased shipping could have a considerable impact on local ecosystems, for instance through toxic discharges or disturbance of fragile habitats.<sup>9</sup> The difficulty of cleaning oil spills in Arctic conditions also calls for tailored clean-up mechanisms, built on the lessons of the Exxon Valdez disaster in 1989 off the coast of Alaska.<sup>10</sup> Moreover, the Arctic thaw frees access to vast new fishing grounds, which might be vulnerable to the sort of overfishing that nearly wiped out pollock from the neighboring Bering Sea in the 1990s, before the adoption of a regulatory framework.<sup>11</sup>

Finally, the opening of this new ocean also creates a number of security challenges. Increasing human activity in the region will require creating a corresponding emergency response infrastructure, which is easier said than done in an area of the world noted for its great distances and extreme weather conditions. Illegal activities common in other oceans, such as smuggling, poaching, or illegal migration, could also proliferate in the Arctic.<sup>12</sup> The Arctic thaw also forces Arctic states to address new military vulnerabilities. The most direct way for the United States and Russia to militarily confront each other, for instance, goes through the North Pole.<sup>13</sup> Arms control, demilitarization agreements, and confidence-building exercises could go a long way toward ensuring that the Arctic remains peaceful.

The eight members of the Arctic Council (Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden, and the United States) have begun to address some of these problems through binding agreements, which cover the whole region and are specifically tailored to its geographic characteristics.<sup>14</sup> In 2011, the eight Arctic States adopted an agreement on search and rescue in the Arctic, setting minimum standards for emergency response infrastructure and dividing the region into zones of responsibility.<sup>15</sup> They adopted another agreement in 2013 to coordinate Arctic oil spill response.<sup>16</sup> Meanwhile, the International

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OF INTERNATIONAL LAW 452 (1996) (noting that, as with Antarctica, “[t]here has been some discussion as to whether the Arctic is also a region to which the common heritage of mankind concept could apply”).

9. Arctic Council, *Arctic Marine Shipping Assessment 2009 Report* 152-153 (2009), [https://www.pame.is/images/03\\_Projects/AMSA/AMSA\\_2009\\_report/AMSA\\_2009\\_Report\\_2nd\\_print.pdf](https://www.pame.is/images/03_Projects/AMSA/AMSA_2009_report/AMSA_2009_Report_2nd_print.pdf).

10. Sarah Graham, *Environmental Effects of Exxon Valdez Spill Still Being Felt*, SCIENTIFIC AMERICAN (Dec. 19, 2003), <https://www.scientificamerican.com/article/environmental-effects-of/> (discussing the lingering effects of the Exxon Valdez oil spill).

11. Pollock in the Bering Sea is now protected by the Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea, June 16, 1994, 34 I.L.M. 67.

12. See Byers, *supra* note 7, at 261-69.

13. See *id.* at 245-54.

14. The Arctic Council is an informal organization managing Arctic-related environmental and soft security issues. Declaration on the Establishment of the Arctic Council, Ottawa, Canada, Sept. 19, 1996, 35 I.L.M. 1387, <https://oaarchive.arctic-council.org/handle/11374/85> [hereinafter Ottawa Declaration].

15. Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic, May 12, 2011, 50 I.L.M. 1119 (2011) [hereinafter Arctic SAR].

16. Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic, May 15, 2013 [hereinafter Arctic MOPPR].

Maritime Organization (IMO) released a “Polar Code” outlining the minimum requirements ships must satisfy before sailing into the Arctic, requirements that became binding in 2017.<sup>17</sup> This Article will demonstrate, however, that existing Arctic-specific instruments remain highly sectoral and therefore leave many important gaps unfilled.

Most instruments relevant to the Arctic are either non-binding, address only part of the Arctic, or are not specifically tailored to the Arctic. The Arctic Council, despite its iconic status in Arctic governance, is by design a soft law instrument that cannot impose binding decisions upon its members; it serves at most as a forum for negotiating agreements.<sup>18</sup> The so-called OSPAR Convention (Convention for the Protection of the Marine Environment in the North-East Atlantic) offers a robust and binding environmental protection mechanism, but only over the Northeast Atlantic, not the whole Arctic.<sup>19</sup> The United Nations Convention on the Law of the Sea (UNCLOS) provides a comprehensive set of rules applicable to any ocean in the world, but many of these are framework obligations that must still be implemented locally.<sup>20</sup> The central question in Arctic governance, then, is whether the current patchwork of norms can adequately answer the challenges the Arctic will be facing.

There have been growing calls to resolve the challenges of the Arctic thaw through a holistic and binding instrument.<sup>21</sup> Notably, a European Parliament resolution from 2008 suggested such an overarching instrument and explicitly referenced the Antarctic Treaty as a potential source of inspiration.<sup>22</sup> The Antarctic Treaty System designates Antarctica as a peace zone dedicated to scientific research, banning military activity, new territorial claims, and even, to a certain extent, mineral resource exploitation.<sup>23</sup> A holistic Arctic Treaty could similarly attempt to cover economic, environmental, and security concerns, albeit in an oceanic rather than continental setting.

There has been considerable resistance, however, to the idea of a holistic treaty for the Arctic. Scholars like Oran Young, for instance, warn that a treaty

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17. International Code for Ships Operating in Polar Waters, I.M.O. Doc. MSC.385(94) (adopted Nov. 21, 2014) [hereinafter Polar Code]. See also IMO Doc. MSC 94/21/Add.1., Annex 6.

18. Ottawa Declaration, *supra* note 14.

19. Convention for the Protection of the Marine Environment in the North-East Atlantic, Sept. 22, 1992, 2354 U.N.T.S. 67 [hereinafter OSPAR].

20. United Nations Convention on the Law of the Sea, Dec. 10, 1982, 1833 U.N.T.S. 397, <https://treaties.un.org/doc/publication/UNTS/Volume%201833/v1833.pdf> [hereinafter UNCLOS].

21. See, e.g., James Stavridis, *Lessons From the White Continent*, FOREIGN POLICY, (Feb. 23, 2015), <http://foreignpolicy.com/2015/02/23/lessons-from-the-white-continent-arctic-antarctica-nato-russia-north-pole-arctic/>; Timo Koivurova, *Alternatives for an Arctic Treaty — Evaluation and a New Proposal*, 17 REV. EUROPEAN COMMUNITY & INT’L ENVTL. L. 14 (2008); Molly Watson, *An Arctic Treaty: A Solution to the International Dispute Over the Polar Region*, 14 OCEAN & COASTAL L.J. 307 (2008).

22. European Parliament Resolution on Arctic governance, October 9, 2008, <http://www.europarl.europa.eu/sides/getDoc.do?type=TA&reference=P6-TA-20080474&language=EN>.

23. Antarctic Treaty, *supra* note 2; Protocol on Environmental Protection to the Antarctic Treaty, October 4, 1991, 30 I.L.M. 1455, art. 2 (1991).

would require too much political capital for too little added benefit.<sup>24</sup> Indeed, the five Arctic *coastal* States (Canada, Denmark, Norway, Russia, and the United States) have signaled through the Ilulissat Declaration that they consider the general “law of the sea” to provide a sufficient framework for solving Arctic challenges.<sup>25</sup> They “therefore see no need to develop a new comprehensive international legal regime to govern the Arctic Ocean.”<sup>26</sup> This declaration is often read as a statement that UNCLOS is sufficient to address the challenges that will arise in the Arctic Ocean, even if the United States is not a party to it.<sup>27</sup> Confidence in the ability of UNCLOS to resolve Arctic disputes rests in particular on its sophisticated dispute resolution mechanism, which can force member states to accept third-party adjudication or arbitration of disputes regarding the interpretation or application of UNCLOS.<sup>28</sup> As we will see below, though, there are certain exceptions to this compulsory dispute settlement mechanism that are especially relevant to Arctic disputes, notably with respect to boundary delimitation.<sup>29</sup>

The present Article contributes to the ongoing debate on Arctic governance by conducting a general review of Arctic governance as of 2017. Most recent discussion on the topic occurred between 2007, when the planting of a Russian flag at the North Pole triggered fears of an arms and resource race, and 2013, just before the shale gas revolution and tumbling oil prices lessened the profitability of Arctic ventures in the short term.<sup>30</sup> While the eye of the media has moved somewhat away, the Arctic continues to change at a fast pace, irrespective of oil prices. A general review is needed given the number of major developments that have occurred in the past five years, such as the rift with Russia following the Ukraine Crisis and the adoption of the Polar Code through the IMO.<sup>31</sup>

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24. See Oran R. Young, *Whither the Arctic? Conflict or Cooperation in the Circumpolar North*, 45 POLAR REC. 73 (2009); Oran R. Young, *If an Arctic Ocean treaty is not the solution, what is the alternative?*, 47 POLAR REC. 327 (2011); see also John B. Bellinger, *Treaty on Ice*, N.Y. TIMES (June 23, 2008), <http://www.nytimes.com/2008/06/23/opinion/23bellinger.html> (noting that, “[t]hrough it sounds nice, such a treaty would be unnecessary and inappropriate”).

25. Ilulissat Declaration, Arctic Ocean Conference, Ilulissat, Greenland, May 27, 2008, 48 I.L.M. 382 (2009), [http://www.oceanlaw.org/downloads/arctic/Ilulissat\\_Declaration.pdf](http://www.oceanlaw.org/downloads/arctic/Ilulissat_Declaration.pdf).

26. *Id.*

27. Washington does generally recognize UNCLOS provisions as representative of the customary law of the sea, but not when it comes to deep seabed mining: “[B]y express or tacit agreement accompanied by consistent practice, the United States, and states generally, have accepted the substantive provisions of the Convention, other than those addressing deep sea-bed mining, as statements of customary law binding upon them apart from the Convention.” 2 Restatement (Third) of Foreign Relations Law 5 (AM. LAW INST. 1987).

28. UNCLOS, *supra* note 20, at Part XV, § 2.

29. See *infra* Part I.A.3.

30. The question of navigation attracted particular attention during that period. See, e.g., James Kraska, *International Security and International Law in the Northwest Passage*, 42 VAND. J. TRANSNAT’L L. 1109 (2009); Donald Rothwell, *International Straits and Trans-Arctic Navigation*, 43 OCEAN DEV. & INT’L LAW 267 (2012); Olya Gayazova, *China’s Rights in the Marine Arctic*, 28 INT’L J. MARINE & COASTAL L. 61 (2013).

31. See Havard Bergo, *Ukraine Crisis Hurts Arctic Relations*, GLOBAL RISKS INSIGHTS, (Oct. 9, 2014), <https://globalriskinsights.com/2014/10/ukraine-crisis-hurts-arctic-relations/>; Nengye Liu, *Can the*

This Article also covers an exceptionally broad array of Arctic issues. Whereas most arguments for or against an Arctic Treaty have focused exclusively on seabed delimitation, environmental protection, or the shortcomings of the Arctic Council,<sup>32</sup> this Article also addresses topics less frequently discussed in this context, such as freedom of navigation and military security, and concludes by considering all of these facets as a whole.

The Article is divided into three Parts—economy, environment, and security—which methodically examine the issues arising from the Arctic thaw, the governance mechanisms in place to address them, and the gaps these mechanisms leave. Part I covers issues arising from the economic consequences of the thaw, notably freedom of navigation for trans-Arctic shipping and resource attribution on the Arctic seabed. Part II addresses the environmental dimension, especially the pollution accompanying increased shipping and hydrocarbon exploitation, and the conservation of Arctic fauna. Part III focuses on the security consequences of the Arctic thaw, in particular the soft security challenge of policing the Arctic and the hard security challenge of keeping it peaceful. Lastly, the Article concludes with a discussion of how to address the identified governance gaps. It contends in particular that the UNCLOS framework is insufficient to answer the challenges of Arctic warming, and that answering these challenges through a holistic Arctic treaty is preferable to a piecemeal, sectoral approach.

#### I. ECONOMY: ARCTIC TRADE AND ARCTIC OIL

When looking at the Arctic from an economic perspective, it appears that the activities that will become most lucrative once enough ice has thawed will be trans-Arctic shipping and Arctic hydrocarbon exploitation. What matters from a legal perspective for the commercial viability of these activities is the extent of freedom of navigation in Arctic waters and the attribution of resources on the Arctic seabed.

The economic value of trans-Arctic shipping lies in the promise of paradigm-changing fuel cost savings when using the NSR and the NWP, rather

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*Polar Code Save the Arctic?*, 20 ASIL INSIGHTS (March 22, 2017), <https://www.asil.org/insights/volume/20/issue/7/can-polar-code-save-arctic>.

32. See, e.g., Timo Koivurova and Erik J. Molenaar, *International Governance and Regulation of the Marine Arctic*, WORLD WILDLIFE FUND (2009), <http://www.wwf.se/source.php/1223579/International%20Governance%20and%20Regulation%20of%20the%20Marine%20Arctic.pdf> (discussing the gaps in the current regulatory regime in the Arctic in light of the effects of climate change); Alf Hakon Hoel, *Do We Need a New Legal Regime for the Arctic Ocean?*, 24 INT'L J. MARINE & COASTAL L. 443 (2009) (examining whether the current Arctic governance framework is an obstacle to managing marine resources in light of climate change); Torbjorn Pedersen, *Debates over the Role of the Arctic Council*, 43 OCEAN DEV. & INT'L L. 146 (2012) (examining debates over the political role of the Arctic Council); E.J. Molenaar, *Current and Prospective Roles of the Arctic Council System within the Context of the Law of the Sea*, 27 INT'L J. MARINE & COASTAL L. 553 (2012) (examining the role of regional cooperation under the law of the sea).

than using the Suez or Panama Canal routes.<sup>33</sup> Meanwhile, the interest in hydrocarbon exploitation arises from the sheer abundance of Arctic reserves, attracting giant projects such as the Exxon-Rosneft venture described as a “\$500 billion” deal.<sup>34</sup> Admittedly, as of 2017, low oil prices still hamper the commercial viability of both activities. The oil savings from trans-Arctic shipping and the profits of Arctic oil exploitation may not currently match the high insurance and icebreaker escort costs for shipping, and the difficulty of drilling for oil through thick ice in extreme climate and weather conditions.<sup>35</sup> That said, it may be only a matter of time until rising oil prices and Arctic thaw allow these activities to unfold their full potential.<sup>36</sup>

Legally speaking, however, the commercial viability of trans-Arctic shipping also depends on the extent of navigational rights in the Arctic. An Arctic Council report warned in this respect that:

The jurisdictional status of some Arctic waters, in particular internal waters and straits used (or potentially to be used) for international navigation, remains controversial and could give rise to future disputes concerning the exercise of national jurisdiction over international navigation through those waters.<sup>37</sup>

Regarding hydrocarbon exploitation, the key legal issue will be certainty of title, because offshore exploitation requires a significant amount of investment. Although large portions of Arctic hydrocarbon reserves appear to be in areas clearly attributed to individual coastal states, there are some gray zones, particularly in the central Arctic Ocean. This Part will address freedom of navigation and resource attribution in turn.

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33. See Khon et al., *supra* note 5, at 758.

34. Douglas Busvine and Vladimir Soldatkin, *Exxon, Rosneft Unveil \$500 Billion Offshore Venture*, REUTERS (Apr. 18, 2012), <http://www.reuters.com/article/us-exxon-rosneft/exxon-rosneft-unveil-500-billion-offshore-venture-idUSBRE83H0UE20120418>.

35. Orts Hansen et al., *Arctic Shipping—Commercial Opportunities and Challenges*, CBS MARITIME 55, 62 (2016), <https://services-webdav.cbs.dk/doc/CBS.dk/Arctic%20Shipping%20-%20Commercial%20Opportunities%20and%20Challenges.pdf>.

36. *Id.*; see also Ed Struzik, *Shipping Plans Grow as Arctic Ice Fades*, YALE ENVIRONMENT 360 (Nov. 17, 2016), [https://e360.yale.edu/features/cargo\\_shipping\\_in\\_the\\_arctic\\_declining\\_sea\\_ice](https://e360.yale.edu/features/cargo_shipping_in_the_arctic_declining_sea_ice) (examining an increasing interest in Arctic shipping opportunities).

37. Arctic Council, *supra* note 9, at 51.



### A. Freedom of Navigation on Arctic Trade Routes

#### 1. Issues: Internal Waters or International Straits?

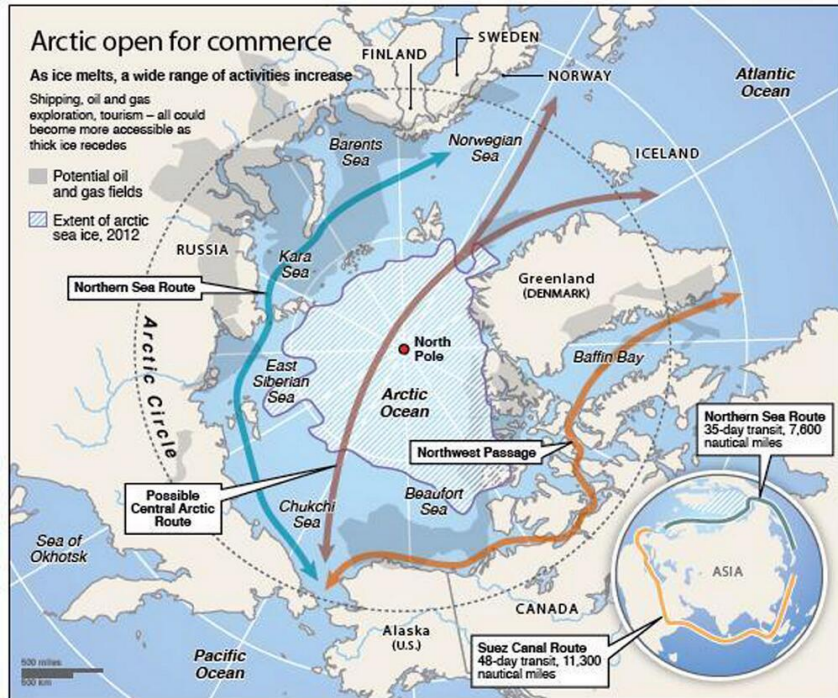


Figure 1

The Arctic Ocean is a remarkably enclosed ocean, with access limited to three chokepoints: the Bering Strait between Russia and the United States, the Davis Strait between Canada and Greenland, and the Greenland-Iceland-United Kingdom Gap. Only two routes currently connect these chokepoints: the NWP, which connects the Northwest Atlantic to the Bering Strait, and the NSR, which connects the Bering Strait to the Greenland-Iceland-United Kingdom Gap. Control over these two routes is therefore of great strategic significance.<sup>38</sup> A Transpolar Route going through the central Arctic Ocean may also become commercially viable later in the century when more ice has melted, though it remains too dangerous without icebreakers for now.<sup>39</sup>

Canada and Russia claim that at least parts of the NWP and NSR lie within their internal waters.<sup>40</sup> They therefore require ships passing through to seek their

Fig. 1 Source: <http://www.businessinsider.com/a-cargo-ship-just-completed-a-historic-trip-through-the-northwest-passage-2014-10>.

38. Donald D. Rothwell, *Canada and the United States*, in GOVERNANCE OF ARCTIC SHIPPING: BALANCING RIGHTS AND INTERESTS OF ARCTIC STATES AND USER STATES 217, 219 (Robert C. Beckman et al., eds., 2017).

39. See Struzik, *supra* note 36.

40. See Byers, *supra* note 7, at 133, 144.

permission and conform to Canadian or Russian regulations, respectively. Canada for instance reserves the right to refuse passage through the NWP to ships that do not conform to Canadian environmental regulations,<sup>41</sup> while Russian law requires ships using the NSR to seek permission from the Russian government and conform to Russian navigation standards.<sup>42</sup> The United States, and to a lesser extent the European Union, have protested these requirements in the name of freedom of navigation.<sup>43</sup> The United States notably has argued that relevant parts of the NWP and the NSR are international straits, which do not require permission to navigate.<sup>44</sup>

Canada's claim that certain areas around the High Arctic islands are its internal waters is based on the "straight baselines" concept from the *Anglo-Norwegian Fisheries* case,<sup>45</sup> as well as historic use and occupation of the sea ice by Canadian indigenous people.<sup>46</sup> As Michael Byers points out, these claims were contested by both the United States and the European Union (then the European Community) within a few months of Canada's internal waters declaration on September 10, 1985.<sup>47</sup> The United Kingdom note on behalf of the European Community takes issue in particular with the way the baselines were traced and the alleged existence of a historic title:

The validity of the baselines with regard to other states depends upon the relevant principles of international law applicable in this case, including the principle that the drawing of baselines must not depart to any appreciable extent from the general direction of the coast. The Member States acknowledge that elements other than purely geographical ones may be relevant for purposes of drawing baselines in particular circumstances but are not satisfied that the present baselines are justified in general. Moreover, the Member States cannot recognize the validity of a historic title as justification for the baselines drawn in accordance with the order.<sup>48</sup>

As far as the NSR is concerned, Russia made internal waters claims in the following aide-mémoire from 1964, sent in response to U.S. vessels surveying the Laptev and East Siberian sea:

The Northern seaway route is situated near the Arctic coast of the USSR. This route, quite distant from international seaways, has been used and is used only by ships belonging to the Soviet Union or chartered in the name of

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41. Arctic Waters Pollution Prevention Act, R.S.C., 1985, c. A-12, §§.11,12.

42. Federal Law No. 132-FZ, July 28, 2012, amending Federal Law No. 155 FZ July 31, 1998.

43. Byers, *supra* note 7, at 133-34, 138-39, 144-45.

44. See Arctic Region Policy, National Security Presidential Directive 66/Homeland Security Presidential Directive 25, § III(B)(5) (Jan. 9, 2009), available at <https://fas.org/irp/offdocs/nspd/nspd-66.htm>.

45. Straight baselines allow states to claim certain areas as internal waters in complex coastlines. Fisheries Case (UK v. Norway), Judgment, 1951 I.C.J. Rep. 116, at 128-33 (Dec. 18).

46. Byers, *supra* note 7, at 132, 133, 138.

47. *Id.* at 7, 133, 138.

48. U.S. Dep't of State, Office of Ocean Affairs, *United States Responses to Excessive National Maritime Claims* 29-30 (1992), [www.state.gov/documents/organization/58381.pdf](http://www.state.gov/documents/organization/58381.pdf) (citing British High Commission Note No. 90/86 (Jul. 9, 1986)).

the Northern Seaways. . . It should also be kept in mind that the northern seaway route at some points goes through Soviet territorial and internal waters. Specifically, this concerns all straits running west and east into the Karsky Sea. Inasmuch as they are overlapped two-fold by Soviet territorial waters, as well as by the Dmitry, Laptev and Sannikov Straits, which unite the Laptev and Eastern Siberian Seas and belong historically to the Soviet Union. Not one of these stated straits, as is known, serves for international navigation. Thus over the waters of these straits the statute for the protection of the state borders of the USSR fully applies, in accordance with which foreign military ships will pass through territorial seas and enter internal waters of the USSR after advance permission of the Government of the USSR.<sup>49</sup>

The United States responded that it was not aware of any basis for a historic claim to the Dmitry, Laptev, and Sannikov straits, and with respect to the straits of the Karsky Sea “pointed out that there is a right of innocent passage of all ships through straits used for international navigation between two parts of the high seas and that this right cannot be suspended.”<sup>50</sup> In 1985 Moscow consolidated its claims over what would become the NSR by a strategic tracing of straight baselines, connecting the island groups of Novaya Zemlya, Severnaya Zemlya, and the New Siberian islands to the Russian mainland.<sup>51</sup> There has since the 1960s been “little further attempt by the United States or any other state actively to assert a right of freedom of navigation for its ships through the Russian Arctic Straits,” as Donald Rothwell pointed out.<sup>52</sup>

## 2. *Instruments: UNCLOS on Freedom of Navigation*

The central mechanism for resolving freedom of navigation issues in the Arctic today is UNCLOS.<sup>53</sup> Under UNCLOS, a coastal state’s jurisdiction is at its maximum in *internal* waters, which are subject to the state’s full jurisdiction and where there is no freedom of navigation *per se*.<sup>54</sup> Jurisdiction decreases the further one is from the coast. In the *territorial* waters up to 12 nautical miles (nmi) from shore, the coastal state has extensive regulatory powers, but must respect the flag state’s right of “innocent passage.”<sup>55</sup> In the *contiguous zone* 12 nmi beyond the territorial sea, the coastal state can still enforce regulations related to customs, taxation, immigration, and pollution, if necessary by “hot

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49. *Id.* at 71.

50. *Id.*

51. Byers, *supra* note 7, at 146–47.

52. Rothwell, *supra* note 8, at 205.

53. See generally Yoshifumi Tanaka, *Navigational Rights and Freedoms*, in THE OXFORD HANDBOOK OF THE LAW OF THE SEA 536 (Donald R. Rothwell et al. eds., 2015).

54. Coalter G. Lathrop, *Baselines*, in THE OXFORD HANDBOOK OF THE LAW OF THE SEA 69, 70 (Donald R. Rothwell et al. eds., 2015).

55. The flag state is the state that granted its nationality and right to fly its flag to a ship. UNCLOS, *supra* note 20, at arts. 17, 21, 25, 91.

pursuit” out of the territorial waters.<sup>56</sup> In the *exclusive economic zone* (EEZ) up to 200 nmi from shore, foreign vessels retain broad navigational rights, but still have an obligation of due regard for the coastal state’s rights and interests.<sup>57</sup> The coastal state has regulatory and enforcement rights in the EEZ for fishing, the protection of the marine environment, marine scientific research, and the establishment and use of certain structures on the sea.<sup>58</sup> Note that the lone Arctic-specific provision of UNCLOS, Art. 234, provides coastal states additional regulatory and enforcement jurisdiction in their EEZs for the prevention of marine pollution in habitually ice-covered areas, albeit in terms that remain relatively vague.<sup>59</sup> In the *high seas*, finally, the flag state has full freedom of navigation, mitigated only by an obligation of due regard for the interests of other high seas users.<sup>60</sup>

Since the jurisdiction of coastal states is strongest in the territorial sea and internal waters, these states have an interest in delimiting these areas as broadly as possible. While in most cases they must delimit the outer edge of their territorial sea in parallel to their actual coastline, complex coastlines allow for more creative delimitation through the “straight baselines” doctrine of the *Anglo-Norwegian Fisheries* case.<sup>61</sup> Under UNCLOS, the tracing of straight baselines is allowed “where the coastline is deeply indented and cut into, or if there is a fringe of islands along the coast in its immediate vicinity.”<sup>62</sup> To prevent the drawing of unduly extensive baselines, UNCLOS requires that the baselines “not depart to any appreciable extent from the general direction of the coast,” and that “the sea areas lying within the lines . . . be sufficiently closely linked to the land domain to be subject to the regime of internal waters.”<sup>63</sup> These criteria nevertheless leave much room for subjective determinations and have therefore led to considerable litigation between states.<sup>64</sup>

Flag states may, however, expect a more permissive navigation regime in bodies of water characterized as international straits than they can in foreign

56. *Id.* at arts. 33, 111.

57. *Id.* at art. 58(3).

58. *Id.* at arts. 56(1), 60(1), 60(2).

59. Art. 234 of UNCLOS only details the conditions in which additional environmental jurisdiction in ice-covered areas may be exercised, without specifying the extent of additional rights the coastal state enjoys in these conditions:

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 . . . .

*Id.* at art. 234.

60. *Id.* at art. 87.

61. *Fisheries Case (UK v. Norway)*, 1951 I.C.J. Rep. at 128–33.

62. UNCLOS, *supra* note 20, at art. 7(1).

63. *Id.* at art. 7(3).

64. Lathrop, *supra* note 54, at 72, 85–88.

territorial seas or internal waters. In the seminal *Corfu Channel* case, the International Court of Justice defined international straits as straits “connecting two parts of the high seas” that are “used for international navigation.”<sup>65</sup> This geographic and functional definition is still used for interpreting UNCLOS provisions that today apply to “international straits.”<sup>66</sup> Under UNCLOS, international straits provide vessels with a right of “transit passage” that is more extensive than the right of “innocent passage” accorded in a foreign territorial sea.<sup>67</sup> Innocent passage allows vessels to sail through foreign territorial waters without asking for the coastal state’s permission (unlike in internal waters), on condition that the passage be continuous, expeditious, and not prejudicial to the peace, good order, or security of the coastal state.<sup>68</sup> Transit passage must also be continuous and expeditious, but generally requires respect of only international law rather than the domestic laws and regulations of the states bordering the straits.<sup>69</sup> Other differences include that coastal states may temporarily suspend the right of innocent passage but not that of transit passage, that aircraft may not invoke innocent passage but may invoke transit passage, and that submarines must surface and show their flag in innocent passage but not in transit passage.<sup>70</sup>

Disagreement over whether a body of water falls under the regime of internal waters, territorial sea or international straits may culminate in litigation. While disputes in international law can normally only be adjudicated by a third party if both parties to the dispute agree to it, UNCLOS allows for the compulsory settlement of disputes over the interpretation or application of its provisions.<sup>71</sup> Therefore, if the parties to such a dispute fail to reach a settlement through negotiation, one of the parties may unilaterally submit the dispute to binding adjudication or arbitration before the International Tribunal for the Law of the Sea, the International Court of Justice, or a special arbitral tribunal.<sup>72</sup> UNCLOS explicitly mentions the applicability of compulsory settlement to freedom of navigation disputes.<sup>73</sup> Parties to UNCLOS may nevertheless invoke optional exceptions to exclude disputes on sea boundary delimitation or historic titles from the jurisdictional scope of the UNCLOS compulsory dispute settlement mechanism.<sup>74</sup> The tribunal in *Philippines v. China* found that a dispute would be excluded from jurisdiction if one of the parties to a dispute had invoked the delimitation exception and resolving the dispute “would require the Tribunal to first render a decision on sovereignty, either expressly or implicitly,”

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65. *Corfu Channel (UK v. Albania)*, Judgment, Merits, 1949 I.C.J. Rep. 4, at 28 (Apr. 9).

66. UNCLOS, *supra* note 20, at art. 37.

67. Donald R. Rothwell, *International Straits*, in *THE OXFORD HANDBOOK OF THE LAW OF THE SEA* 114, 121–22 (Donald R. Rothwell et al. eds., 2015).

68. *Id.*; UNCLOS, *supra* note 20, at arts. 18, 19.

69. UNCLOS, *supra* note 20, at arts. 38(2), 39.

70. *Id.* at arts. 20, 25, 39(3).

71. *Id.* at art. 286.

72. *Id.* at art. 287.

73. *Id.* at art. 297(1)(a).

74. *Id.* at art. 298(1)(a).

which is arguably the case in a dispute over the navigational regime of a body of water between two islands of a single country.<sup>75</sup>

### 3. Gaps: Compulsory Settlement Unavailable

While it may seem at first glance that UNCLOS satisfactorily regulates the navigation regime in the Arctic, its application is complicated by the difficulty of categorizing the Arctic's two main potential trading routes and judging the extent of a coastal state's jurisdiction for environmental protection norms in the Arctic.

It is clear under UNCLOS that vessels have full freedom of navigation in the central Arctic Ocean, beyond 200 nmi from the coasts of Arctic States.<sup>76</sup> Within 200 nmi, that freedom of navigation would be mitigated by the relevant Arctic coastal state's sovereign right to enforce certain norms related to fishing, environmental protection, marine scientific research, and offshore structures.<sup>77</sup> And in the territorial sea within 12 nmi of an Arctic State's coast, vessels would have a right to innocent passage, but would be subject to the coastal state's enforcement of customs, taxation, immigration, and anti-pollution norms.<sup>78</sup> It is not entirely clear, however, to what extent Art. 234 grants additional environmental jurisdiction in ice-covered parts of the EEZ.

Furthermore, what matters most for navigation in Arctic is the regime applicable for the NWP and NSR, and it is precisely on this point that UNCLOS provisions are unable to prevent dispute. Canada and Russia insist on an "internal waters" regime that is more stringent than the territorial sea regime, insofar as it would give those nations a right to refuse passage based on noncompliance with their own domestic norms. The United States, however, believes that the NWP and NSR should be subject to an "international straits" regime that is even more lax than the territorial sea regime, as it would give foreign vessels a broader right of transit passage that cannot be suspended. Clarification of the "international straits" and "straight baseline" concepts by an international court or tribunal is necessary to solve these disagreements.

It is unlikely that the disputes over the NWP and NSR can be solved through the UNCLOS compulsory dispute settlement mechanism. Although UNCLOS explicitly provides that compulsory settlement is available for freedom of navigation disputes, Canada and Russia have both invoked optional exceptions to the compulsory settlement of disputes involving their sea boundaries or historic titles.<sup>79</sup> Since determining whether the NWP and NSR include internal

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75. S. China Sea Arbitration (Phil. v. China), Award on Jurisdiction and Admissibility, Award, PCA Case No. 2013-19, ¶153 (Perm. Ct. Arb. Oct. 29, 2015).

76. UNCLOS, *supra* note 20, at art. 87.

77. *Id.* at arts. 56(1), 60(1), 60(2).

78. *Id.* at art. 17, 21, 25, 91.

79. Declaration by the Russian Federation upon Ratification of the United Nations Convention on the Law of the Sea (Mar. 12, 1997), [http://www.un.org/depts/los/convention\\_agreements/ convention\\_](http://www.un.org/depts/los/convention_agreements/convention_)

waters involves issues of sea boundary delimitation and historic title, the question appears to be beyond the reach of the UNCLOS compulsory dispute settlement mechanism.<sup>80</sup>

The unavailability of UNCLOS compulsory settlement for clarifying the navigation regime of the NWP and NSR suggests that the applicable navigation regime will in practice be dictated by Canada and Russia, assuming they refuse voluntary adjudication of the dispute. Indeed, it may be difficult for vessels traversing the NWP and NSR to ignore Canada and Russia's positions, since defying these countries' understanding of their rights could lead to them denying entry into their ports (blacklisting) or denying important services such as icebreaker escorts.<sup>81</sup>

In the end, it appears that the dispute over the navigation regime for the NWP and NSR will persist, because Canada and Russia are legally and practically in a position of strength. Any attempt to formally change the status quo would probably require convincing Canada and Russia to allow a more permissive navigation regime. Byers, for instance, proposes the recognition of an intermediate navigational regime between that of international straits and internal waters, grounded on the extended environmental management jurisdiction provided by Art. 234.<sup>82</sup> Under this proposal, environmental regulation would be used as a pretext for modifying the UNCLOS navigation regime in those specific areas—essentially a face-saving proposition for all parties.

### *B. Resource Attribution in the Central Arctic Ocean*

#### *1. Issues: Is the Central Arctic Part of a Shelf?*

As the Arctic thaw unlocks access to the rich resources of the region, one key question is to whom these resources belong—especially in the central Arctic Ocean. When Russian explorer and Congressman Artur Chilingarov planted a Russian flag at the geographic North Pole in 2007, Canadian Foreign Minister Peter McKay countered, “We’ve established a long time ago that these are Canadian waters and this is Canadian property. You can’t go around the world these days dropping a flag somewhere. This isn’t the 14th or 15th century.”<sup>83</sup>

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declarations.htm; Declaration by Canada upon Ratification of the United Nations Convention on the Law of the Sea (Nov. 7, 2003), [http://www.un.org/depts/los/convention\\_agreements/convention\\_declarations.htm](http://www.un.org/depts/los/convention_agreements/convention_declarations.htm).

80. See UNCLOS, *supra* note 20, at art. 286.

81. Note, however that military submarines may be ignoring the Canadian and Russian positions with impunity for now, as suggested by the recurrent unauthorized transit of U.S. submarines through the NWP. See Byers, *supra* note 7, at 168.

82. *Id.* at 167.

83. Gloria Galloway & Alan Freeman, *Ottawa Assails Moscow's Arctic Ambition*, THE GLOBE & MAIL (Aug. 3, 2007), <https://beta.theglobeandmail.com/technology/science/ottawa-assails-moscows-arctic-ambition/article20400157/?ref=http://www.theglobeandmail.com&>.

World media soon buzzed with talk of a resource race for the Arctic.<sup>84</sup> Yet the five Arctic coastal States (Canada, Denmark, Norway, Russia, and the United States) denied there was a race by agreeing in the Ilulissat Declaration of 2008 that all sovereignty claims would be settled in accordance with the law of the sea.<sup>85</sup> At the same time, they discouraged other states with potential Arctic interests from questioning this approach. The Arctic States require any state wishing to join the Arctic Council as an observer to “[r]ecognize Arctic States’ sovereignty, sovereign rights and jurisdiction in the Arctic,” and to “[r]ecognize that an extensive legal framework applies to the Arctic Ocean including, notably, the Law of the Sea, and that this framework provides a solid foundation for responsible management of this Ocean.”<sup>86</sup> Did this suggest that the Arctic States sought to carve the Arctic up between themselves, fearing that negotiations for a holistic Arctic Treaty could lead non-Arctic states to demand the recognition of large “common heritage of all humankind” areas in the central Arctic Ocean?



Figure 2

As things stand, the Arctic States have laid claim to the great majority of the region’s seabed and subsoil, leaving to non-Arctic States only two relatively

Fig. 2 Source: <https://www.economist.com/news/international/21636756-denmark-claims-north-pole-frozen-conflict>.

84. Terry Macalister, *U.S. and Russia Stir Up Political Tensions over Arctic*, THE GUARDIAN (July 6, 2011), <https://www.theguardian.com/world/2011/jul/06/us-russia-political-tensions-arctic>.

85. Karen N. Scott & David L. Vanderzwaag, *Polar Oceans and Law of the Sea*, in THE OXFORD HANDBOOK OF THE LAW OF THE SEA 724, 733 (Donald R. Rothwell et al. eds., 2015).

86. SENIOR ARCTIC OFFICIALS (SAO) REPORT TO MINISTERS, NUUK, GREENLAND, MAY 2011, at 50, [https://www.arcticobserving.org/images/pdf/Board\\_meetings/5th\\_tromso/sao\\_report\\_to\\_ministers\\_-\\_nuuk\\_ministerial\\_meeting\\_may\\_2011.pdf](https://www.arcticobserving.org/images/pdf/Board_meetings/5th_tromso/sao_report_to_ministers_-_nuuk_ministerial_meeting_may_2011.pdf).



small and resource-poor areas near the geographic North Pole.<sup>87</sup> When States claim seabed, they claim it as a continuation of their continental margin, following a slope starting at their coast that goes deeper and deeper until it stops abruptly at the so-called “foot” of the slope.<sup>88</sup> Most continental shelf disputes between Arctic coastal States have already been resolved, generally through agreements like the 1973 Canada-Denmark Boundary Treaty,<sup>89</sup> the 1990 Bering Sea Treaty between the Soviet Union and the United States,<sup>90</sup> and the 2010 Barents Sea Treaty between Norway and Russia.<sup>91</sup> The most significant outstanding continental shelf dispute concerns the seabed of the central Arctic Ocean—that is to say, the seabed beyond 200 nmi off the coasts of Arctic States.<sup>92</sup> A lesser dispute involves the Beaufort Sea between Canada and the United States.<sup>93</sup>

Canada, Denmark, and Russia currently dispute ownership over the seabed of large parts of the central Arctic Ocean.<sup>94</sup> The disputes focus in particular on two seabed features: the Lomonosov and Alpha/Mendelev Ridges.<sup>95</sup> Ridges are underwater features that slope up rather than down, making it unclear whether they should be considered to be part of the continental shelf or marking its end.<sup>96</sup> States typically use scientific arguments based on geological history or soil composition to swing the conclusion in their favor.<sup>97</sup>

In this case, Russia claims about three-fifths of the Lomonosov Ridge, just enough to cover the North Pole itself.<sup>98</sup> Byers interprets this claim as indicating self-restraint, since the Russian reasoning could technically have led to a claim

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87. See Rainwater, *supra* note 8, at 74; Gautam, *supra* note 8; Rothwell, *supra* note 8, at 452.

88. See UNCLOS, *supra* note 20, at art. 76(3).

89. Agreement Relating to the Delimitation of the Continental Shelf, Den.-Can., Dec. 17, 1973, 950 U.N.T.S. 152.

90. Agreement on the Maritime Boundary, U.S.S.R.-U.S., Jun. 1, 1990, 29 I.L.M. 941.

91. Treaty Concerning Maritime Delimitation and Cooperation in the Barents Sea and the Arctic Ocean, Russ.-Nor., Sep. 15, 2010, 2791 U.N.T.S. 3.

92. See Byers, *supra* note 7, at 92–127.

93. This dispute is merely bilateral and will not be discussed in detail here. See Byers, *supra* note 7, at 56–91.

94. See Canada, *Partial Submission of Canada to the Commission on the Limits of the Continental Shelf Regarding its Continental Shelf in the Atlantic Ocean: Executive Summary* (2013), [http://www.un.org/depts/los/clcs\\_new/submissions\\_files/can70\\_13/es\\_can\\_en.pdf](http://www.un.org/depts/los/clcs_new/submissions_files/can70_13/es_can_en.pdf); Kingdom of Denmark and Greenland, *Partial Submission of the Government of the Kingdom of Denmark Together with the Government of Greenland to the Commission on the Limits of the Continental Shelf: The Northern Continental Shelf of Greenland: Executive Summary* (2014), [http://www.un.org/depts/los/clcs\\_new/submissions\\_files/dnk76\\_14/dnk2014\\_es.pdf](http://www.un.org/depts/los/clcs_new/submissions_files/dnk76_14/dnk2014_es.pdf); Russian Federation, *Partial Revised Submission of the Russian Federation to the Commission on the Limits of the Continental Shelf In Respect of the Continental Shelf of the Russian Federation in the Arctic Ocean: Executive Summary* (2015), [http://www.un.org/depts/los/clcs\\_new/submissions\\_files/rus01\\_rev15/2015\\_08\\_03\\_Exec\\_Summary\\_English.pdf](http://www.un.org/depts/los/clcs_new/submissions_files/rus01_rev15/2015_08_03_Exec_Summary_English.pdf). See also Levon Sevunts, *Why Canada Can't Have the North Pole*, RADIO CANADA INTERNATIONAL (May 8, 2016), <http://www.rcinet.ca/en/2016/05/08/why-canada-cant-have-the-north-pole/>.

95. See Sevunts, *supra* note 94.

96. See Byers, *supra* note 7, at 96–104.

97. See UNCLOS, *supra* note 20, at Annex II, art. 4.

98. See Russian Federation, *supra* note 94, at 7 (containing the latest iteration of Russian claims).

over the whole ridge.<sup>99</sup> Denmark and Greenland, by contrast, laid claim over the whole.<sup>100</sup> Canada is expected to make its formal claim in 2018, so it is not yet clear whether it will cover the ridge in part or in full.<sup>101</sup> Russia also claims for itself the so-called Mendeleev Ridge, but Canada could challenge this claim, too. Canada may claim the nearby Alpha Ridge and could argue that the two are actually a single feature.<sup>102</sup> The United States cannot make a formal claim in the context of UNCLOS so long as it does not ratify the treaty.<sup>103</sup> Its continental shelf is not expected to reach to the North Pole, but instead to be delimited by the “Baker-Shevardnaze” line of the 1990 Bering Sea Treaty with Russia and by whatever agreement it reaches with Canada on the Beaufort Sea.<sup>104</sup>

Russia applied to the UNCLOS Commission on the Limits of the Continental Shelf (CLCS) in 2001, after ratifying the Convention in 1997, to register its claims that the seabed up to the Lomonosov and Mendeleev Ridges is part of the Russian continental shelf.<sup>105</sup> It was the first ever application to the CLCS, and the Commission issued a recommendation requiring additional scientific evidence for that claim.<sup>106</sup> Russia has conducted ten scientific expeditions over the years to strengthen its claim and submitted a revised claim in August 2015, providing additional evidence in February 2016.<sup>107</sup> Canada submitted a preliminary application in 2013, after ratifying UNCLOS in 2003, and Denmark submitted a complete application in 2014, after ratifying UNCLOS in 2004.<sup>108</sup> The CLCS initially indicated that the Lomonosov Ridge could not be considered a submarine elevation (i.e. an underwater feature capable of being claimed as an extension of a state’s outer continental shelf (OCS)), but it is now reviewing the additional evidence that the interested members have presented to it.<sup>109</sup> Interestingly, the United States, despite not being party to UNCLOS, sent a letter to the CLCS in 2002 arguing that the Lomonosov Ridge was “a

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99. Byers, *supra* note 7, at 107.

100. See Kingdom of Denmark and Greenland, *supra* note 94, at 12.

101. See generally Associated Press in Toronto, *Canada to Claim North Pole as Its Own*, THE GUARDIAN (Dec. 9, 2013), <https://www.theguardian.com/world/2013/dec/10/canada-north-pole-claim>.

102. See Byers, *supra* note 7, at 106–07.

103. Scott & Vanderzwaag, *supra* note 85, at 733.

104. See Byers, *supra* note 7, at 35.

105. Press Release, Office of Legal Affairs, Commission on Limits of Continental Shelf Receives Its First Submissions, U.N. Press Release SEA/1729 (Dec. 21, 2001), <http://www.un.org/press/en/2001/sea1729.doc.htm>.

106. U.N. Secretary-General, *Oceans and the Law of the Sea: Report of the Secretary General: Addendum*, ¶41, U.N. Doc. A/57/57/Add.1 (Oct. 8, 2002), <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N02/629/28/PDF/N0262928.pdf?OpenElement>.

107. Ekaterina Klimentko, *Russia’s Arctic Security Policy: Still Quiet in the High North?*, Policy Paper No. 45, STOCKHOLM INT’L PEACE RESEARCH INSTITUTE, Feb. 2016, at 12, <https://www.sipri.org/publications/2016/sipri-policy-papers/russias-arctic-security-policy-still-quiet-high-north>.

108. Canada, *supra* note 94, at 3; Kingdom of Denmark and Greenland, *supra* note 94, at 5.

109. The original statement of the CLCS concerning the Lomonosov Ridge was as follows: “The Commission recommends that according to the materials provided in the submission the Lomonosov Ridge cannot be considered a submarine elevation under the Convention.” Russian Federation, *supra* note 94, at 5.

freestanding feature in the deep, oceanic part of the Arctic Ocean Basin, and not a natural component of the continental margins of either Russia or any other State.”<sup>110</sup> This still appears to be the official U.S. position, even though some State Department representatives have since commented that the U.S. view of the scientific complexities in that area is evolving.<sup>111</sup>

## 2. Instruments: UNCLOS on Shelf Delimitation

As in the context of navigation, UNCLOS is the central mechanism for resolving seabed resource attribution issues in the Arctic today. According to the UNCLOS “continental shelf” regime, a coastal state has sovereign exploration and exploitation rights over the seabed and subsoil resources up to 200 nmi from its coast.<sup>112</sup> The continental margin is defined in UNCLOS 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,” not including the deep ocean floor.<sup>113</sup> Unlike EEZ rights concerning the water, however, a state’s continental shelf rights concerning the seabed can extend beyond 200 nmi if the shelf itself naturally continues beyond that point.<sup>114</sup> Rights over the OCS can extend to a maximum of 350 nmi from the coast or 100 nmi from the 2500-meter isobath.<sup>115</sup> When states like Canada, Denmark, and Russia claim sovereignty over the North Pole, they do so on the basis of an OCS claim.<sup>116</sup> Note that a recognized OCS does not affect the rights of other states in the water column above, as the EEZ can still only stretch to 200 nmi from the coast.<sup>117</sup> In other words, even if a state’s OCS claim on the North Pole seabed were recognized, the waters above would still remain freely navigable international waters. Under UNCLOS, seabed not claimed as part of any country’s continental shelf is considered “common heritage of mankind” and can be exploited by UNCLOS members in accordance with the provisions of Part XI under the management of the International Seabed Authority.<sup>118</sup>

It is not clear from the text of UNCLOS whether seafloor highs like the Lomonosov Ridge can be considered part of an OCS.<sup>119</sup> UNCLOS distinguishes

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110. Permanent Rep. of U.S. to the U.N., Letter dated Feb. 28, 2002 from the Permanent Rep. of U.S. to the United Nations addressed to the U.N. Legal Counsel, U.N. Doc. CLCS.01.2001.LOS/USA (Mar. 18, 2002), [http://www.un.org/depts/los/clcs\\_new/submissions\\_files/rus01/CLCS\\_01\\_2001\\_LOS\\_USA\\_text.pdf](http://www.un.org/depts/los/clcs_new/submissions_files/rus01/CLCS_01_2001_LOS_USA_text.pdf).

111. See Byers, *supra* note 7, at 108 n.80 (citing Betsy Baker, *Law, Science, and the Continental Shelf: The Russian Federation and the Promise of Arctic Cooperation*, 25 AM. U. INT’L L. REV. 251, 269–70 (2010)).

112. UNCLOS, *supra* note 20, at art. 76(1), 77.

113. *Id.* at art. 76(3).

114. *Id.* at arts. 57, 76(4).

115. Isobath refers to the depth of a point under water. *Id.* at art. 76(5).

116. *Id.* at art. 76(4).

117. *Id.* at art. 78.

118. *Id.* at Part XI.

119. See Ron Macnab, *Submarine Elevations and Ridges: Wild Cards in the Poker Game of UNCLOS Article 76*, 39 OCEAN DEV. & INT’L L. 223 (2008).

“oceanic ridges” that are part of the deep ocean floor from “submarine ridges” and “submarine elevations” that are part of the continental shelf.<sup>120</sup> It does not give much guidance that could help identify those features, however, only providing that submarine elevations are “natural components of the continental margin, such as its plateaux, rises, caps, banks and spurs.”<sup>121</sup> A highly technical debate has developed regarding the definition of these three types of features, discussing their crust, geological origin, continuity with landmass, etc.<sup>122</sup> Byers summarizes the emerging consensus as follows:

Oceanic ridges are usually, but not always, composed of oceanic crust, lie beyond the geomorphological continental margin and are therefore associated with the deep ocean floor. They cannot contribute to the establishment of the outer limit of the continental shelf. Submarine ridges are geomorphologically related to the continental margin while being geologically discontinuous from it, and national jurisdiction is limited to 350 nautical miles from shore. Submarine elevations are both geomorphologically related and geologically continuous with the landmass of the coastal state, in terms of crust type and/or geological origin. They are therefore natural components of the continental margin and national jurisdiction is limited to either 350 nautical miles or 100 nautical miles beyond the 2,500-meter isobath, whichever is (at any given point) further from shore.<sup>123</sup>

That being said, these elements of identification are still sufficiently vague that states can disagree in good faith with each other or the CLCS over the characterization of a seafloor high as oceanic ridge, submarine ridge, or submarine elevation.<sup>124</sup>

Whether a state’s proclaimed OCS binds other states appears to depend first and foremost on whether other states protest that OCS or tacitly accept it by failing to protest within a reasonable amount of time. UNCLOS does require state parties to submit OCS information to the CLCS, but the CLCS is meant to be an advisory body, only issuing “recommendations” after evaluating the scientific validity of the OCS claims.<sup>125</sup> Although UNCLOS provides that “[t]he limits of the shelf established by a coastal State on the basis of these recommendations shall be final and binding,” it would seem the state may still establish its OCS in disagreement with the CLCS “recommendations.”<sup>126</sup> The nature of a “recommendation” suggests that other states can also disagree with it and protest the first state’s claimed OCS limits. In any case, an UNCLOS body

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120. UNCLOS, *supra* note 20, at art. 76(3), 76(6).

121. *Id.* at art. 76(6).

122. *See* Byers, *supra* note 7, at 99–104.

123. *See id.* at 104.

124. Weiguo Wang, *Geological Structures of Ridges with Relation to the Definition of Three Types of Seafloor Highs Stipulated in Article 76*, 30 ACTA OCEANOLOGICA SINICA 125, 136–37 (2011). As quoted by Byers, *supra* note 7, at 102–104.

125. UNCLOS, *supra* note 20, at art. 76(8) and Annex II, art. 4.

126. *Id.* at art. 76(8).

like the CLCS certainly cannot alter the rights of states not party to UNCLOS, such as the United States, as the *pacta tertiis* principle prevents agreements from affecting the rights of third-party states without their consent.<sup>127</sup> Instead, the meaning of the “final and binding” clause appears to be that a coastal state that has claimed an OCS in accordance with the CLCS recommendations cannot later change its OCS claims by pointing to the advisory nature of the CLCS.<sup>128</sup> Accordingly, the determining factor in whether an OCS claim is binding on other states is not whether it conforms to the CLCS opinion, but whether other states—be they a party to UNCLOS or not—failed to protest the OCS claims within a reasonable amount of time.<sup>129</sup> Note that it is unclear to what extent the United States is bound by the same rules as UNCLOS members on this matter, since seabed mining is precisely the area where it does not consider UNCLOS to be reflective of customary international law.<sup>130</sup>

Time may not otherwise be of real consequence in the context of CLCS claims. States are theoretically supposed to make their CLCS claims within ten years of their ratification of UNCLOS, but it is unclear what the penalties are for not submitting a claim in time.<sup>131</sup> This may actually not affect a state’s substantial rights as it enjoys shelf rights without need for a proclamation according to UNCLOS: “[t]he rights of the coastal State over the continental shelf do not depend on occupation, effective or notional, or on any express proclamation.”<sup>132</sup> Several exceptions have been made in practice anyway, and many states have adopted partial submission strategies to stop the clock from running out.<sup>133</sup> According to Donald Rothwell and Tim Stephens, “[t]he partial submission strategy adopted by some coastal states [has] seen submissions based on staggered partial submissions, uncontested partial submissions with future identified submissions reserved, and uncontested partial submissions with future unidentified submissions reserved.”<sup>134</sup> Accordingly, perhaps the only ways in which the timing of a submission to the CLCS really matters are the order in which submissions get reviewed and the registration of formal protest against a rival OCS claim.

Ultimately, though, the CLCS recommendation may not represent the final word in the resolution of the dispute over the ownership of the central Arctic seabed. When states disagree on the delimitation of their continental shelves, the dispute generally cannot be resolved without the consent of all involved.<sup>135</sup> Whether the CLCS has issued a recommendation is immaterial, as CLCS

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127. See Vienna Convention on the Law of Treaties art. 34, May 23, 1969, 1155 U.N.T.S. 331.

128. Ted L. McDorman, *The Role of the Commission on the Limits of the Continental Shelf: A Technical Body in a Political World*, 17 INT’L J. OF MARINE & COASTAL L. 301, 313–15.

129. *Id.*

130. 2 Restatement (Third) of Foreign Relations Law 5 (1987), *supra* note 27.

131. See UNCLOS, *supra* note 20, at Annex II, art. 4.

132. *Id.* at art. 77(3).

133. DONALD R. ROTHWELL & TIM STEPHENS, *THE INTERNATIONAL LAW OF THE SEA* 114 (2010).

134. *Id.*

135. See McDorman, *supra* note 128, at 309.

recommendations may not prejudice the position of parties to a delimitation dispute.<sup>136</sup> Indeed, the CLCS may not issue a recommendation without the consent of all disputing parties in the first place, and even if the parties do consent, the recommendation will still be without prejudice to their position.<sup>137</sup> Any disputes over the delimitation of the continental shelf are instead to be resolved by agreement between the parties to the dispute, or by the compulsory dispute settlement mechanism of UNCLOS Part XV if no agreement can be reached in a reasonable time.<sup>138</sup> Yet while the compulsory dispute settlement mechanism can normally force the adjudication or arbitration of a dispute over the interpretation or application of UNCLOS even without the consent of all parties to the dispute, many parties to UNCLOS have invoked an optional exception to make it inapplicable in the case of delimitation.<sup>139</sup> Canada, Denmark, and Russia have all invoked that exception for delimitation, so the Lomonosov Ridge dispute cannot be resolved without an agreement between them—be it an agreement to voluntarily submit to dispute resolution, or to apportion the area by sector.<sup>140</sup>

### 3. *Gaps: States Retain the Final Word*

To sum up, while UNCLOS does provide a sophisticated system to solve the continental shelf disputes of the Arctic, it ultimately appears that these disputes cannot be solved against the will of the states involved.

UNCLOS members may formalize OCS claims on seabed beyond 200 nmi off their shores by filing them with the CLCS, which will review the scientific validity of the claims and issue a corresponding recommendation.<sup>141</sup> The CLCS does not have the final word, however, as the recommendation only becomes binding—and even then likely only on the filing member—if the member follows the CLCS's recommendation in declaring its OCS.<sup>142</sup> This suggests the CLCS recommendation can be challenged by the filing member, by other UNCLOS members, and perhaps even by non-members.<sup>143</sup> So even though Denmark and Russia have filed OCS claims with the CLCS, and Canada is about to do so, too, some uncertainty remains as to whether these countries will accept the final recommendation of the CLCS on the matter. Countries believing that the

136. UNCLOS, *supra* note 20, at art. 76(10), Annex II, art. 9.

137. Commission on the Limits of the Continental Shelf, Rules of Procedure of the Commission on the Limits of the Continental Shelf, Annex I, ¶ 5, UN Doc. CLCS/40/Rev.1 (Apr. 17, 2008), <https://documents-dds-ny.un.org/doc/UNDOC/GEN/N08/309/23/PDF/N0830923.pdf?OpenElement>.

138. *See* UNCLOS, *supra* note 20, at art. 83.

139. *See id.* at art. 298(1)(a)(i).

140. Declaration by the Russian Federation, *supra* note 79; Declaration by Canada, *supra* note 79; Declaration by the Kingdom of Denmark upon Ratification of the United Nations Convention on the Law of the Sea (Nov. 16, 2004), [http://www.un.org/depts/los/convention\\_agreements/convention\\_declarations.htm](http://www.un.org/depts/los/convention_agreements/convention_declarations.htm).

141. UNCLOS, *supra* note 20, at Annex II, art. 3, 4.

142. McDorman, *supra* note 128, at 313–15.

143. *Id.*

Lomonosov Ridge or other areas should be considered “common heritage of mankind,” rather than part of the OCS of an Arctic coastal State, may also decide to challenge a contrary CLCS recommendation.<sup>144</sup>

If the CLCS recommendation is challenged within a reasonable amount of time after it is released, then certainty regarding the ownership of the central Arctic will only be attainable through agreement.<sup>145</sup> The compulsory dispute settlement mechanism of UNCLOS will not be applicable due to the jurisdictional exceptions invoked by the interested Arctic States.<sup>146</sup> In other words, UNCLOS may prove to be an insufficient framework to solve the question of resource attribution in the central Arctic Ocean. If the involved countries refuse to give up their claims regardless of the opinion of the CLCS and refuse to voluntarily submit the issue to dispute resolution, then the issue may only be solvable by an agreement balancing the position of the contenders—and possibly the rest of the world if some countries insist on the recognition of the Lomonosov Ridge as “common heritage of mankind.”

## II. ENVIRONMENT: ARCTIC POLLUTION AND ARCTIC CONSERVATION

The biggest environmental challenges that will likely ensue from the receding ice and the concurrently increasing human activity in the Arctic are the pollution of previously pristine waters and the endangering of Arctic fauna. The legal response to these challenges must center on developing adequate anti-pollution norms and conservation management mechanisms.

The main sources of potential pollution arising from the Arctic thaw are discharges from vessels navigating through the Arctic, as well as oil spills from rigs or tankers. As for the conservation of Arctic fauna, the species most at risk from climate change and human exploitation are fishes and certain mammals, including polar bears and whales. The central Arctic Ocean is particularly at risk of a “tragedy of the commons.”

Potential legal mechanisms for limiting pollution include adequate navigation rules, environmental standards, and emergency response mechanisms, provided there are solid enforcement measures. Meanwhile, Arctic fauna can be protected either by species-specific conservation agreements, or by ecosystem-based regional conservation management mechanisms. This Part will cover pollution and conservation in turn.

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144. China in particular has made extensive “common heritage of all humankind” claims concerning the central Arctic seabed. See Rainwater, *supra* note 8, at 74; Andrea Beck, *China’s Strategy in the Arctic: A Case of Lawfare?*, 4 POLAR J. 306, 313 (2014).

145. McDorman, *supra* note 128, at 313–15.

146. See UNCLOS, *supra* note 20, at art. 298.

*A. Pollution from Increased Arctic Activity*

*1. Issues: Shipping Discharges and Oil Spills*

An Arctic Council report from 2009 warned that the top environmental threats associated with shipping were oil and ballast water discharges:

The most significant threat from ships to the Arctic marine environment is the release of oil through accidental or illegal discharge. Additional potential impacts of Arctic ships include ship strikes on marine mammals, the introduction of alien species [through ballast water], disruption of migratory patterns of marine mammals and anthropogenic noise produced from marine shipping activity.<sup>147</sup>

Beyond illegal oil discharges, accidental oil spills can inflict truly catastrophic damage to the Arctic environment. Oil disperses and degrades very slowly in cold waters, and can get trapped in “ice-oil sandwiches” if not addressed quickly.<sup>148</sup> Yet vast distances, minimal infrastructure, and extreme climatic conditions make cleanup operations particularly challenging.<sup>149</sup> The Exxon Valdez oil spill off the coast of Alaska in 1989 remains etched as one of the worst environmental disasters in human memory, despite the comparatively low volume of oil spilled, because the oil was so difficult to clean up.<sup>150</sup> Less than 10 percent was recovered, and what remained led to the deaths of an estimated quarter million seabirds, two thousand otters, and countless marine life forms.<sup>151</sup>

Typically, oil spills at sea can be addressed in one of three ways: booming and skimming, burning, and chemical dispersants.<sup>152</sup> Booming and skimming consists of mechanical recovery of the oil, which is already difficult in the high waves and strong winds of the Arctic in summer and nearly impossible in winter.<sup>153</sup> Burning needs to be accomplished quickly before the oil mixes with water, but response time is a clear problem in the Arctic.<sup>154</sup> Chemical dispersants are commonly selected as a response technique, but they are highly toxic and have long-lasting side effects on the marine environment.<sup>155</sup>

147. Arctic Council, *supra* note 9, at 5.

148. Jeremy Wilkinson et al., *Oil Spill Response Capabilities and Technologies for Ice-Covered Arctic Marine Waters: A Review of Recent Developments and Established Procedures*, 46 *AMBIO* 423, 426 (2017).

149. *Id.* at 423–24; *see also* COMM. ON RESPONDING TO OIL SPILLS IN THE U.S. ARCTIC MARINE ENV'T, *RESPONDING TO OIL SPILLS IN THE U.S. ARCTIC MARINE ENVIRONMENT 2* (2014); NUKA RESEARCH & PLANNING GROUP, *OIL SPILL PREVENTION AND RESPONSE IN THE U.S. ARCTIC OCEAN: UNEXAMINED RISKS, UNACCEPTABLE CONSEQUENCES* 10–23 (2010), <http://www.pewtrusts.org/~media/legacy/uploadedfiles/peg/publications/report/oil20spill20preventionpdf.pdf>.

150. Sarah Graham, *Environmental Effects of Exxon Valdez Spill Still Being Felt*, *SCI. AM.* (Dec. 19, 2003), <https://www.scientificamerican.com/article/environmental-effects-of/>, *supra* note 10.

151. *Id.*

152. Wilkinson et al., *supra* note 148, at 432.

153. NUKA RESEARCH & PLANNING GROUP, *supra* note 149, at 92.

154. For the U.S. gaps in transportation infrastructure, *see id.* at 19–23.

155. *Id.* at 80–84.



## 2. Instruments: The Polar Code and the Oil Framework

One of the most relevant sets of global anti-pollution norms for the Arctic is the UNCLOS framework obligations for the protection of the marine environment.<sup>156</sup> UNCLOS requires state parties to “protect and preserve the marine environment” and to cooperate on a global and regional basis to this end, notably through the promotion of contingency plans for marine pollution incidents.<sup>157</sup> More specifically, UNCLOS requires state parties to adopt measures against pollution from land-based sources, seabed activities, dumping, vessels, and the atmosphere.<sup>158</sup> It nevertheless leaves the substantive content of such anti-pollution measures to be determined by the state parties, encouraging them to establish global and regional norms through competent international organizations or diplomatic conference.<sup>159</sup> The UNCLOS environmental protection rules, in other words, are only framework obligations.

The responsibility to enforce applicable environmental norms upon vessels generally lies with the flag state under UNCLOS.<sup>160</sup> Coastal states may nevertheless enforce environmental norms upon vessels calling at their ports or navigating in their EEZ, to an extent depending on the evidence for and the gravity of the breach.<sup>161</sup> Enforcement of domestic environmental regulations would generally require clear grounds for believing that a violation occurred while the vessel navigated in territorial waters. In the case of the Arctic, as mentioned above, UNCLOS gives coastal states extended jurisdiction and enforcement powers for the protection of the marine environment in generally ice-covered areas, but the exact scope of these powers remains unclear.<sup>162</sup>

The IMO has also spearheaded a number of global norms that are highly relevant to the Arctic environmental issues of shipping pollution and oil spills. Relevant IMO norms include the 1969 International Convention on Civil Liability for Oil Pollution Damage (CLC),<sup>163</sup> the 1971 International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage,<sup>164</sup> the 1973 International Convention for the Prevention of Pollution from Ships (MARPOL 73/78),<sup>165</sup> the 1974 International Convention for the Safety of Life at Sea (SOLAS),<sup>166</sup> and the 1990 International Convention on Oil

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156. UNCLOS, *supra* note 20, at Part XII.

157. *Id.* at arts. 192, 197, 199.

158. *Id.* at arts. 207–12.

159. *Id.* at arts. 194, 197.

160. *See id.* at art. 217.

161. *Id.* at arts. 218, 220.

162. *Id.* at art. 234.

163. International Convention on Civil Liability for Oil Pollution Damage, Nov. 29, 1969, 973 U.N.T.S. 3.

164. International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, Dec. 18, 1971, 1110 U.N.T.S. 57.

165. International Convention for the Prevention of Pollution from Ships, Nov. 2, 1973, 1340 U.N.T.S. 61.

166. International Convention for the Safety of Life at Sea, Nov. 1, 1974, 1184 U.N.T.S. 2.

Pollution Preparedness, Response and Co-Operation (OPRC).<sup>167</sup> Note that many of the obligations in these conventions are either framework norms or norms not tailored to Arctic conditions.<sup>168</sup>

An Arctic-specific response to the shipping pollution problem is for now provided by the IMO's so-called "Polar Code."<sup>169</sup> What is referred to as the Polar Code is in fact a collection of amendments to SOLAS and MARPOL 73/78, which would impose safety and environmental norms on vessels going to sail in the Arctic or Antarctic.<sup>170</sup> These amendments have become binding as of January 1, 2017 through the "tacit acceptance" mechanism of SOLAS and MARPOL 73/78, which lets amendments enter into force after a certain period if no state party objects.<sup>171</sup> The Polar Code prohibits discharges of oil, noxious liquid substances, and (with some exceptions) sewage, while limiting those of garbage.<sup>172</sup> The Polar Code also addresses ballast water management and anti-fouling, but only as recommendations rather than binding rules.<sup>173</sup> In addition, it only discourages rather than prohibits the carrying of heavy fuel oil, which breaks down only very slowly in cold waters.<sup>174</sup>

Meanwhile, the Agreement on Cooperation on Marine Oil Pollution, Preparedness and Response in the Arctic (Arctic MOPPR) provides a tailored response to the problem of oil spills.<sup>175</sup> The Arctic MOPPR, ratified by all Arctic States, implements regionally many of the framework obligations of the OPRC and hence plays an important practical role in improving response capabilities.<sup>176</sup> For instance, it requires each signatory to identify the areas most at risk in its designated zone of responsibility, to locally maintain a quantity of cleanup equipment proportionate to that risk, and to carry out joint response exercises with other signatories.<sup>177</sup> On the other hand, the Arctic MOPPR covers only *ex post* responses to oil spills.<sup>178</sup> Negotiations for a second hydrocarbon agreement

167. The OPRC was ratified by all Arctic States. International Convention on Oil Pollution Preparedness, Response and Cooperation, Nov. 30, 1990, 1891 *U.N.T.S.* 51; Status of Multilateral Conventions and Instruments In Respect of Which the International Maritime Organization or Its Secretary-General Performs Depositary or Other Functions 467-469, Sep. 13, 2017, <http://www.imo.org/en/About/Conventions/StatusOfConventions/Pages/Default.aspx>.

168. See Byers, *supra* note 7, at 209–13.

169. Polar Code, *supra* note 17. See also IMO Doc. MSC 94/21/Add.1., Annex 6, *supra* note 17.

170. See Liu, *supra* note 31.

171. *Id.*; see also Lei Shi, *Successful Use of the Tacit Acceptance Procedure to Effectuate Progress in International Maritime Law*, 11 *U.S.F. MAR. L.J.* 299 (1998–99).

172. Polar Code, *supra* note 17, at Part II-A, chs. 1, 2, 4, 5.

173. *Id.* at Part II-B, ¶ 4.

174. *Id.* at Part II-B, ¶ 1.

175. Arctic MOPPR, *supra* note 16.

176. Arctic Council, *Status of Ratification of Agreements Negotiated Under the Auspices of the Arctic Council* (Feb. 25, 2016), [https://oaarchive.arctic-council.org/bitstream/handle/11374/1748/EDOC3258-v2A-ACSAOUS202\\_Fairbanks\\_2016\\_InfoDoc2\\_Update\\_on\\_Arctic\\_Council\\_Agreements\\_Ratification\\_Depositary.pdf?sequence=5&isAllowed=y](https://oaarchive.arctic-council.org/bitstream/handle/11374/1748/EDOC3258-v2A-ACSAOUS202_Fairbanks_2016_InfoDoc2_Update_on_Arctic_Council_Agreements_Ratification_Depositary.pdf?sequence=5&isAllowed=y).

177. Arctic MOPPR, *supra* note 16, at art. 4.2.

178. See MICHAEL BYERS, *ARCTIC OIL: CANADA'S CHANCE TO GET IT RIGHT* 35 (SSHRC Knowledge Synthesis Report 2016), [http://byers.typepad.com/files/michaelbyers\\_knowledgesynthesis](http://byers.typepad.com/files/michaelbyers_knowledgesynthesis)

focusing on prevention have thus far been unsuccessful.<sup>179</sup> The only Arctic-specific instrument available in this context for now is the non-binding Arctic Offshore Oil and Gas Guidelines.<sup>180</sup>

Regarding Arctic-specific institutions relevant to the fight against pollution, the Arctic Council plays an important role in environmental research and coordination, as its founding Ottawa Declaration focuses particularly on environmental protection.<sup>181</sup> The Council has six working groups related to the environment: Conservation of Arctic Flora and Fauna (CAFF), Protection of the Arctic Marine Environment (PAME), Emergency Prevention, Preparedness and Response (EPPR), Arctic Monitoring and Assessment Programme (AMAP), Sustainable Development Working Group (SDWG), and Arctic Contaminants Action Program (ACAP).<sup>182</sup> Arctic Council recommendations are not binding on its members, but the Council's work has been instrumental in devising environmental norms intended to become binding, such as the Arctic MOPPR.<sup>183</sup>

The Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR) is the most complete environmental protection instrument affecting the Arctic.<sup>184</sup> Although—as the title indicates—its scope only extends to the Northeast Atlantic, it could serve as a template for an Arctic-wide environmental protection mechanism.<sup>185</sup> OSPAR aims to regulate all human activities that can adversely affect the ecosystems and biodiversity of the Northeast Atlantic, except for fisheries or, to a certain extent, shipping.<sup>186</sup> An institutional body, the OSPAR Commission can adopt legally binding decisions, non-binding recommendations, or other agreements to implement or keep up to date OSPAR's environmental standards.<sup>187</sup> OSPAR was ratified by European countries on the western coasts of Europe, as well as Finland, Luxembourg, Switzerland, and the European Union.<sup>188</sup> Neither Canada nor Russia nor the United States is party to OSPAR.<sup>189</sup>

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report\_arcticoil\_18may2016.pdf.

179. Buck Parker, *The Arctic Council and Offshore Oil Pollution Prevention*, EARTHJUSTICE (Apr. 23, 2015), <https://earthjustice.org/features/the-arctic-council-offshore-oil>.

180. ARCTIC COUNCIL, ARCTIC OFFSHORE OIL AND GAS GUIDELINES (2009), <https://oaarchive.arctic-council.org/bitstream/handle/11374/63/Arctic-Guidelines-2009-13thMar2009.pdf?sequence=1&isAllowed=y>.

181. Ottawa Declaration, *supra* note 14.

182. Scott & Vanderzwaag, *supra* note 85, at 735–36.

183. *Id.* at 735–37.

184. OSPAR, *supra* note 19.

185. *Id.* at art. 1(a).

186. *Id.* at art. 2.

187. *Id.* at arts. 10, 13.

188. *Contracting Parties*, OSPAR COMMISSION, <https://www.ospar.org/organisation/contracting-parties> (last visited Jan. 31, 2018).

189. *Id.*

### 3. Gaps: Polar Code Shortcomings and Oil Rules

As we saw, UNCLOS lays down some framework obligations for addressing the pollution challenges arising from the Arctic thaw, but these have to be fleshed out by other instruments in order to have an impact. Many of the most pressing shipping pollution issues have been addressed by the Polar Code, but some important deficiencies remain. Meanwhile, oil exploitation still lacks binding, Arctic-wide, and Arctic-specific regulations, even if oil spill response mechanisms have been harmonized by the Arctic MOPPR.

Regarding shipping-related pollution, the gaps identified in the 2009 World Wildlife Fund report included the non-binding nature of the IMO's Arctic Shipping Guidelines and the absence of Arctic-specific IMO standards on discharges, emissions, ballast water exchanges, and fuel content.<sup>190</sup> Since then, the adoption of the IMO's Polar Code has introduced binding standards on discharges, but the Code does not mention emissions, and only makes non-binding recommendations regarding ballast water exchanges and fuel content.<sup>191</sup> Environmental organizations have particularly decried the failure of the Polar Code to ban heavy fuel oil from the Arctic.<sup>192</sup>

Regarding hydrocarbon-related pollution, the gaps identified in the 2009 World Wildlife Fund report included a general lack of rules on offshore hydrocarbon exploitation beyond MARPOL 73/78, the non-binding nature of the Arctic Council's "Arctic Offshore Oil and Gas Guidelines," the absence of strong environmental management bodies except for OSPAR, as well as only partial Arctic coverage of contingency response norms.<sup>193</sup> Even though the last point was addressed by adoption of the Arctic MOPPR in 2013, there are still no Arctic-specific, uniform, and binding regulations on offshore hydrocarbon exploitation, and no other environmental management bodies comparable to OSPAR.

The gaps left in the context of pollution cannot all be addressed by UNCLOS alone and would require multilateral agreement beyond that framework.<sup>194</sup> No new instrument appears needed for shipping-related pollution, as it would probably be enough to reach agreements for further Polar Code amendments to MARPOL 73/78 in the context of the IMO. For oil pollution, however, binding hydrocarbon exploitation rules would probably have to be negotiated by Arctic Council members, following the Arctic MOPPR model. Granted, this would not cover non-members conducting hydrocarbon exploitation in the central Arctic Ocean but could serve as basis for the International Seabed Authority to adopt Arctic-specific exploitation management rules. More ambitiously, the Arctic States could seek to establish a

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190. Koivurova and Molenaar, *supra* note 32, at 42.

191. *See* Liu, *supra* note 31.

192. *See id.*

193. Koivurova & Molenaar, *supra* note 32, at 42.

194. *See id.*

commission with the power to adopt binding decisions to protect the Arctic environment, based on the OSPAR model. The reach of this body's decisions could be extended to the central Arctic Ocean through a port state control system of enforcement by the Arctic coastal States.

### B. Conservation of Arctic Fauna

#### 1. Issues: Overexploitation and Disruption

Arctic warming threatens Arctic fauna in two ways. First, local species may not be adapted to survive in a changed climate, and may lose out in competition with new species attracted by the warmer climate.<sup>195</sup> Longer ice-free summers disrupt the denning and hunting patterns of polar bears, for instance, so that only one-third of the worldwide polar bear population is expected to survive by 2050.<sup>196</sup> The melting ice also leads to a substantial influx of killer whales in the Arctic region, threatening local whale and seal populations.<sup>197</sup> The extent to which incoming fish species would affect the Arctic ecosystem cannot be judged with certainty at this stage and requires more scientific research, as noted in an open letter signed by more than two thousand international scientists urging the adoption of a precautionary management system for central Arctic fisheries.<sup>198</sup>

Second, local species might be endangered by increased human activity, whether directly through overexploitation or indirectly through ship strikes or noise disrupting migratory patterns.<sup>199</sup> Several species of whales present in the Arctic were already exploited nearly to extinction a hundred years ago.<sup>200</sup> More recently, in the 1980s, long-range fishing fleets operating in a “donut hole” of international waters in the Bering Sea nearly depleted pollock stocks there.<sup>201</sup> An international agreement to conserve pollock stocks in the Bering Sea came too late to prevent this textbook example of a “tragedy of the commons,” as the stocks have still not recovered to this day.<sup>202</sup> A similar tragedy could happen in the central Arctic Ocean.<sup>203</sup> The relatively low fish density there means that even relatively few distant-water fishing boats conducting “exploratory fishing” could

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195. See ARCTIC COUNCIL, FRAMEWORK FOR A PAN-ARCTIC NETWORK OF MARINE PROTECTED AREAS 6 (Apr. 2015), [https://pame.is/images/03\\_Projects/MPA/MPA\\_Report.pdf](https://pame.is/images/03_Projects/MPA/MPA_Report.pdf).

196. Byers, *supra* note 7, at 174.

197. *Id.*

198. David Barber et al., *An Open Letter from International Scientists* (Apr. 12, 2012), <https://oceanconservancy.org/wp-content/uploads/2017/10/International-Arctic-scientist-letter-with-sigs-5-2-20121.pdf>. See also Anne B. Hollowed et al., *Potential Movement of Fish and Shellfish Stocks from the Sub-Arctic to the Arctic Ocean*, 22 FISHERIES OCEANOGRAPHY 355, 355–56 (2013).

199. Arctic Council, *supra* note 9, at 5.

200. See Byers, *supra* note 7, at 176.

201. *Id.* at 178–79.

202. Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea, June 16, 1994, 34 I.L.M. 67, *supra* note 11.

203. See Barber et al., *supra* note 198.

inflict lasting damage to fish stocks.<sup>204</sup> This damage, in turn, could have destabilizing consequences for the whole ecosystem.<sup>205</sup> Wiping out the plankton-eating Arctic cod, for instance, would remove an essential component of a food chain that sustains seabirds, seals, and whales.<sup>206</sup>

## 2. Instruments: Species-Specific Treaties

UNCLOS includes a general obligation for member states to protect and preserve the marine environment, and to exploit living resources in accordance with this obligation.<sup>207</sup> Additionally, there is an obligation to cooperate on a global and regional basis in developing instruments for the protection and preservation of the marine environment.<sup>208</sup> Responsibility for the conservation and management of marine living resources (MLR) is shared between UNCLOS members on the high seas.<sup>209</sup> In the EEZ, the coastal state has sovereign exploration and management rights over the MLR, with the responsibility to ensure through proper conservation and management measures that these resources are not threatened by overexploitation.<sup>210</sup>

The UNCLOS framework principles for MLR management of commercial fish stocks are typically implemented through so-called Regional Fisheries Management Organizations (RFMOs).<sup>211</sup> Other relevant sources of framework principles for fishery management in the Arctic include the 1995 UN Fish Stocks Agreement,<sup>212</sup> which covers straddling fish stocks and highly migratory fish stocks in the high seas, and the Food and Agricultural Organization's Code of Conduct for Responsible Fisheries.<sup>213</sup>

Certain RFMOs are relevant to the Arctic without necessarily reaching the central Arctic Ocean, such as the Northwest Atlantic Fisheries Organization (NAFO), the Western and Central Pacific Fisheries Commission (WCPFC), the North Pacific Anadromous Fish Commission (NPAFC), and the Central Bering

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204. Hannah Hoag, *Sea Ice Retreat Could Lead to Rapid Overfishing in the Arctic*, THE ATLANTIC (Mar. 17, 2017), <https://www.theatlantic.com/science/archive/2017/03/fishing-at-the-top-of-the-world/519639/>.

205. Barber et al., *supra* note 198.

206. See Louis Fortier et al., *The Arctic Cod (Boreogadus saida) Ecosystem Under the Double Pressure of Climate Change and Industrialization*, ARCTICNET, Annual Research Compendium, 2013-14, at 1, 3-4, [http://www.arcticnet.ulaval.ca/pdf/compendium2013-14/arctic\\_cod\\_2013-14.pdf](http://www.arcticnet.ulaval.ca/pdf/compendium2013-14/arctic_cod_2013-14.pdf).

207. UNCLOS, *supra* note 20, at arts. 192, 193.

208. *Id.* at art. 197.

209. *Id.* at art. 117.

210. *Id.* at arts. 56(1)(a), 61(2).

211. See Rosemary Rayfuse, *Regional Fisheries Management Organizations*, in THE OXFORD HANDBOOK OF THE LAW OF THE SEA 439-62 (Donald R. Rothwell et al. eds., 2015).

212. Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks, Aug. 4, 1995, 2167 U.N.T.S. 3.

213. Code of Conduct for Responsible Fisheries, Oct. 31, 1995, FAO Doc. 95/20/Rev/1.

Sea Convention.<sup>214</sup> Certain RFMOs are potentially relevant to the central Arctic Ocean but only cover it partially, such as the North-East Atlantic Fisheries Commission (NEAFC), the North Atlantic Salmon Conservation Organization (NASCO), and the International Commission for the Conservation of Atlantic Tunas (ICCAT).<sup>215</sup>

As far as the Arctic high seas are concerned, the five Arctic coastal States declared in 2015 in Oslo that it would be desirable “to implement appropriate interim measures to deter unregulated fishing in the future in the high seas portion of the central Arctic Ocean.”<sup>216</sup> They also assured that they would only authorize commercial fishing by their vessels under an appropriate fisheries management instrument, and that they would set up a joint program of scientific research into the regional ecosystems.<sup>217</sup> Negotiations for a central Arctic RFMO started the same year between the five Arctic coastal States and the five other entities considered most likely to have substantial fishing interests in the central Arctic Ocean—China, the European Union, Iceland, Japan, and South Korea.<sup>218</sup> On November 30, 2017 the “five-plus-five” announced the successful completion of negotiations for a central Arctic RFMO, with the draft Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean prohibiting trawling in the central Arctic for sixteen years or until a plan for sustainable fishing is in place.<sup>219</sup>

As far as instruments for other species are concerned, the International Whaling Commission (IWC) adopted an indefinite moratorium on commercial whaling in 1982, under the 1946 International Convention for the Regulation of Whaling.<sup>220</sup> This did not lead to a worldwide end to commercial whaling, however.<sup>221</sup> Japan continues whaling under the scientific research clause of Article 8, Iceland and Norway continue by exempting themselves from IWC decisions through Article 5, and Canada simply withdrew from the IWC upon the 1982 moratorium.<sup>222</sup> The IWC has since recognized, to a limited extent, the whaling rights that Canada granted its Inuvialuit and Inuit indigenous people.<sup>223</sup>

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214. Erik J. Molenaar, Deputy Dir., Neth. Inst. for the Law of the Sea, *The Central Arctic Ocean Fisheries Negotiations* (May 31, 2017), <https://www.uu.nl/en/file/61961/download?token=fekiVTeD>.

215. *Id.*

216. Declaration Concerning the Prevention of Unregulated High Seas Fishing in the Central Arctic Ocean, July 16, 2015, <https://www.regjeringen.no/en/aktuelt/fishing-arctic-ocean/id2427705/>.

217. *Id.*

218. Hoag, *supra* note 204.

219. *Meeting on High Seas Fisheries in the Central Arctic Ocean, 28–30 November 2017: Chairman’s Statement*, U.S. DEP’T OF STATE, <https://www.state.gov/e/oes/ocns/opa/rls/276136.htm> (last visited Feb. 4, 2018); Andrew E. Kramer, *Russia, U.S. and Other Nations Restrict Fishing in Thawing Arctic*, N.Y. TIMES (Nov. 30, 2017), <https://www.nytimes.com/2017/11/30/world/europe/russia-arctic-ocean-fishing-thaw.html>.

220. International Convention for the Regulation of Whaling, Dec. 2, 1946, 49 Stat. 3079, 161 U.N.T.S. 72.

221. *See* Byers, *supra* note 7, at 176–77.

222. *See id.*

223. *See id.* at 177.

As for polar bears, the most important instrument is the 1973 Agreement on the Conservation of Polar Bears (the “Polar Bear Treaty”).<sup>224</sup> The five countries with significant polar bear populations are party to this treaty: Canada, Denmark, Norway, Russia, and the United States.<sup>225</sup> Among other terms, the treaty requires members to strictly limit the conditions in which polar bears may be hunted, implement conservation practices based on the best available scientific data, and prohibit the exportation from, importation into, and trafficking within, the contracting territories of polar bears.<sup>226</sup>

Lastly, there have been more and more calls for the adoption of regional, ecosystem-based approaches, rather than strictly species-based agreements.<sup>227</sup> In 2015, the Protection of the Arctic Marine Environment (PAME) Working Group of the Arctic Council proposed a framework for a so-called “Pan-Arctic Network of Marine Protected Areas.”<sup>228</sup> “Marine Protected Areas” (MPA) is a generic term for areas designated and managed for the conservation of a marine ecosystem.<sup>229</sup> In other words, MPAs represent an ecosystem-based approach rather than a species-based approach to conservation.<sup>230</sup> The PAME’s framework is meant to help harmonize and coordinate the establishment of MPAs by Arctic coastal States in their respective national jurisdictions. The proposal is, however, non-binding.<sup>231</sup>

### 3. Gaps: The Need for Ecosystem Management

As we have seen, UNCLOS is not sufficient by itself to address the conservation challenges created by the Arctic thaw. Its framework principles have to be implemented regionally. In the Arctic, this implementation is currently carried out through species-specific conservation treaties, and the institutional framework could soon be strengthened through the project of a pan-Arctic MPA network. While a central Arctic RFMO represents an important step forward, the weaknesses of the current approach lie mainly in the ad hoc nature of conservation treaties, and in the non-binding nature and limited scope of the network project.

The species-specific conservation treaties cast a wide net, now covering whales, polar bears, and various fish species; hopefully, the adoption of the central Arctic Ocean agreement will soon also extend protection to all fish

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224. Agreement on the Conservation of Polar Bears, Nov. 15, 1973, 27 U.S.T. 3918.

225. *Id.* at 3922; U.S. FISH & WILDLIFE SERV., *Frequently Asked Questions on Proposal to List Polar Bears as Threatened Species* (June 11, 2001), <https://www.fws.gov/alaska/fisheries/mmm/polarbear/pdf/PolarbearFAQ.pdf> (noting that Polar Bears “are distributed throughout most ice-covered seas of the Northern Hemisphere . . . includ[ing] areas of the United States, Canada, Greenland, Norway, and Russia.”).

226. *Id.* at 3921–22.

227. *See e.g.* ARCTIC COUNCIL, *supra* note 195, at 5–8, 13.

228. *Id.*

229. *Id.* at 11.

230. *Id.* at 13.

231. *Id.* at 5.



species in that region. That being said, the ad hoc nature of species-specific conservation approaches means that the treaties may fail to bring on board the countries that matter, as shown for instance by the failure to get Canada, Iceland, Japan, and Norway to embrace the whaling moratorium. It may also leave unprotected less prominent species such as birds or seals.

MPAs remedy the weaknesses of species-specific conservation treaties through an ecosystem-based approach that does not discriminate between species. The Arctic MPA network is therefore an important step towards better conservation of Arctic fauna. Its non-binding and state-dependent nature, however, means that the speed and scale of MPA adoption in areas of national jurisdiction risks being insufficient. It is also unable to cover the creation of a central Arctic MPA in areas beyond national jurisdiction.<sup>232</sup> Absent an OSPAR-inspired commission to make binding environmental protection decisions for the Arctic, the region could benefit from a binding MPA framework agreement that would set common standards and coordinate the efforts of Arctic States in environmental protection.

### III. SECURITY: ARCTIC POLICING AND ARCTIC PEACE

The biggest security challenge in the Arctic is ensuring that newly accessible waters remain safe, peaceful, and under the rule of law. The legal response to these challenges must consist in developing adequate safety standards, strengthening enforcement mechanisms, and limiting the type of arms that can be brought into the Arctic.

The Arctic thaw creates new soft security concerns by unblocking a vast expanse of water in which it must be ensured that ships do not sink, that crews can be rescued if they do, and that rules and regulations applicable to the Arctic are effectively enforced. From a hard security perspective, the concerns will be to minimize the risk of armed confrontation, prevent a regional arms race, and generally ensure an atmosphere of mutual trust and security.

From a legal perspective, soft security can be improved through adequate safety standards for vessels and crews, the development of emergency response mechanisms, and cooperation in law enforcement. Hard security concerns can be addressed by various confidence-building measures such as joint exercises, as well as demilitarization and arms limitation agreements. This Part will cover soft and hard security in turn.

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232. See Kamrul Hossain & Kathleen Morris, *Protecting Arctic Ocean Marine Biodiversity in the Area Beyond National Jurisdiction*, in *THE FUTURE OF THE LAW OF THE SEA* 105, 114–15 (Gemma Andreone ed. 2017).

*A. Keeping the Arctic Safe and Under the Rule of Law**1. Issues: Human Security and Law Enforcement*

The Arctic is a dangerous place to navigate. The hulls of most normal vessels are too weak to cross a frozen or semi-frozen ocean.<sup>233</sup> Even vessels with special ice-strengthened designs, involving a thicker hull and greater structural integrity, should have an experienced crew with adequate training for special maneuvers in icy waters and knowledge of the local ice currents and geographic conditions.<sup>234</sup> If disaster strikes, the extreme weather conditions and scarce infrastructure in the Arctic mean that any rescue operation will be particularly challenging.<sup>235</sup> Navigation can be facilitated by the escort of an icebreaker, a particularly resistant and powerful ship specially designed to cut a path through ice so that weaker vessels can follow.<sup>236</sup>

As the Arctic melts and its infrastructure improves, navigation traffic may increase, forcing national coast guards to address a variety of problems more common in warmer waters: illegal fishing, smuggling, illegal immigration, etc.<sup>237</sup> Exchange of information and cooperation between national coast guards could go a long way toward facilitating effective law enforcement.<sup>238</sup> There is, however, a limit to what coast guards can do about activities lying beyond contiguous zone or EEZ national jurisdictions.

*2. Instruments: Rescue Treaty and Coast Guard Forum*

There are a number of global soft security norms relevant to the region.<sup>239</sup> Most important is the regulation by UNCLOS of the extent of state jurisdiction on water. Coastal states have full jurisdiction in their territorial sea and are allowed to exercise necessary control in their contiguous zone to prevent infringement of their customs, fiscal, immigration, and sanitary norms.<sup>240</sup> They also have some jurisdiction over adjacent international straits:

States bordering straits may adopt laws and regulations relating to transit passage through straits, in respect of. . . (d) the loading or unloading of any

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233. See Samrat Ghosh & Christopher Rubly, *The Emergence of Arctic Shipping: Issues, Threats, Costs, and Risk-Mitigating Strategies of the Polar Code*, 7 AUSTL. J. MAR. & OCEAN AFF. 171, 173–74 (2015); Byers, *supra* note 7, at 269–279.

234. Ghosh & Rubly, *supra* note 233, at 173–74.

235. *Id.* at 174.

236. See *id.* at 177, 178.

237. See Byers, *supra* note 7, at 261–69.

238. Andreas Østhagen, *The Arctic Coast Guard Forum: Big Tasks, Small Solutions*, THE ARCTIC INSTITUTE (Nov. 2, 2015), <https://www.thearcticinstitute.org/arctic-coast-guard-forum-big-tasks/>.

239. Convention on International Civil Aviation, Dec. 7, 1944, 61 Stat. 1180, 15 U.N.T.S. 295; International Convention on Maritime Search and Rescue, Apr. 27, 1979, T.I.A.S. No. 11,093, 1405 U.N.T.S. 97.

240. UNCLOS, *supra* note 20, at art. 33(1).

commodity, currency or person in contravention of the customs, fiscal, immigration or sanitary laws and regulations of States bordering straits.<sup>241</sup>

In the EEZ, coastal state jurisdiction is generally limited to the enforcement of sovereign rights regarding resource exploitation, marine scientific research, and the protection of the marine environment.<sup>242</sup> On the high seas, coastal states have no particular enforcement rights besides a right of hot pursuit for violations over which they had jurisdiction in the EEZ.<sup>243</sup> Instead, it is the flag state that has jurisdiction, meaning that as a general rule a vessel may only be inspected by warships or authorized vessels from the same flag state (or from the same actual origin if the vessel is flying a flag of convenience).<sup>244</sup> There are certain “universal jurisdiction” exceptions for the slave trade, piracy, and unauthorized broadcasting.<sup>245</sup> The limitation of coastal state jurisdiction to their territorial waters or in certain cases to their EEZs leaves the central Arctic Ocean beyond most policing capabilities. For the foreseeable future, though, most potential criminal activities will have to pass through the NWP or NSR, where the Canadian and Russian coast guard currently exert extensive jurisdiction.<sup>246</sup>

In the context of soft security, it is worth noting that the Arctic States are all party to two global search and rescue framework agreements.<sup>247</sup> The first is the 1944 Chicago Convention on International Civil Aviation, which requires international cooperation in search-and-rescue operation and mandates the provision of search-and-rescue services in zones of responsibility determined by regional air navigation agreements.<sup>248</sup> The second is the 1979 International Convention on Maritime Search and Rescue (SAR Convention), which similarly requires international cooperation and the division of responsibilities in developing a “search and rescue plan.”<sup>249</sup> UNCLOS also requires coastal states to provide search-and-rescue services in its waters and to form regional agreements for cooperation in this matter.<sup>250</sup>

There are also a few Arctic-specific soft security norms, such as the Arctic SAR,<sup>251</sup> the Arctic MOPPR,<sup>252</sup> and the IMO’s Polar Code.<sup>253</sup> The Arctic SAR Agreement does not significantly extend the obligations the Arctic States were

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241. *Id.* at art. 42(1).

242. *Id.* at arts. 73, 210, 211, 212.

243. *Id.* at arts. 87, 111.

244. *Id.* at arts. 92, 110.

245. *Id.* at arts. 99, 100, 109.

246. *See supra* Part I.A.

247. *See* Byers, *supra* note 7, at 277.

248. Convention on International Civil Aviation, *supra* note 239, at Annex 12, <http://www.naca.nl/icao/icao-annex-12.pdf>.

249. International Convention on Maritime Search and Rescue, *supra* note 239.

250. UNCLOS, *supra* note 20, at art. 98(2).

251. Arctic SAR, *supra* note 15.

252. Arctic MOPPR, *supra* note 16.

253. Polar Code, *supra* note 17. *See also supra* Part II.A. (discussing the Arctic MOPPR and the environmental aspects of the Polar Code). This sub-Part will focus on the Arctic SAR and the security-related aspects of the Code.

already subjected to by the 1944 Chicago Convention and the 1979 SAR Convention.<sup>254</sup> Its value consists instead in delimiting aeronautical and maritime search-and-rescue regions for the eight Arctic States, largely replacing the patchwork of partial agreements that existed previously.<sup>255</sup> It also encourages (but does not require) the sharing of information, procedures, techniques, equipment, and facilities, and also promotes joint research and development initiatives, reciprocal visits by experts, and joint search-and-rescue exercises<sup>256</sup>

Most of the Polar Code became binding on parties to SOLAS and MARPOL 73/78 on January 1, 2017, as explained above.<sup>257</sup> As far as mandatory security norms are concerned, the Code requires polar-bound vessels to meet particular structure, stability, and material requirements, which are more or less stringent depending on whether the vessel seeks certification to sail in medium first-year ice, thin first-year ice, or in less severe ice conditions, akin to open waters.<sup>258</sup> The Code also requires polar-bound vessels to have adequate equipment, such as partially or totally enclosed lifeboats, ice-removal equipment, and fire extinguishers operable in cold temperatures.<sup>259</sup> It sets further requirements regarding communication and voyage planning, as well as manning and training.<sup>260</sup> Finally, the Code facilitates enforcement by requiring polar-bound vessels to carry a valid Polar Ship Certificate, which describes its operational limitations, its inventory of polar equipment, and its record of inspection.<sup>261</sup> The Polar Code thereby provides uniform and binding safety regulations specifically adapted to Arctic conditions.

There are also pan-Arctic fora in place to specifically address regional soft security issues. The foremost institution in this context is the Arctic Council, which has also set up an Emergency Prevention, Preparedness and Response working group.<sup>262</sup> In parallel to the Council, the eight Arctic States created an Arctic Coast Guard Forum in 2015, which improves cooperation between regional coast guards.<sup>263</sup> There were also plans for an annual meeting of the eight Arctic States' chiefs of defense (CHOD), initially to discuss soft security issues such as civil-military relations in the North, environmental stewardship, and search and rescue.<sup>264</sup> However, despite promising first meetings in 2012 and 2013, the CHOD meetings have been discontinued—clearly as a consequence of

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254. Arctic SAR, *supra* note 15, at art. 7.1; *see also* Byers, *supra* note 7, at 278.

255. Arctic SAR, *supra* note 15, at Annex I.

256. *Id.* at art. 9.

257. *See supra* Part II.A.

258. Polar Code, *supra* note 17, at Part I-A, chs. 3, 4, 5, 6.

259. *Id.* at Part I-A, chs. 7, 8.

260. *Id.* at Part I-A, chs. 9, 10, 11, 12.

261. *Id.* at Part I-A, chs. 1, 2.

262. David Stone & Lars-Otto Reiersen, *The Role of the Working Groups in the Work of the Arctic Council*, UARCTIC, <https://www.uarctic.org/shared-voices/shared-voices-magazine-2016-special-issue/the-role-of-the-working-groups-in-the-work-of-the-arctic-council/> (last visited Feb. 9, 2018).

263. Østhagen, *supra* note 238.

264. Klimenko, *supra* note 107, at 30.

the Ukraine crisis.<sup>265</sup> Certain soft security exercises have nevertheless survived the crisis, such as the annual Russo-Norwegian “Barents” exercises focusing on oil pollution response.<sup>266</sup>

### 3. *Gaps: Safe for Now?*

In summary, the institutions and norms currently in place satisfactorily address most soft security issues, even if the central Arctic Ocean will remain beyond the grasp of law enforcement for the foreseeable future.

There have been binding, Arctic-specific and Arctic-wide normative responses to the most urgent soft security issues: search and rescue, oil spills, and ship safety. Even if the Arctic SAR and Arctic MOPPR do not add much to the framework obligations of the SAR Convention and the 1990 OPRC, they fill for now the need for a regional implementation treaty. And while there are some valid criticisms of the Polar Code, these criticisms concern its environmental rather than security aspects.<sup>267</sup>

Meanwhile, the need for a pan-Arctic forum to discuss and coordinate responses to soft security issues is met at least by the Arctic Council and the Arctic Coast Guard Forum. The Arctic Council in particular played a central role in the development of two important emergency response instruments discussed above: the Arctic SAR on human security and the Arctic MOPPR on oil spill response.<sup>268</sup>

There has been no significant response to the fact that most of the Arctic Ocean will remain beyond the jurisdiction of the Arctic States. This situation is not sensibly different from that of high seas elsewhere in the world, and it will pose the same problems in law enforcement. For now, the ice largely prevents the use of the Arctic Ocean for criminal activities, but that may change once enough ice has disappeared that criminals can avoid law enforcement along the NWP and NSR.<sup>269</sup> Whether an institutional response to this gap will be necessary is not yet obvious at this stage.

## B. *Maintaining Peace in the Arctic*

### 1. *Issues: Arctic Militarization and Nuclear Destabilization*

The hard security issues affecting the Arctic today include its growing militarization, the collapse of cooperation between seven more-or-less NATO-

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265. *Id.*

266. *Id.* at 30–31.

267. See Liu, *supra* note 31.

268. *The Evolution of the Arctic Council and the Arctic Council System*, WORLD WILDLIFE FUND FOR NATURE (WWF) (May 30, 2016), <http://arctic.blogs.panda.org/default/evolution-of-the-arctic-council/>.

269. See Donna J. Nincic, *Maritime Security in the Arctic: The Threat from Non-State Actors*, 13TH ANN. GEN. ASSEMBLY INT'L ASS'N MAR. U. 289, 291–93 (2012) <http://iamu-edu.org/wp-content/uploads/2014/07/Maritime-Security-in-the-Arctic-The-threat-from-non-state-actors.pdf>.

aligned Arctic states and Russia, and the potential destabilization of the global nuclear balance by the Arctic thaw.

The Arctic is at risk of becoming a military flashpoint. The likelihood of military tensions over control of newly accessible natural resources should not be overstated, as most Arctic resources are clearly in the EEZs or continental shelves of this or that Arctic State.<sup>270</sup> Yet the Arctic thaw inevitably opens new invasion routes that Arctic States must take into account when planning their defense—be it through the Arctic Ocean, the Bering Sea, or the Russo-Scandinavian borders.<sup>271</sup> Loud calls on all sides against the militarization of the Arctic have been followed by quiet improvements in Arctic military capabilities, especially by Russia.<sup>272</sup> The central concern here is the deep fracture between the seven Arctic NATO states and Russia, the geographically largest Arctic state. Russia was not represented at Arctic security forums following the Ukraine crisis, increasing the room for distrust, misunderstanding, and overreaction in the Arctic context.<sup>273</sup> Indeed, key Russian security documents such as the 2014 Military Doctrine, the 2015 Maritime Doctrine, and the 2015 National Security Strategy identify NATO's expanding influence as being among the top security threats to Russia, and highlight the need to defend Russian Arctic interests.<sup>274</sup> Security tensions are already having economic implications, as anti-Russia sanctions in the wake of the Ukraine crisis have blocked a number of Russian Arctic resource development projects by preventing U.S. and EU companies from contributing equipment, technology, and financing.<sup>275</sup>

These outcomes appear to have been wholly preventable—a product of mutual fear rather than necessity. Four periods can be distinguished in Russian Arctic security policy in the post-Cold War era, with none clearly directed at threatening the interests of other Arctic states. Ekaterina Klimenko, writing for the Stockholm International Peace Research Institute, first notes an almost complete disbanding of Russian Arctic forces in the 1990s, as the country was reeling from the Soviet collapse.<sup>276</sup> The 2000s then ushered a period of national power restoration, notably through the State Rearmament Program, which unsettled neighbors despite the spending targets remaining much more modest than in the Soviet era.<sup>277</sup> Klimenko notes for instance that while the Program

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270. Adam Lajeunesse & Whitney Lackenbauer, *Russia's Arctic Militarization: A Reality Check*, ARCTIC DEEPLY (Mar. 17, 2017), <https://www.newsdeeply.com/arctic/community/2017/03/17/russias-arctic-militarization-a-reality-check>.

271. See generally PHILIP E. STEINBERG ET AL., *CONTESTING THE ARCTIC: POLITICS AND IMAGINARIES IN THE CIRCUMPOLAR NORTH* 162–63 (2015).

272. See, e.g., Rob Huebert et al., *Climate Change & International Security: The Arctic as a Bellwether*, CENTER FOR CLIMATE AND ENERGY SOLS. 18–21 (2012), <https://www.c2es.org/site/assets/uploads/2012/04/arctic-security-report.pdf>.

273. See Klimenko, *supra* note 107, at 30, 35.

274. *Id.* at 16.

275. *Id.* at 8.

276. *Id.* at 18.

277. *Id.*

paid particular attention to the overhaul of Russia's northern fleet, in particular for submarine patrols in the Arctic, the number of operational submarines at Moscow's disposal actually fell by three-quarters from 1986 to 2010.<sup>278</sup> Klimenko then highlights a period of attempted cooperation beginning in 2008, as a key Russian policy document insisted that it was a top strategic priority for Russia to keep the Arctic a "zone of peace and cooperation."<sup>279</sup> This posture presumably reflected the fact that Russia simply cannot afford to substantially fortify its extremely long northern coastline, especially considering that the Russian military budget is only about a seventh of America's, and that the country's economy was hit hard by plunging oil prices.<sup>280</sup> In any case, this period was marked by Arctic advances such as the Ilulissat Declaration of 2008, the Norway-Russia Agreement on the Barents Sea in 2010, and the setting up of Arctic security roundtables.<sup>281</sup> Note also that Russia's 2013 Arctic Strategy outlines exclusively defensive goals for Russian armed forces in the region, such as safeguarding sovereign rights, providing strategic deterrence, and repelling aggression.<sup>282</sup> Finally, the 2014 Ukraine crisis began a period of rapidly deteriorating Russo-Western relations and a strengthening of Russia's Arctic posture, for instance through large military exercises mirroring those of NATO and the setting up of a Joint Strategic Command for Russia's northern forces.<sup>283</sup> Klimenko notes, however, that many Russian military developments in the region since 2013 are products of plans that were announced long before the Ukraine crisis, such as the State Rearmament Program.<sup>284</sup> So while it may be expected that other Arctic States would seek, like Russia, to proportionately protect their Arctic interests, there does not yet appear to have been any particular event making Arctic militarization an ineluctable necessity.<sup>285</sup>

Be that as it may, the Arctic is also at risk of nuclear escalation. Because it represents a direct way for the two most important nuclear powers to bomb each other, it has been regularly patrolled by long-range nuclear bombers and by nuclear-armed submarines since the Cold War.<sup>286</sup> The mutual downsizing of arsenals after the collapse of the Soviet Union did relax the nuclear danger for a

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278. *Id.*

279. *Id.* at 14.

280. For an analysis of the effects of oil prices on the Russian military budget, see, e.g., Susanne Oxenstierna, *Russia's Defense Spending and the Economic Decline*, 7 J. EURASIAN STUD. 60, 66–68 (2016).

281. See Ilulissat Declaration, *supra* note 27; Treaty Concerning Maritime Delimitation and Cooperation in the Barents Sea and Arctic Ocean, *supra* note 93.

282. Klimenko, *supra* note 107, at 18–19.

283. *Id.* at 22, 33, 35.

284. *Id.* at 26.

285. See Lajeunesse & Lackenbauer, *supra* note 270; Ernie Regehr, *Missile Defence and the Arctic*, CTR. FOR SECURITY STUD.: THE CSS BLOG NETWORK (June 14, 2013), <http://isnblog.ethz.ch/security/missile-defence-and-the-arctic>.

286. Regehr, *supra* note 285.

time.<sup>287</sup> Yet tensions are on the rise again after Washington noticed its withdraw from the Anti-Ballistic Missile Treaty (ABM Treaty) roughly three months after 9/11.<sup>288</sup> President Bush claimed this move was necessary to defend against “terrorists who strike without warning, or rogue states who seek weapons of mass destruction,” but the ensuing development of ballistic missile defense (BMD) capabilities also destabilized the global nuclear balance.<sup>289</sup> BMDs fuel an arms race logic insofar as countering them requires firing more missiles than they can intercept, so the expected response to U.S. BMD development by nuclear powers not allied to Washington is to maintain, modernize, and perhaps develop their nuclear arsenals.<sup>290</sup> BMDs are particularly relevant to the Arctic because the most important American BMD base is Fort Greely in Alaska, where dozens of ground-based mid-course defense (GMD) interceptors are emplaced to defend against incoming ballistic missiles by intercepting them midcourse.<sup>291</sup> Russia has in response deployed some S-400 missile defense units, which are similar to American Patriot systems in their multi-role ability to target both aircraft and ballistic missiles, albeit with a greater range.<sup>292</sup>

The Arctic thaw could further destabilize the global nuclear balance. It could facilitate the deployment of the American sea-based Aegis BMD in the Arctic Ocean (designed to intercept midcourse short-to-intermediate range missiles), as well as the deployment of surface anti-submarine warfare capabilities to hunt nuclear-armed submarines.<sup>293</sup> The development of American BMD capabilities in the Arctic could also provoke China into developing a larger nuclear arsenal and deepening military cooperation with Russia, as Beijing is already actively developing counter-measures against the development of U.S. BMD capabilities in the Pacific.<sup>294</sup> The Doomsday Clock of the Bulletin of the Atomic Scientists now suggests we are only “two minutes” away from an

287. Alexei Arbatov, *An Unnoticed Crisis: The End of History for Nuclear Arms Control?*, CARNegie MOSCOW CENTER 5–7 (Jun. 16, 2015), <http://carnegie.ru/2015/06/16/unnoticed-crisis-end-of-history-for-nuclear-arms-control-pub-60408>.

288. U.S. DEP’T OF STATE, *Text of Diplomatic Notes Sent to Russia, Belarus, Kazakhstan and Ukraine* (Dec. 14, 2001), <https://2001-2009.state.gov/r/pa/prs/ps/2001/6859.htm>.

289. ARMS CONTROL ASS’N, *U.S. Withdrawal from the ABM Treaty: President Bush’s Remarks and U.S. Diplomatic Notes* (Jan. 1, 2002), [https://www.armscontrol.org/act/2002\\_01-02/docjanfeb02](https://www.armscontrol.org/act/2002_01-02/docjanfeb02); Thomas Graham Jr. & Bernadette Stadler, *The Back Door to a New Arms Race*, POLITICO: THE AGENDA (Jun. 28, 2017), <https://www.politico.com/agenda/story/2017/06/28/missile-defense-arms-race-russia-000467>.

290. Graham, Jr. & Stadler, *supra* note 289.

291. Tim Ellis, *Trump Administration Proposes \$2.1 Billion Expansion of Fort Greely Missile-Defense Base*, ALASKA PUB. MEDIA (Nov. 14, 2017), <https://www.alaskapublic.org/2017/11/14/trump-administration-proposes-2-1-billion-expansion-of-fort-greely-missile-defense-base/>.

292. RUSS. TODAY, *Russia Deploys S-400 Missile Defense Systems in Arctic* (Dec. 8, 2015), <https://www.rt.com/news/325094-s-400-arctic-deployment/>.

293. Regehr, *supra* note 285; Tatyana Rusakova, *Spy Ship to Track U.S. Missile Defense System in Arctic Circle*, RUSS. BEYOND THE HEADLINES (Nov. 19, 2015), [https://www.rbth.com/defence/2015/11/19/spy-ship-to-track-us-misile-defense-system-in-arctic-circle\\_542351](https://www.rbth.com/defence/2015/11/19/spy-ship-to-track-us-misile-defense-system-in-arctic-circle_542351).

294. Nicholas Khoo & Reuben Steff, “*This Program Will Not Be a Threat to Them*”: *Ballistic Missile Defense and US Relations With Russia and China*, 30 DEF. & SEC. ANALYSIS 17, 22–24 (2014).



apocalyptic “midnight,” closer than we were during the 1980s, and “the closest the Clock has ever been to Doomsday . . . .”<sup>295</sup>

## 2. *Instruments: Security Arrangements and Arms Control*

There are hardly any Arctic-specific demilitarization or arms control norms, with the small exception of the Svalbard Treaty prohibiting the use of the Svalbard Archipelago for warlike purposes.<sup>296</sup> There are also no pan-Arctic fora to specifically address regional hard security issues. The Ottawa Declaration explicitly declares that “[t]he Arctic Council should not deal with matters related to military security.”<sup>297</sup> There have been plans for an annual meeting of the CHOD of the Arctic States, as well as an annual Arctic Security Forces Roundtable (ASFR) of the Arctic States plus France, Germany, the Netherlands, and the United Kingdom.<sup>298</sup> Despite promising first meetings of the CHOD in 2012 and 2013, and of the ASFR in 2012, the Ukraine crisis in 2014 has prevented these fora from maturing into pan-Arctic hard security venues.<sup>299</sup>

The institutions left standing after the Ukraine crisis confirm the isolation of Russia in the context of Arctic hard security. Five Arctic states are part of the North Atlantic Treaty Organization (NATO)—namely Canada, Denmark, Iceland, Norway, and the United States—and conduct biannual “Cold Response” exercises.<sup>300</sup> Finland and Sweden are theoretically neutral countries, but tend to work in close cooperation with NATO.<sup>301</sup> The five North European Arctic States (Denmark, Finland, Iceland, Norway, and Sweden) have also formed the “Nordic Defence Cooperation” that conducts biannual “Arctic Challenge” exercises.<sup>302</sup> Finally, one can also note the North American Aerospace Defense Command (NORAD) between the United States and Canada, as its mandate extends to the Arctic.<sup>303</sup>

Among the global nonproliferation norms relevant to the region, most notable are the Non-Proliferation Treaty and the so-called “Seabed Treaty.”<sup>304</sup> The Seabed Treaty prohibits the deployment of nuclear weapons on the seabed,

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295. SCIENCE AND SECURITY BOARD, BULLETIN OF THE ATOMIC SCIENTISTS, *It Is 2 Minutes to Midnight: 2018 Doomsday Clock Statement 2–3* (John Mecklin ed. Jan. 25, 2018), <https://thebulletin.org/sites/default/files/2018%20Doomsday%20Clock%20Statement.pdf>.

296. Treaty Concerning the Archipelago of Spitsbergen, Feb. 9, 1920, 43 Stat. 1892.

297. Ottawa Declaration, *supra* note 14, at art. 1, n.1.

298. Klimenko, *supra* note 107, at 30.

299. *Id.*

300. *Id.* at 29.

301. Gabriela Baczyńska, *Wary of Russia, Sweden and Finland Sit at NATO Top Table*, REUTERS (Jul. 8, 2016), <https://www.reuters.com/article/us-nato-summit-nordics/wary-of-russia-sweden-and-finland-sit-at-nato-top-table-idUSKCN0Z01EO>.

302. Klimenko, *supra* note 107, at 29.

303. *Id.*

304. Treaty on the Non-Proliferation of Nuclear Weapons (“NPT”), Jul. 1, 1968, 21 U.S.T. 483, 729 U.N.T.S. 161; Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Sea-Bed and the Ocean Floor and in the Subsoil Thereof (“Seabed Treaty”), Feb. 11, 1971, 23 U.S.T. 701, 955 U.N.T.S. 115.

which implies that the Arctic seabed too must remain a nuclear-free zone.<sup>305</sup> The Non-Proliferation Treaty, to which all Arctic States are party, generally prohibits “non-nuclear-weapon” states from developing nuclear weapons, while mandating that the five recognized nuclear weapons states negotiate in good faith towards disarmament (China, France, Russia, the United Kingdom, and the United States).<sup>306</sup> The United States and Russia did considerably reduce their arsenals at the end of the Cold War, though they still maintain by far the largest nuclear arsenals.<sup>307</sup> The dissolution of the ABM Treaty more or less marked the end of post-war disarmament.<sup>308</sup> The Obama administration seemed to give new impetus to disarmament through the “New START” agreement between the United States and Russia, which requires reduction by half of all strategic nuclear missile launchers.<sup>309</sup> Yet it then compromised that progress again by adopting a “trillion-dollar” nuclear modernization program.<sup>310</sup> There is no indication that global disarmament will occur anytime soon, as nuclear weapons states and most NATO members boycotted United Nations General Assembly negotiations where over 120 countries voted for a global ban on nuclear weapons.<sup>311</sup>

### 3. *Gaps: No Security Roundtables and No Local Arms Control*

To sum up, the institutions and norms currently in place fail to prevent the growing militarization of the Arctic and the destabilization of the global nuclear balance.

There are no Arctic-specific demilitarization norms apart from the Svalbard Treaty. There is also no pan-Arctic security forum to defuse tension and build trust among all actors in the region, as the Arctic Council is not meant to discuss military security and Russia was excluded from the CHOD and ASFR annual meetings. Remaining institutions all isolate Russia, from NATO to NORAD to the Nordic Defense Cooperation. There is a general military build-up around the Arctic and no signs that it will recede. Insofar as the chief cause of militarization appears to be mutual fear among Arctic states, the most straightforward answer

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305. Seabed Treaty, *supra* note 304, 23 U.S.T. at 704, 955; U.N.T.S. at 118.

306. NPT, *supra* note 304, 21 U.S.T. at 487, 490, 729 U.N.T.S. at 171, 173; Kelsey Davenport & Kingston Reif, *Nuclear Weapons: Who Has What at a Glance*, ARMS CONTROL ASS’N (Jan. 18, 2018), <https://www.armscontrol.org/factsheets/Nuclearweaponswhohaswhat>.

307. Davenport & Reif, *supra* note 306.

308. Scott Ritter, *The U.S.-Russia Nuclear Arms Race is Over, and Russia Has Won*, NEWSWEEK (Apr. 12, 2017), <http://www.newsweek.com/us-russia-nuclear-arms-race-over-and-russia-has-won-581704>.

309. Treaty on Measures for the Further Reduction and Limitation of Strategic Offensive Arms, U.S.-Russ., Apr. 8, 2010, T.I.A.S. No. 11,205; Peter Baker, *Twists and Turns on Way to Arms Pact with Russia*, N.Y. TIMES (Mar. 26, 2010), <http://www.nytimes.com/2010/03/27/world/europe/27start.html?ref=global-home>.

310. Kingston Reif, *The Trillion (and a Half) Dollar Triad?*, 9 ARMS CONTROL ASS’N, Issue Briefs (Aug. 18, 2016), <https://www.armscontrol.org/issue-briefs/2017-08/trillion-half-dollar-triad>.

311. Record of the United Nations General Assembly Vote on the Draft Treaty on the Prohibition of Nuclear Weapons, U.N. Doc. A/CONF.229/2017/L.3/Rev.1 (July 7, 2017), [https://s3.amazonaws.com/unoda-web/wp-content/uploads/2017/07/A.Conf\\_.229.2017.L.3.Rev\\_.1.pdf](https://s3.amazonaws.com/unoda-web/wp-content/uploads/2017/07/A.Conf_.229.2017.L.3.Rev_.1.pdf).

to the problem appears to be reforming the Arctic Council to also serve as a military security forum. The Council could then coordinate confidence-building military exercises and transparent communication about Arctic military developments. Although there are legitimate fears that bringing in such divisive matters might freeze progress on the other areas of responsibility of the Council, the opposite argument could also be made: that to solve the divisive questions it is necessary to mix them with the ones on which cooperation is easily achieved.<sup>312</sup> Alternatively, there could be a revival of the military security fora that excluded Russia following the Ukraine crisis, though this might be more controversial politically. In any case, the discussion of military security in the Arctic should probably be kept separate from that in the European theater because the stakes are fundamentally different: Europe is about land and people, while the Arctic is merely about water. One way to avoid repeated clashes between NATO and Russia in an Arctic security forum would be to include East Asian countries with strong interests in the Arctic, such as China and South Korea.

Meanwhile, global nuclear disarmament efforts have ground to a halt, and new missile defense systems are being set up in the Arctic region, further destabilizing the nuclear balance. A possible solution would be to negotiate a local demilitarization or arms control treaty. Just as military activity is banned in the Antarctic, there could be a similar ban for the central Arctic Ocean.<sup>313</sup> This might nevertheless be difficult to achieve given the perceived importance of Arctic patrols by nuclear-armed submarines in the global nuclear balance.<sup>314</sup> Alternatively, there could be negotiations to ban certain types of military hardware in the Arctic, such as sea-based missile defense or anti-submarine warfare capabilities.

#### CONCLUSION: SECTORAL ARRANGEMENTS OR ARCTIC TREATY?

As we have seen, there has been significant progress in Arctic governance in the past ten years, especially in environmental and soft security matters. Notable milestones include the founding of the Arctic Council in 1996, the adoption of the Arctic SAR agreement in 2011, the adoption of the Arctic MOPPR agreement in 2013, and the entry into force of the IMO's Polar Code in 2017. There has also been positive momentum in bilateral agreements resolving outstanding disputes between the Arctic States, the latest example being the 2010 Norway-Russia Barents Sea Treaty.

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312. For an argument opposing introduction of military matters in Arctic Council responsibilities, see, e.g., Ragnhild Groenning, *Why Military Security Should Be Kept Out of the Arctic Council*, THE ARCTIC INSTITUTE (June 2, 2016), <https://www.thearcticinstitute.org/why-military-security-should-be-kept-out-of-the-arctic-council/>.

313. Antarctic Treaty, *supra* note 2, at art. 1.1.

314. See Byers, *supra* note 7, at 259.

Significant gaps remain, however, concerning freedom of navigation, resource attribution, environmental protection, and hard security questions. There is no agreement on the navigational regime for the NWP and NSR, nor on the ownership of the seabed in the central Arctic Ocean. There are no internationally binding rules for Arctic hydrocarbon exploitation, nor for Arctic shipping emissions, ballast water management, and fuel content. There are no binding commitments to establish an adequate Arctic MPA network. There are also no instruments to stop Arctic militarization, and no Arctic forum dedicated to military security. Filling all of these gaps would in most cases require a multilateral settlement open to all countries, rather than just the Arctic States.

The navigational regime dispute over the NWP and NSR can hardly be solved without a multilateral agreement with Canada and Russia. It might be argued that substantial international traffic would identify these routes as international straits where foreign vessels have a right of transit passage. As discussed, however, Canadian and Russian claims of full jurisdiction over these routes as internal waters might lie beyond the reach of the UNCLOS compulsory dispute settlement mechanism. These claims are partly based on arguments of historical title, and both Canada and Russia have invoked UNCLOS exceptions that put sea boundary and historical title disputes beyond the reach of compulsory settlement. An arbitral tribunal that decided to assert jurisdiction in spite of these exceptions might just be ignored by the aggrieved country, as China did with the *Philippines v. China* arbitral tribunal.<sup>315</sup> It is also difficult to challenge the Canadian and Russian claims for practical reasons, as most of the ships passing through these routes would depend on Canadian and Russian ports and services, strengthening the leverage of Ottawa and Moscow on this issue.<sup>316</sup> It follows that the navigational regime of the NWP and NSR will probably have to be settled through a multilateral agreement including not just the Arctic States, but also the states wishing to use the routes. Such a negotiated multilateral settlement could also allow a better balancing of navigational freedoms and law enforcement needs than an arbitral decision declaring the routes to be international straits against the will of Canada and Russia.

The dispute over the central Arctic seabed could also languish without a negotiated multilateral settlement. While Russia, Denmark, and Canada currently focus on getting the backing of the CLCS for their respective claims over the North Pole, the Commission remains an advisory body that only issues

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315. Ministry of Foreign Affairs of the People's Republic of China, *Statement on the Award of 12 July 2016 of the Arbitral Tribunal in the South China Sea Arbitration Established at the Request of the Republic of the Philippines*, XINHUA (Jul. 12, 2016), [http://news.xinhuanet.com/english/2016-07/12/c\\_135507744.htm](http://news.xinhuanet.com/english/2016-07/12/c_135507744.htm).

316. Steven Chase, *Canada to Widen Arctic Patrols, PM Says*, THE GLOBE AND MAIL (Aug. 27, 2008), <https://www.theglobeandmail.com/news/national/canada-to-widen-arctic-patrols-pm-says/article1059849/>; John Helmer, *Russia Intensifies Control over Northern Sea Route Shipping, but Suez May Still Win*, BUSINESS INSIDER (Sep. 5, 2013, 10:08 AM), <http://www.businessinsider.com/russia-intensifies-control-over-shipping-route-2013-9>.

recommendations. It will not spare the contenders from having to negotiate a delimitation agreement or agreeing to voluntary dispute resolution. This issue cannot be solved by compulsory dispute resolution because all three countries have excluded their delimitation disputes from the reach of that mechanism. Besides, non-Arctic countries may join the dispute by arguing that some of the disputed areas, in particular the Lomonosov Ridge, are actually the common heritage of mankind. Settling the issue of ownership over the central Arctic seabed may therefore require a multilateral agreement that balances the interests not just of the three prime contenders, but also of the rest of the world.

The environmental issues still affecting the Arctic would also require multilateral agreements beyond the UNCLOS framework to solve. No new instrument is needed for the failure of the Polar Code to include binding regulations on Arctic shipping emissions, ballast water management, and fuel content, as these shortcomings can be addressed by negotiating further amendments to MARPOL 73/78 in the context of the IMO. The lack of internationally binding rules on Arctic hydrocarbon exploitation would, however, require a new instrument, probably negotiated among Arctic Council members following the model of the Arctic MOPPR. The more ambitious goal would be to establish a commission with the power to adopt binding decisions to manage the Arctic Ocean's ecosystem, based on the model of OSPAR. Falling short of such a commission, the absence of satisfactory MPA coverage of the Arctic can be remedied by a multilateral treaty that would create a central Arctic MPA and set binding standards for the creation of MPAs in areas of national jurisdiction.

The absence of instruments preventing military escalations in the Arctic can probably only be remedied with multilateral negotiations at this stage. While bilateral arms control and nuclear disarmament agreements between the United States and Russia would address the root of the problem, they appear unlikely for now as the relation between the two countries is hitting lows not seen since the Cold War. A probably more realistic approach would be a multilateral arms control agreement over the Arctic, which would serve the interests of all countries by preventing military escalation at least between the world's foremost nuclear powers. This agreement could take the form of a spatially defined ban of military activities (e.g. in the central Arctic Ocean), a ban of certain types of military devices (e.g. certain sea-based missiles), or other policies that could help prevent military escalation in the Arctic and a new arms race between the United States and Russia.

Another multilateral mechanism that could help prevent the militarization of the Arctic would be a forum for Arctic hard security matters. It could also play a critical role in defusing tensions and misunderstandings, serving, for instance, as a platform for trust-building initiatives like joint military exercises. In order to avoid the fate of the Arctic CHOD and ASFR meetings, the hard security forum would probably have to avoid a "NATO vs. Russia" dynamic, for instance

by including East Asian countries which would have a stake in Arctic security through their prospective use of the NSR.

The need for multilateral agreements at several levels to address Arctic governance gaps implies that they could also be holistically addressed by a single “package deal” agreement. An Arctic Treaty could, for instance, ban certain military activities in the central Arctic Ocean, designate the Lomonosov Ridge as common heritage of mankind, strike an appropriate balance between navigation and law enforcement in the NWP and NSR, and possibly integrate into the Arctic Council a hard security mandate and a binding MPA framework including the central Arctic Ocean. The communization of the Lomonosov Ridge would motivate non-Arctic support for the treaty, while Russia, Denmark, and Canada could be compensated elsewhere in the treaty, for instance by the recognition of favorable NSR and NWP regimes. Arctic countries in general would benefit from multilateral pressure to stop the militarization of the Arctic, saving them the money that would otherwise be lost in an arms race. Environmentalists will also appreciate the “package deal” momentum to achieve a binding MPA framework that could not have been achieved if all Arctic environmental issues were solved on a case-by-case basis. These are of course only rough suggestions—another paper would be needed to explore a balance that effectively integrates the various perspectives of countries with Arctic interests. At the end of the day, however, there are strong arguments for how all stakeholders could benefit from a holistic multilateral agreement filling all gaps of Arctic governance. Such an agreement would not be starting from scratch; there are already a number of sectoral treaties that can be built on, as shown here. The Arctic could soon become as emblematic as the Antarctic of the triumph of peace, science, and reason over the tragedy of the commons threatened by narrowly understood national interests.

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