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"Arctic Ocean Governance: Shifting Seascapes, Hazy Horizons"

David L. VanderZwaag

Polar Cooperation Research Centre (PCRC)
Graduate School of International Cooperation Studies (GSICS)
Kobe University, Japan
http://www.research.kobe-u.ac.jp/gsics-pcrc/index.html

Arctic Ocean Governance: Shifting Seascapes, Hazy Horizons[*]

David L. VanderZwaag[**]
Dalhousie University, Canada

Professor David L. VanderZwaag is Professor of Law and Canada Research Chair in Ocean Law and Governance, Marine & Environmental Law Institute, Schulich School of Law, Dalhousie University. He teaches international environmental law and is the past Co-director of Dalhousie's interdisciplinary Marine Affairs Program (1986-1991) and the past Director of the Marine & Environmental Law Institute. Professor VanderZwaag is currently a member of the IUCN's World Commission on Environmental Law (WCEL) and Co-chair of the WCEL's Specialist Group on Oceans, Coasts & Coral Reefs. He is an elected member of the International Council of Environmental Law. He has authored over 150 papers in the marine and environmental law field. Professor VanderZwaag's educational background includes: PhD (1994, University of Wales, Cardiff), LL.M. (1982, Dalhousie Law School), J.D. (1980, University of Arkansas Law School), M.Div. (1974, Princeton Theological Seminary), and B.A. (1971, Calvin College).

1. Introduction

The Arctic Ocean has become a "hot topic" of political and academic interest for many reasons. Decreasing sea ice raises prospects of increased shipping and shortened shipping routes between Asia and Europe.[1] The Arctic is expected to experience a bonanza in resource developments, for example, the region is projected to contain 13 per cent or the world's undiscovered oil and some 30 per cent of the undiscovered natural gas.[2]

[*] The text is partly drawn from other works of the author: David L. VanderZwaag, "Climate Change and the Shifting International Law and Policy Seascape for Arctic Shipping", in Randall S. Abate (ed.), *Climate Change Impacts on Ocean and Coastal Law: U.S. and International Perspectives* (Oxford: Oxford University Press, 2015) 299-314; David L. VanderZwaag, "The Arctic Council and the Future of Arctic Ocean Governance: Edging Forward in a Sea of Governance Challenges", in Tim Stephens and David L. VanderZwaag (eds.), *Polar Oceans Governance in an Era of Environmental Change* (Cheltenham, UK, Edward Elgar, 2014) 308-338.

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[1] For a comparison of the three main shipping routes, the Northern Sea Route, the Northwest Passage and the transpolar route over the central Arctic Ocean, see Willy Østreng et al., *Shipping in Arctic Waters: A Comparison of the Northeast, Northwest and Trans Polar Passages* (Berlin: Springer, 2013).

[2] USGS, Circum-Arctic Resource Appraisal: Estimated Undiscovered Oil and Gas North of the Arctic Circle, USGS Fact Sheet 2008-3049 (2008).

A long list of environmental concerns has further raised the regional profile. Concerns within the Arctic include: loss of sea ice habitats for many species such as polar bears and seals;[3] adverse effects of ocean acidification which is especially severe in polar waters;[4] and long-range transport of persistent organic pollutants (POPs) and heavy metals like mercury into the region.[5] Concerns outside the Arctic include: impacts of melting ice and glaciers on global sea level rise; effects of a warming Arctic on weather changes outside the region; and the potential changes in ocean currents.[6]

Two images help capture the ocean governance realities. First is "shifting seascapes." Major shifts have occurred and promise to continue in regional and global cooperative arrangements. Second is "hazy horizons." Future evolutions in Arctic-related cooperation remain quite foggy. For example, governance arrangements for the central Arctic Ocean (CAO) beyond national jurisdiction have yet to be sorted out. A two part review follows.

2. Shifting Seascapes

2.1 Regional Cooperative Shiftings

Key shifts can be seen in two main avenues for regional cooperation, the Arctic Council and initiatives of the five Arctic coastal States (Arctic 5).

2.1.1 Arctic Council Shiftings

As already highlighted in this Symposium, the Arctic Council has been changing on many fronts. The Council has expanded the participation of observer States to include five Asian countries (China, India, Japan, Singapore and South Korea). The Council has moved from being a "talk and study" forum to a policy-shaping and even law-making institution. Two regional agreements have been negotiated through Arctic Council task forces, the Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic Agreement (2011)[7] and the Agreement on Cooperation on Marine Oil Pollution

[3] See, e.g. Conservation of Arctic Flora and Fauna (CAFF), Life Linked to Ice: A Guide to Sea-Ice Associated Biodiversity in This Time of Rapid Change (2013); CAFF, Arctic Biodiversity Assessment: Status and Trends in Arctic Biodiversity Synthesis (2013).
[4] Arctic Monitoring and Assessment Programme (AMAP), AMAP Arctic Ocean Acidification Assessment: Key Findings (2013).
[5] AMAP, Summary for Policy-makers: Arctic Pollution Issues 2015 (2015).
[6] Lorne Kriwoken, "Environmental Change in the Arctic Region", in Tim Stephens and David L. VanderZwaag (eds.), *Polar Oceans Governance in an Era of Environmental Change* (Cheltenham, U.K.: Edward Elgar, 2014) 42-61.
[7] May 12, 2011, available at <https://oaarchive.arctic-council.org/handle/11374/531> (accessed January 7, 2016).

Preparedness and Response in the Arctic (2013).[8] A third task force is working towards completion of a legally binding agreement on scientific cooperation by the Council's 2017 Ministerial meeting.[9]

The Arctic Council has also helped catalyze the establishment of three other regional cooperative mechanisms. An Arctic Regional Hydrographic Commission was established in 2010 under the umbrella of the International Hydrographic Organization (IHO) and has been facilitating hydrographic data collection and nautical charting in the Arctic Ocean region. [10] The Arctic Economic Council was created in 2013 under Canada's chairmanship of the Arctic Council, and the Economic Council is mandated to bring together business leaders from the eight Arctic States and indigenous communities to promote economic development in the North.[11]

The Arctic Coast Guard Forum was forged in October 2015 under the leadership of the United States.[12] The Forum promises to foster cooperation among Coast Guards of the eight Arctic States in improving capabilities on various fronts including oil spill response, search and rescue, maritime surveillance and enforcement and aids to navigation.

2.1.2 Arctic 5 Shiftings

Cooperation among the Arctic 5 has also seen substantial advances on three main fronts. First, the five Arctic coastal States (Canada, Denmark/Greenland, Norway, Russian Federation, and USA) have expanded cooperation to protect polar bears. The 1973 Polar Bear Conservation Agreement [13] might be described as quite narrow with general commitments to protect polar bear dens and ecosystems and a focus on controlling hunting and poaching. The Agreement prohibits polar bear taking with a few limited exceptions: subsistence hunting, self-defence to save human life, and scientific purposes. [14] A Circumpolar Polar Bear Action Plan, concluded in September 2015, promises to broaden cooperation.[15] For example, the Action Plan commits the Arctic 5 to strengthen scientific efforts to understand the impacts of climate change and other

[8] May 15, 2013, available at <https://oaarchive.arctic-council.org/handle/11374/529> (accessed January 7, 2016).
[9] Arctic Council, Iqaluit Declaration 2015, para. 44.
[10] Documentation on meetings of the Regional Commission is available at <http://www.iho.int> (accessed January 28, 2016).
[11] See Natalia Loukacheva, "The Arctic Economic Council - the Origins" 7 The *Yearbook of Polar Law* 225 (2015).
[12] See Rebecca Pincus, "The Arctic Coast Guard Forum: A Welcome and Important Step" *Arctic Yearbook 2015*, 389-390 (2015).
[13] November 15, 1973, 13 I.L.M. 13 (1974).
[14] For a further discussion, see Nigel Bankes and Elizabeth Whitsitt, "Arctic Marine Mammals in International Environmental Law and Trade Law" in Leif Christian Jensen and Gier Hønneland (eds.), *Handbook of the Politics of the Arctic* (Cheltenham, U.K.: Edward Elgar, 2015) 185-206, 190-191.
[15] Available at <http://www.naalakkersuisut.gl> (accessed January 28, 2016).

environmental stressors on polar bears. The Plan also calls for enhancing education of politicians and the public regarding the plight of polar bears through a communication and outreach program.

A second initiative area by the Arctic 5 has been the countering of allegations by some non-governmental organizations (NGOs), media reporters and academics that a rather "lawless" situation hovers over the Arctic Ocean. At a meeting of the Arctic 5 in May 2008 in Greenland, government representatives, through the Ilulissat Declaration,[16] indicated the law of the sea provides a solid foundation for responsible management by the five coastal States and other users of the Arctic Ocean. The 1982 UN Convention on the Law of the Sea (LOSC)[17] provides many guiding currents. Various freedoms on the high seas would be open to all States including the freedoms of navigation and fishing.[18] Flag state jurisdiction would prevail as the prime principle for controlling activities on the high seas. Various responsibilities would fall upon States to control activities of their vessels and nationals carried out on high seas in the Arctic, for example: conserving fish stocks and cooperating with other States in seeking to manage fish stocks jointly exploited;[19] undertaking environmental impact assessments for planned activities that may cause substantial pollution or significant and harmful changes to the marine environment;[20] and generally to protect and preserve the marine environment.[21] Mineral exploration and exploitation of the deep seabed beyond national jurisdiction would come under the jurisdiction and licensing control of the International Seabed Authority.[22]

The 1995 UN Agreement on Straddling and Highly Migratory Fish Stocks[23] also establishes various obligations relevant to potential Arctic high seas fisheries. These responsibilities include the need to apply precautionary and ecosystem approaches and a commitment to establish a sub-regional or regional fisheries management organization (RFMO) or arrangement where no such organization/arrangement exists for a particular straddling or high migratory fish stock.

At the Ilulissat meeting, the Arctic 5 concluded there was no need for a new overarching treaty for the Arctic.

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[16] May 15, 2013, available at <https://oaarchive.arctic-council.org/handle/11374/529> (accessed January 7, 2016).
[17] December 10, 1982, 1833 U.N.T.S. 3 [hereinafter LOSC].
[18] LOSC, Art. 87.
[19] LOSC, Art. 118.
[20] LOSC, Art. 206.
[21] LOSC, Art. 192.
[22] LOSC, Art. 156.
[23] 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, August 4, 1995, 2167 U.N.T.S. 3.

A third avenue for Arctic 5 cooperative progression has been in promoting a precautionary approach to potential commercial fishing in areas of the central Arctic Ocean beyond national jurisdiction. Arctic 5 representatives have met periodically since 2010 to discuss scientific and policy issues regarding potential future commercial fisheries in the CAO.[24] At the first policy-focused meeting in Washington, D.C. April 29-May 1, 2013, the Arctic 5 made it clear that they wished to set the future governance agenda, even though commercial fishing in the high seas of the CAO is unlikely to occur in the near future.[25] Although they agreed there is presently no need for an additional RFMO or RFMOs for the area, they indicated the development of interim measures was desirable to prevent unregulated commercial fishing. At a second policy-oriented meeting in Nuuk, Greenland (February 24-26, 2014) representatives agreed on various further ways forward, namely: holding a 3rd scientific meeting no later than the end of 2015; developing a Ministerial Declaration on interim measures for adoption by the Arctic 5; and forging a broader process to involve other interested States in developing a set of interim measures which could lead to a binding international agreement as a final outcome.[26]

At a third policy meeting held in Oslo, Norway on July 16, 2015, the Arctic 5 adopted a Declaration Concerning the Prevention of Unregulated High Seas Fishing in the Central Arctic Ocean. [27] States agreed to various interim measures to address potential commercial fishing on the high seas of the CAO. Those measures include: not authorizing fishing vessels to conduct fishing on the high seas area until one or more regional or subregional fisheries management organizations or arrangements have established management measures; establishing a joint scientific research program to promote ecosystem understandings; and coordinating monitoring control and surveillance activities.

Under the leadership of the United States, the Arctic 5 have subsequently expanded CAO fisheries discussions to include four other countries (China, Japan, South Korea, and Iceland) and the European Union. An initial meeting of delegations from the "Arctic 5 + 5" occurred in Washington, D.C., December 1-3, 2015. Delegates expressed the desire to

[24] Njord Wegge, "The Emerging Politics of the Arctic Ocean: Future Management of Living Marine Resources" 51 *Marine Policy* 331 (2015); Min Pan and Henry P. Huntington, "A Precautionary Approach to Fisheries in the Central Arctic Ocean: Policy, Science, and China" 63 *Marine Policy* 153 (2016).

[25] Chairman's Statement at Meeting on Future Arctic Fisheries (May 1, 2013), available at <http://www.state.gov/e/oes/rls/pr/2013/209176.htm> (accessed January 12, 2016).

[26] Chairman's Statement, available at <https://www.afsc.noaa.gov/Arctic_fish_stocks_third_meeting/Arctic%20Fisheries%20Nuuk%20Chairmans%20and%20ToR%20for%203rd%20Meeting.pdf> (accessed January 2, 2016).

[27] Available at <https://www.regjceingen.no/globalassets/departementene/ud/vedlegg/folkerett/declaration-on-arctic-fisheries-16-July-2015.pdf> (accessed January 12, 2016). For a further review, see Erik J. Molenaar, "The Oslo Declaration on High Seas Fishing in the Central Arctic Ocean", *Arctic Yearbook 2015*, 426-431 (2015).

cooperate in advancing scientific research and monitoring for the CAO. They considered various possible approaches to prevent unregulated commercial fishing in the CAO high seas including: adoption of a broader non-binding declaration on CAO fisheries; negotiation in the foreseeable future of an agreement or agreements to establish one or more additional regional fisheries management organizations or arrangements for the area; and negotiation of a binding international agreement as proposed by the United States.[28]

Future ways forward were also agreed to. The United States offered to host a follow-up policy meeting in the Spring of 2016. Norway agreed to convene a further scientific meeting likely in September or October 2016.

2.2 Shifting Global Cooperation

A major advancement in setting global standards for Arctic shipping[29] occurred in 2015 under the auspices of the International Maritime Organization (IMO) with the adoption of a new mandatory Polar Shipping Code, expected to enter into force on January 1, 2017.[30] The Code, covering not only some national waters in the Arctic but also the CAO, will establish global standards for ship design, construction, equipment and operational requirements in support of maritime safety.[31] The Code will also raise the level of global pollution discharge standards for Arctic shipping. For example, discharges into the sea of oil or oily mixtures from any ships will be prohibited. Discharges of noxious liquid substances will also be prohibited. Garbage discharges will be restricted to some cargo residues not harmful to the marine environment and food wastes. Food waste discharges are only permitted when the ship is enroute and not less than 12 nautical miles from the nearest land, nearest ice shelf, or nearest landfast ice. Food wastes must be comminuted or ground, and wastes are not to be discharged onto the ice.

[28] Chairman's Statement (December 3, 2015), available at <http://www/state.gov/e/oes/ris/pr/250352.htm> (accessed January 1, 2016).

[29] For an overview of the various agreements and guidelines applicable to Arctic shipping, See Heike Deggim, "Ensuring Safe, Secure and Reliable Shipping in the Arctic Ocean" in P.A. Berkman and A.N. Vylegzhanin (eds.), *Environmental Security in the Arctic Ocean* (Dordrecht: Springer Science, 2013) 241-254.

[30] International Code for Ships Operating in Polar Waters, adopted by the Marine Environment Protection Committee on May 15, 2015, Res. MEPC. 264(68). MEPC, Report of the Marine Environment Protection Committee on its Sixty-Eighth Session, MEPC 68/21/Add. 1 (5 June 2015), Annex 10 [hereinafter Polar Code].

[31] For further discussions, see David Leary, "The IMO Mandatory International Code of Safety for Ships: Charting a Sustainable Course for Shipping in Polar Regions?" 7 *Yearbook of Polar Law* 426 (2015); J. Ashley Roach, "A Note on Making the Polar Code Mandatory", in Suzanne Lalonde and Ted L. McDorman (eds.), *International Law and Politics of the Arctic Ocean: Essays in Honor of Donat Pharand* (Leiden: Brill/Nijhoff, 2015) 125-140.

3. Hazy Horizons

Future evolutions in Arctic Ocean governance remain quite uncertain with seven key challenges standing out.

3.1 Sorting Out Future Governance Arrangements for the CAO

The Arctic 5 Declaration on CAO Fishing (July 2015) is only a "starting point" for addressing marine living resource management issues with many unresolved questions:

- How will indigenous groups be involved?
- How will a scientific cooperation program be operationalized?
- How will cooperation in maritime monitoring, control and surveillance be put into practice?
- Will a legally binding agreement be forged?
- If so, what will be the membership and elements?
- Should a commercialization future be promoted?
- What are the implications of a potential UN Agreement on the Conservation and Sustainable Use of Marine Biodiversity in Areas beyond National Jurisdiction?

Regarding the latter question, the UN General Assembly in June 2015 through Resolution 69/292 decided to establish a preparatory committee process (2016-2017) to make recommendations to the General Assembly on the elements of a draft text for a new agreement on marine biodiversity in areas beyond national jurisdiction. Negotiations are to address a number of issues that may be relevant to the CAO. Those issues include: access to and sharing of marine genetic resources; environmental impact assessments; and area-based management tools including marine protected areas.

Another hazy dimension is the lack of agreement among Arctic States on whether to take further actions within the IMO to address future shipping activities in the CAO. A 2014 report undertaken by Det Norske Veritas on behalf of the Arctic Council's Protection of the Arctic Marine Environment (PAME) Working Group,[32] set out three main options that could be pursued at the IMO:

- Pursue a Particularly Sensitive Sea Area (PSSA) for the entire high seas area with a Vessel Traffic System (VTS), a Ship Reporting System (SRS) and a dynamic area to be avoided (ATBA).
- Pursue a PSSA for the entire high seas area with just a VTS and SRS.
- Pursue a PSSA for one or more core ice sea areas within the CAO along with areas to be avoided.

[32] Det Norske Veritas, Specially Designated Marine Areas in the Arctic High Seas (2014).

Arctic States have been hesitant to move forward. At PAME's September 2014 meeting, a decision was reached to take a number of interim steps before pursuing actions within the IMO. Among others, they included preparation of a paper investigating the possibility for IMO to designate a PSSA located entirely on the high seas and preparation of a paper exploring whether dynamic areas to be avoided might be established rather than areas with set coordinates.[33] Those papers have yet to be written. At PAME's February 2015 meeting, PAME put in place a further step. PAME invited the Arctic Monitoring and Assessment Programme (AMAP) and Conservation of Arctic Flora and Fauna (CAFF) Working Groups to denote areas of the CAO particularly vulnerable to international shipping,[34] but as of December 2015 that denotation had yet to occur.

3.2 Delineating Potential Extended Continental Shelf Boundaries

All five Arctic coastal States have claims for extended continental shelves beyond 200 nautical miles in the Arctic Ocean, but the boundaries remain largely to be determined.[35] Only Norway has completed the legitimization process through the Commission on the Limits of the Continental Shelf (CLCS) process set out under the Law of the Sea Convention. Canada made only a partial submission to the CLCS on its Atlantic claims in December 2013. Denmark/Greenland has filed CLCS submissions for areas off Southern Greenland (June 2012), Northwest Greenland (November 2013) and Northeast Greenland (December 2014). The Russian Federation made an initial CLCS submission in 2001 which included a claim to the North Pole, but the Commission in 2002 stated it was unable to make a firm determination on the basis of the information provided and recommended a revised submission. A revised Russian submission was submitted in August 2015. The United States, not being a Party to the UN Law of the Sea Convention, is not eligible to submit its claim off Alaska to the CLCS.

Various possible overlapping claims loom on the horizon after the Arctic coastal States have determined their outer continental shelf limits. Possible overlaps include: Canada-U.S. in the Beaufort Sea; Canada, Denmark/Greenland and Russia in the Arctic Basin; and Norway (Svalbard) and Denmark/Greenland.

[33] PAME, Record of Decisions and Follow-Up Actions, PAME II-2014 (16-18 September 2014), 3.
[34] PAME, Record of Decisions and Follow Up Actions, PAME I – 2015 (3-5 February 2015), 3.
[35] For detailed reviews, see Ted L. McDorman, "The International Legal Regime of the Continental Shelf with Special Reference to the Polar Regions" in Natalia Loukacheva (ed.), *Polar Law Textbook II* (Copenhagen: Nordic Council of Ministers, 2013) 77-93; Øystein Jensen, "The Seaward Limits of the Continental Shelf beyond 200 Nautical Miles in the Arctic Ocean: Legal Framework and State Practice" in Christian Jensen and Hønneland, *supra* note 14, 227-246.

3.3 Working Out Future Directions for the Arctic Council

Many questions hover over the future of the Arctic Council.[36] How might the management of non-Arctic States be strengthened? How might financing of Arctic Council activities be enhanced, especially funding for Permanent Participant involvements and adequate funding for Council projects and assessments? Should additional regional agreements be negotiated, for example, an agreement on offshore oil and gas operational standards[37] or a framework treaty further formalizing the Arctic Council and national commitments?[38] How might the "Arctic voice" be better communicated in international fora?

Some promising clarification avenues were given in the Arctic Council's Iqaluit Declaration of April 24, 2015. The Declaration has tasked Senior Arctic Officials with providing further guidance on engaging with Observers and commits to identifying new approaches to funding Permanent Participants. Through the Declaration, Ministers also decided to establish a Task Force on Arctic Marine Cooperation (TFAMC) to consider possible ways forward for enhancing cooperation including through a regional seas program.

The terms of reference for the TFAMC are quite broad.[39] The Task Force has a mandate to consider whether a cooperative mechanism should have a defined geographical scope, such as the high seas areas of the CAO and/or seabed areas beyond national jurisdiction. Other issues to be considered include the relationship of a new cooperative mechanism to existing institutions and the legal form (binding or non-binding). The Task Force, expected to submit a final report to the 2017 Arctic Council Ministerial meeting, held its first meeting in September 2015 and it remains to be seen how CAO issues will be dealt with.

[36] For further discussion, see Oran R. Young, "The Evolution of Arctic Ocean Governance" in Oran R. Young, Jong Deog Kim and Yoon Hyung Kim (eds.), *The Arctic in World Affairs: A North Pacific Dialogue on the Future of the Arctic, 2013 North Pacific Arctic Conference Proceedings* (Seoul: Korea Maritime Institute and Honolulu: East-West Center, 2013) 267-298; Piotr Graczyk and Timo Korvurova, "The Arctic Council" in Christian Jensen and Hønneland, *supra* note 14, 298-327.

[37] Arctic States have not been keen on developing binding operational standards and seem content with Arctic Offshore Oil and Gas Guidelines (2009) and a new Framework Plan for Cooperation on Prevention of Oil Pollution from Petroleum and Maritime Activities in Marine Areas of the Arctic (2015). See Arctic Council, Iqaluit Declaration, *supra* note 9, para. 32.

[38] See Timo Koivurova, "Can We Conclude an Arctic Treaty? – Ministerial Windows of Opportunity" 7 *The Yearbook of Polar Law* 410 (2015).

[39] See Senior Arctic Officials' Report to Ministers, Iqaluit, Canada (24 April 2015) 78.

3.4 Identifying and Protecting Areas of Heightened Ecological and Cultural Significance in National Waters

The Arctic Council's Arctic Marine Shipping Assessment (AMSA), published in 2009,[40] flagged the identification and protection of areas of heightened ecological and cultural significance as a priority issue. Arctic States were urged to conduct surveys on Arctic marine use by indigenous communities.[41] Arctic States were encouraged to ensure effective coordination mechanisms are in place to engage coastal communities in helping to reduce the impacts from shipping.[42] Arctic States were also urged to identify areas of heightened ecological and cultural significance and to take protective measures.[43]

Some progress has been made in identifying significant marine areas. A 2013 report prepared by three of the Arctic Council's Working groups, while admitting the lack of the information on areas of heightened cultural significance, identified a total of about 97 areas of heightened ecological significance comprising more than half of the ice-covered part of the marine Arctic.[44]

Protective routeing measures, adopted through the IMO, for environmental purposes are still very limited in Arctic waters. Those measures include a system of traffic separation schemes and recommended routes off northern Norway, effective July 1, 2007, to keep tankers of all sizes and large cargo ships about 30 nautical miles offshore from sensitive coastal lands.[45] In June 2015, the IMO's Maritime Safety Committee approved five recommendary areas to be avoided off the Aleutian Islands in Alaska. Applicable to ships of 400 gross tonnage and above on international voyages, the measures, taking effect on January 1, 2016, are aimed at providing "buffer zones" of approximately 50 nautical miles around vulnerable island areas.[46]

Besides uncertainty over what further protective measures might be sought by Arctic States through the IMO, there is also the question of whether coastal States might move unilaterally to establish additional vessel routeing measures. Unilateral measures taken beyond internal and territorial sea waters might be justified under the special legislative

[40] Arctic Council, *Arctic Marine Shipping Assessment 2009 Report* (April 2009, second printing) [hereinafter AMSA].
[41] AMSA Recommendation II(A).
[42] AMSA Recommendation II(B).
[43] AMSA Recommendation II(C).
[44] AMAP/CAFF/SDWG, Identification of Arctic Marine Areas of Heightened Ecological and Cultural Significance: Arctic Marine Shipping Assessment (AMSA) IIc (2013).
[45] IMO, New and Amended Existing Traffic Separation Schemes, COLREG.2/Circ.58 (11 December 2006) Annex 1.
[46] IMO, Routeing Measures Other Than Traffic Separation Schemes, SN.1/Circ.331 (13 July 2015) Annex, 2-3.

and enforcement powers bestowed by the ice-covered waters provision of LOSC (Art. 234).[47]

3.5 Conserving Arctic Migratory Bird Populations

The conservation of Arctic migratory birds represents an important issue. At least 279 bird species from outside the Arctic take advantage of the highly productive summer breeding seasons.[48] The Arctic hosts some 80 per cent of the global goose populations.[49]

The CAFF Working Group is still in the early stages of carrying out priority actions under its Arctic Migratory Birds Initiative (AMBI) to strengthen conservation efforts in the four main flyways of the world, the Americas Flyway, the African-Eurasian Flyway, the Circumpolar Flyway and the East Asian-Australasian Flyway. AMBI offers a window of opportunity for non-Arctic States to join conservation efforts and the AMBI Workplan 2015-2019[50] suggests various actions relating to the East Asian-Australasian Flyway (EAAF) in particular. National related actions include stopping or modifying intertidal reclamation plans in China (Jiangsu province)[51] and initiating dialogue with Japan on ways to promote conservation of migratory birds in the EAAF.[52] The Workplan calls for exploring broader Southeast Asia initiatives such as possibly forming an Association of Southeast Asian Nations (ASEAN) plus network on migratory bird sites and possibly convening of an international conference / workshop in Singapore on migratory bird conservation (2016/2017).[53] The Plan urges all EAAF countries to increase support of the East Asian-Australasian Flyway Partnership Secretariat based in South Korea.[54]

3.6 Establishing a Regional Network of Marine Protected Areas (MPAs)

The Arctic Council remains committed to forging a regional network of MPAs. Ministers, through the Iqaluit Declaration of April 2015, decided to continue work to develop such a network.[55] The Arctic Council's Arctic Marine Strategic Plan 2015-2025 lists the development of a Pan-Arctic network of MPAs as one of the strategic actions.[56]

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[47] For a review of the potential controversy over the scope of Article 234, see Ted L. McDorman, "Canada, the United States and International Law of the Sea in the Arctic" in Stephens and VanderZwaag, *supra* note 6, 253-268.
[48] S. Deinet et al., The Arctic Species Trend Index: Migratory Birds Index, CAFF Assessment Series Report (2015) 8; D.A. Scott, Global Overview of the Conservation of Migratory Arctic Breeding Birds Outside the Arctic, CAFF Technical Report No. 4 (1998) vii.
[49] Deinet, et al., *supra* note 48.
[50] V. Johnston et al., Arctic Migratory Birds Initiative (AMBI): Workplan 2015-2019, CAFF Strategy Series Report No. 6 (2015).
[51] *Ibid.* at 20.
[52] *Ibid.* at 23.
[53] *Ibid.*
[54] *Ibid.* at 21.
[55] Iqaluit Declaration, *supra* note 9, para. 40
[56] Arctic Council, Arctic Marine Strategic Plan 2015-2025 (2015), Action 7.2.10.

However, the parameters of an MPA network remain uncertain. The PAME Working Group has adopted a Framework for a Pan-Arctic Network of Marine Protected Areas[57] but the Framework stands out as being "politically cautious." No regional target is adopted for MPA designations. The Framework leaves priorities and timelines for possible MPA additions to each Arctic State.

Further "paper steps" are promised in PAME's Workplan 2015-2017. An updated inventory of existing Arctic MPAs is to be undertaken and a desktop study of areas-based conservation measures in the Arctic is to be completed.[58]

3.7 Further Addressing Shipping Safety and Pollution Issues

While the new Polar Shipping Code should go a long way to enhance shipping safety and pollution prevention in the Arctic, not all shipping issues have been resolved.[59] Key issues include: ensuring effective ballast water management in polar waters; considering further heavy fuel oil (HFO) bans (beyond limited prohibited areas in Svalbard); controlling black carbon emissions; possibly designating one or more Emission Control Areas in the Arctic where more stringent than normal pollution controls from sulfur oxide, nitrogen oxide and particulate matter might be imposed; and extending the Code's coverage to cover fishing vessels and private yachts.

4. Conclusion

One final nautical image helps capture the "bottom line" regarding Arctic Ocean governance. An unfinished voyage! As discussed, seven major challenges remain to be fully navigated. Many other challenges could be added, such as ensuring sustainable tourism development in the Arctic and ensuring adequate infrastructure to support safe and reliable northern shipping. Arctic States and the global community still have a long way to go in managing future human uses of the Arctic Ocean and in protecting Arctic communities from pollution outside the region.

[57] PAME, Framework for a Pan-Arctic Network of Marine Protected Areas (April 2015).
[58] PAME, PAME Work Plan 2015-2017 (2015), Annexes IV and V.
[59] For a further review of the various issues, see David L. VanderZwaag, "Climate Change and the Shifting International Law and Policy Seascape for Arctic Shipping", in Randall S. Abate, ed., *Climate Change Impacts on Ocean and Coastal Law: U.S. and International Perspectives* (Oxford: Oxford University Press, 2015) 299-314.