CHAPTER 10

Canada and the Future of Arctic Coastal State Jurisdiction

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Abstract

This chapter explores how jurisdiction under Article 234 may be used by Arctic coastal States at a time marked by significant change. Warming temperatures reshape the physical and ecological environment of the Arctic, making it more hospitable to shipping, but also more vulnerable to its threats. The Polar Code, adopted as the international response to increasing polar shipping and growing awareness of its detrimental impacts, alters the legal environment by providing the first binding international regulations tailor-made for navigation in polar waters. This chapter sets out to investigate the legal implications of these changes for coastal State regulation under Article 234 with a particular focus on Canada. It starts by tracing Canada’s history of regulating shipping in its Arctic waters with the objective to understand how the consequences of this politically fraught endeavour still reverberate today. The chapter then turns to examine the geographical and material scope of jurisdiction under Article 234 against the background of present-day imperatives, before critically assessing Canada’s strategy to subject navigation in its Arctic waters to a single set of rules. The chapter closes by summarizing the main conclusions, which may hold lessons for future regulatory action.

Keywords


1 Introduction

In recent years, regulatory action has been stepped up significantly to address the strain shipping imposes on polar ecosystems, which already suffer tremendous stress brought on by a warming climate. There is a broad consensus that the risks posed by vessels are best addressed through a global approach,
resting upon regulations developed under the auspices of the International Maritime Organization (IMO) and imposed on vessels by their respective flag States. Uniform international standards are perceived as a basic condition for a business sector that is premised on global mobility and a level playing field. The importance of such uniform standards, equal to that of freedom of navigation, is recognized by the general legal framework of the law of the sea and the United Nations Convention on the Law of the Sea (LOSC). Their indispensable role is reflected by Article 94 on the "duties of the flag State." For that same reason, Article 194 on the general obligation to prevent, reduce and control pollution calls for harmonization of State policies, while Article 211 on vessel-source pollution requires flag States to develop international minimum standards to be imposed on their respective vessels. With respect to Arctic shipping, the 2009 Arctic Council AMSA Report echoes the importance of uniformity and calls for the development of international regulatory regimes to address Arctic-specific issues of shipping. After years of negotiation, the entry into force of the Polar Code in 2017 finally ushered in the first international binding regime tailor-made for shipping in polar regions.

In Canadian Arctic waters, navigation has been under specific mandatory rules long before the Polar Code was even envisioned. Driven by a combination of concerns for the environment, vessel safety and—more sweepingly—Canada's "sovereignty" over its Arctic expanse, Canada pioneered by pursuing a coastal State approach to ensure safety of navigation and pollution prevention in its Arctic waters. The decision was prompted by the 1969 crossing of

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1 For the role of flag States, see Bankes in this volume.
4 Id., Article 94(5).
5 Id., Article 194(1).
6 Id., Article 211(1) and (2).
the US-flagged ice-strengthened oil tanker SS Manhattan, sent through the Northwest Passage, as Lackenbauer and Lajeunesse describe in this volume, to determine the feasibility of year-round operations to ship oil from Alaskan extraction sites to refinery sites on the US east coast. In response, Canada enacted the 1970 Arctic Waters Pollution Prevention Act (AWPPA), prohibiting any deposit of waste in Arctic waters. This zero-discharge rule is still at the heart of Canada's regulatory regime to prevent vessel-source pollution. In 1977, Canada added NORDREG, a ship reporting scheme combined with vessel traffic services for the Arctic region, applied on a voluntary basis until it became mandatory in 2010.

Eventually, Canada's approach to ensure safety of navigation and pollution prevention in its Arctic waters was internationally validated by the inclusion of Article 234 in the LOSC. Negotiated at the Third United Nations Conference on the Law of the Sea (UNCLOS III) among Canada, the United States and Russia, the provision grants coastal States exceptional jurisdiction over ice-covered waters, enshrining in international law Canada's unilateral, environmentally focused, coastal State-based strategy. At the time, in the absence of specific international standards on Arctic navigation, the purpose of Article 234 was obvious: it allowed coastal States to fill some of the regulatory gaps. However, only Canada and Russia have made use of their jurisdiction. And as Chircop rightly states, since 2017, “the substantive purpose of Article 234 has been addressed by the Polar Code [to a great extent],” conceding “this does not necessarily mean that there is no further purpose for the exercise of Article 234 jurisdiction.” As Vincent et al. outline in this volume, the Arctic Ocean and its unique ecological features are under increasing stress from warming temperatures, pollution, biodiversity loss and habitat destruction. The additional stress imposed by Arctic shipping therefore calls for continued regulatory action.

For Canada, the international flag State-based approach to regulating Arctic navigation raises the issue of how unilateral coastal State jurisdiction under Article 234 may be used in the future. At stake is not only the technical issue of appropriate standards to address concerns of safety of navigation and environmental protection. Any regulatory action related to international navigation in Canadian Arctic waters always also implies assertion of jurisdiction,

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10 Arctic Waters Pollution Prevention Act, SC 1969–1970, c 47; current version, see RSC, 1985, c A-12 [AWPPA].
11 Id., s 4.
12 For the mandatory version, see Northern Canada Vessel Traffic Services Zone Regulations, SOR/2010-127 [NORDREG].
a highly sensitive political issue and closely scrutinized since the late 1960s. Focusing its attention on Canada, this chapter sets out to explore the future of coastal State jurisdiction under Article 234. After tracing the complex equilibrium of the current legal state, it successively examines the geographical and the material scope of jurisdiction under Article 234, as well as Canada’s “single approach” to regulating shipping in its Arctic waters. The chapter will conclude with some policy suggestions.

2 Shipping in the Canadian Arctic: Tracing Canadian Law-Making

The 1969 ss Manhattan crossing of the Northwest Passage made Canada’s political leadership and the broader public aware of a twofold risk facing the Canadian Arctic. The hazardous nature of Arctic shipping, due to extremely difficult conditions of navigation, created by sea ice and cold temperatures and compounded by a lack of reliable charting, became common knowledge. The threat posed to the environment had a galvanizing effect at a time when the need for environmental protection started to draw attention beyond scientific circles. Recent incidents, including the oil spill caused by the 1967 grounding of the ss Torrey Canyon off the coast of England and, closer to home, the oil spill caused by the 1970 grounding of the ss Arrow off the coast of Nova Scotia conjured the striking image of a black tide on white ice cover and fuelled opposition to Arctic shipping.

Furthermore, the refusal by the United States to seek permission for the Manhattan crossing made it plain that Canada’s view of its Arctic expanse as “national terrain” was not necessarily shared. The reasoning behind the refusal—the fact that the Manhattan would not enter Canadian territorial waters, but remain in international waters throughout its voyage—did not prove reassuring enough. Nor did the fact that Canada asserted jurisdiction by granting unasked-for permission, sent the Canadian Coast Guard icebreaker Sir John A. MacDonald to escort the Manhattan and dispatched a Canadian

15 Growing environmental awareness led to the 1972 UN Conference on the Environment held in Stockholm.
16 Expression used in 1958 by the Minister of Northern Affairs and cited in a 1969 policy statement by Prime Minister P.E. Trudeau, see House of Commons, Debates (15 May 1969), 8720.
official on board the *Manhattan*. The incident sowed the seeds of what would become the controversy over the legal status of the waters of the Arctic Archipelago, often framed in the politically catchy, but legally misleading phrase of “Canada's Arctic sovereignty.”

### Innovative Coastal State Measures Following the Manhattan Crossing

While the Arctic had long been part of Canadian identity, the *Manhattan* crossing revealed the uncertainties surrounding Canada's jurisdiction over the maritime area. The challenge for Canada was to plot a legal course out of the political conundrum created by the *Manhattan* incident, a course that could both appease domestic concerns and avert international objections. Canada's 1970 response was two-pronged. First, Canada extended the breadth of its territorial sea from three to twelve nautical miles (M), declaring that territorial waters, newly overlapping at several points in the Arctic Archipelago, would make it henceforth impossible to sail through the Northwest Passage without passing through Canadian territorial waters. While the US government criticized Canada for proceeding unilaterally, it did not oppose the extension as such, which followed then developing State practice.

The second, more daring, part of Canada's response was the adoption of the AWPPA. Canada chose to assert jurisdiction over an extensive area, but did so with respect to a narrowly defined subject matter. The AWPPA introduced the concept of 'arctic waters,' taking a broad view of the concerned waters, which included

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Not only did these ‘arctic waters’ encompass all waters of the Archipelago, they also formed a belt of up to 100 M in breadth around the Archipelago, extending far beyond the narrow strip of typical coastal waters and Canada’s newly extended territorial sea. Reassuring from a domestic viewpoint, the asserted jurisdiction was, however, questionable from an international law perspective. The risk of international opposition was all the more real as Canada’s AWPPA was contemporary with attempts by some coastal States to extend territorial sovereignty beyond 12 nautical miles. These attempts met with strong resistance and, given their impact on freedom of navigation, never gained enough traction to become established in law.

Canada’s approach, however, differed in a significant way from these sweeping claims of territorial sovereignty. It was more in line with the restricted approach that focused on coastal fisheries and eventually led to the concept of the exclusive economic zone (EEZ). The AWPPA indeed pursued a narrowly defined objective, that is, the protection against vessel-source pollution. This “constructive and functional approach,” as McDorman explains, consists in asserting jurisdiction only to the extent it is “functionally necessary” to achieve the set goal. The genius of the AWPPA was that it had a geographical scope broad enough and a ‘zero-tolerance’ signal firm enough to address immediate, mainly domestic, concerns that shipping would threaten the Arctic environment, while its narrow pollution prevention focus put potential challengers in a political and moral bind that held international opposition at bay.

Although the environmental objective of the AWPPA garnered international sympathy, Canada’s unilateral approach and contribution to creeping jurisdiction nevertheless displeased several States, including the United States. As a precaution and obviously to prevent formal legal challenges to the AWPPA

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23 AWPPA (n 10), s 3(1).
25 Rothwell and Stephens (n 22), p. 69.
26 House of Commons, Debates (16 April 1970), 5951.
27 McDorman (n 21), p. 75.
28 Id., at 76–78, citing a Canadian government official mentioning “a drawer full of protests.” Pointing to consultations Canada was conducting when fleshing out its regulatory
that could have been hard to win, Canada decided to exempt disputes over coastal State jurisdiction from its acceptance of compulsory jurisdiction of the International Court of Justice (ICJ). In 1985, following the conclusion of the LOSC, the exemption was removed, signalling Canada’s confidence that its domestic law had not only acquired legitimacy, but also a solid basis in international law thanks to Article 234. Interestingly, it was only in 2010 that Canada’s “arctic waters” were extended to reach a maximum of 200 M, in accordance with Article 234.

2.2 **Implications of Canada’s Claim of a Historic Title over Its Arctic Archipelago**

A complicating twist to the legal debate about Canada’s coastal State jurisdiction in its Arctic waters is Canada’s claim that the waters of the Arctic Archipelago are historic internal waters, arguably derived from the 1880 transfer of the Arctic area from Great Britain to Canada. According to Lajeunesse’s account, signs that Canada considered these waters its own can be found throughout the first half of the twentieth century, although a coherent legal policy undergirding the claim was emerging only towards the end of the 1950s. Helped along by the 1951 ICJ Anglo-Norwegian Fisheries case, it coalesced around the notion that waters within coastal archipelagos may be considered historic internal waters and enclosed by straight baselines. Pharand traces a regime, McDorman questions the degree to which Canada’s measures can be considered unilateral.

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30 Canada, Declaration Recognizing as Compulsory the Jurisdiction of the Court, 7 April 1970, 744 UNTS 63, at 66 (item 2(d)).
31 Canada, Declaration Recognizing as Compulsory the Jurisdiction of the International Court of Justice, 10 September 1985, 1406 UNTS 133, at 134.
33 *Act to amend the Arctic Waters Pollution Prevention Act, SC 2009, c 11, s 1.*
34 McDorman (n 21), p. 235.
first public claim of sovereignty based on historical grounds to a 1969 House of Commons Committee report\textsuperscript{37} and the first clear reference to a historic title to a 1973 letter emanating from Foreign Affairs.\textsuperscript{38} According to the letter, “Canada ... claims that the waters of the Canadian Arctic Archipelago are internal waters of Canada, on a historical basis, although they have not been declared as such in any treaty or by any legislation.”\textsuperscript{39} Pre-empting criticism of inconsistency with Canada’s functional approach, the letter remarks that exercise of functional jurisdiction does not preclude a “subsequent claim of full sovereignty on historic or other grounds.”\textsuperscript{40} Lajeunesse explains Canada’s subdued public conduct with its anxiousness to avoid open US opposition to the claim, which may have proved irresistible.\textsuperscript{41} The functional course steered by Canada since the adoption of the AWPPA, and later reinforced by Article 234, enabled the postponing of a more assertive approach to the status of the waters of the Arctic Archipelago.

Things came, however, to a head in 1985, when the US Coast Guard ice-breaker \textit{Polar Sea} was sent through the Northwest Passage. Planned by US and Canadian officials as purely operational, the transit turned into a political crisis when popular perception made it out to be a challenge to Canada’s sovereignty\textsuperscript{42} and the US government, pressured by its Canadian counterpart, failed to request permission, even asserting that the transit was “an exercise of navigational rights and freedoms not requiring prior notification.”\textsuperscript{43} Canada did not oppose the passage, which it deemed in compliance with applicable standards. Instead, it again granted unasked-for permission and sent two officers on board the \textit{Polar Sea} to observe the voyage. However, the time had come to assert “Canada’s full sovereignty over the waters of the Arctic [A]rchipelago”\textsuperscript{44} and the Canadian government decided to do so by drawing baselines around 

\textsuperscript{40} Id., 279.
\textsuperscript{41} Lajeunesse (n 36), chapters 4–7.
\textsuperscript{42} Id., 255–261.
\textsuperscript{44} House of Commons, \textit{Debates} (10 September 1985), 6463.
the Archipelago, effective 1 January 1986. They were declaratory only and meant to “define the outer limit of Canada’s historic internal waters.”

Although Canada did not act on that claim, leaving regulation of international navigation in the Archipelago unaltered, the international reaction was noticeable. The US government, considering the Northwest Passage an “international strait” where freedom of navigation applies, ignored the stated purpose of the baselines and responded by reframing them as a means for Canada to “establish its claim” of internal water and declaring “that there is no basis in international law to support the Canadian claim.” Member States of the European Community essentially endorsed this view. Bilateral US-Canadian attempts to find common ground led to the 1988 “agreement to disagree.” In this carefully worded agreement on scientific cooperation in the Arctic, the United States pledges “navigation by U.S. icebreakers within waters claimed by Canada to be internal will be undertaken with the consent of the Government of Canada.” The question of the legal status of the Northwest Passage nevertheless remains, with both parties reserving their respective position. In recent years, international opposition to Canada’s position on its internal waters seems to have faded, with disapproval being voiced subtly in national Arctic strategies.

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45 Territorial Sea Geographical Coordinates (Area 7) Order, SOR/85–872.
46 House of Commons, Debates (n 44), 6463 (emphasis added).
47 For a recent iteration, see White House, National Strategy for the Arctic Region, 10 May 2013, n 1, https://obamawhitehouse.archives.gov/sites/default/files/docs/nat_arctic_strategy.pdf.
48 James W. Dyer, Acting Assistant Secretary of State for Legislative and Intergovernmental Affairs, Letter dated 26 February 1986, reproduced in United States Department of State (n 43), p. 29 (emphasis added).
49 British High Commission Note No. 90/86 of 9 July 1986, reproduced in United States Department of State (n 43).
51 Id., cl 4.
2.3 Canadian Law in the Polar Code Era

A new era was ushered in when the Polar Code became mandatory in 2017. Regulation of polar navigation now rests mainly on internationally agreed-upon obligations. In a major shift towards flag State-centred responsibility, these are primarily imposed by the flag State on vessels flying its flag. Incidentally, the coastal State may impose them on foreign-flagged vessels navigating in waters under its jurisdiction as “generally accepted international rules and standards.” Besides pollution prevention obligations, the Polar Code also prescribes obligations on safety of navigation, extending the functional approach pioneered by Canada in its Arctic waters.

During negotiations, Canada aimed to ensure that the Polar Code would achieve at least the level of protection established by its coastal State regulations. Arguably, this goal was met, as Canada's new 2018 Arctic Shipping Safety and Pollution Prevention Regulations (ASSPPR) essentially align domestic standards with the Polar Code. Safety provisions are incorporated by reference and complemented by a few additional requirements. Environmental requirements are directly, albeit selectively, incorporated, preserving the pre-existing level of protection resulting from the AWPPA zero-discharge principle.

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54 LOSC (n 3), Article 211(2).

55 On the issue of these so-called GAIRS, see Bankes in this volume.

56 Domestic regulation included, besides NORDREG (n 12), in particular the Arctic Shipping Pollution Prevention Regulations, CRC, c 353 (repealed) adopted under the AWPPA (n 10).


58 ASSPPR (n 57), s 6.

59 For example, the requirement of an ice navigator in specific circumstances. Id., s 10.

60 Id., s 12 ff. Discharge restrictions for sewage for example were tightened (Id.,ss 19–20) and some Polar Code allowances were not included in the ASSPPR, see Bartenstein (n 57), p. 344.
The few regulatory departures from Polar Code standards bring attention to another Canadian concern during negotiations. Intent on upholding coastal State jurisdiction under Article 234, Canada sought to ensure that it could not be considered neutralized by the new flag-State regulations of the Polar Code. As a result, a savings clause was included in the new SOLAS chapter on safety provisions,\(^61\) while the general MARPOL savings clause was deemed sufficient regarding the pollution prevention provisions.\(^62\) Although the Polar Code therefore does not stand in the way of unilateral coastal State regulations,\(^63\) it nevertheless has implications for jurisdiction under Article 234, as it provides, in Chircop’s words, the “new baseline” for regulation of Arctic shipping.\(^64\) Such guidance may be drawn from the Polar Code’s mandatory requirements (Parts I-A and II-A), but also from its additional recommendations (Parts I-B and II-B). Interpretation may further be informed by the more general international outlook on the implications of polar navigation, expressed in the Preamble.

### 3 Revisiting the Geographical Scope of Article 234

The geographical scope of application of Article 234 has prompted discussion from the outset. Its convoluted wording first raised the question of how the provision fits into the LOSC’s general framework of maritime zones. Rising temperatures now prompt concern that receding ice cover might shrink its geographical scope of jurisdiction.

#### 3.1 Article 234 in the Context of the LOSC’s Zonal Framework

Article 234 provides the coastal State with the authority to adopt and enforce measures related to “pollution from vessels in ice-covered areas within the limits of the exclusive economic zone” (emphasis added). Ambiguous and unique in the LOSC, this phrasing may refer to both the EEZ’s inner and outer limits or to its outer limits only. While the “ordinary meaning ... given to the terms of

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61 SOLAS (n 53), Chapter XIV, reg 2, para 5.
62 MARPOL (n 53), Article 9(2). Canada had addressed the meaning of the clause in relation to Article 234 in a statement upon becoming a party to the Convention in 1992, see IMO, Status of IMO Treaties (as of 16 August 2022), 133 (Canada, “2. Arctic Waters” b), https://wwwcdn.imo.org/localresources/en/About/Conventions/StatusOfConventions/Status\%620-\%6202021.docx.
63 For details, see Bartenstein (n 57), pp. 351–352.
64 Chircop (n 13), p. 283.
the treaty in their context and in the light of its object and purpose."\textsuperscript{65} should generally guide interpretation, the ordinary meaning of the atypical phrasing in Article 234 is all but certain. The EEZ is defined in LOSC Article 55 as "an area beyond and adjacent to the territorial sea" that, according to LOSC Article 57, "shall not extend beyond 200 nautical miles from the baselines." However, none of these provisions clarifies what limits are referred to in Article 234, leading to diverging interpretations.

McRae and Goundrey, followed by Boyle, consider that Article 234 applies to the EEZ only.\textsuperscript{66} Franckx and Boone consider that this "narrow or literal interpretation is the most convincing one," arguing that "the geographical extent of Article 234 must be understood as within 12 and 200 [nautical miles], measured from the baseline."\textsuperscript{67} This interpretation, which fits neatly into the zonal framework of the LOSC, makes it appealing from a systematic point of view. It does result, however, in Arctic coastal State powers that are broader in the EEZ than in the territorial sea or a strait, not least with respect to enforcement.

Taking the opposite view, Pharand contends that the provision "must have been intended to include the territorial sea."\textsuperscript{68} In support, he cites senior Canadian delegate to UNCLOS III, Léonard Legault, who wrote that Article 234 "ratifies Canada's action in adopting the Arctic Waters Pollution Prevention Act in 1970."\textsuperscript{69} This is corroborated by declassified US diplomatic cables and other confidential US communications of the time, which clearly envision Article 234 to also apply to the territorial sea.\textsuperscript{70} The provision has even been described as applying "from the outer limits of the coastal State's exclusive economic

\textsuperscript{65} Vienna Convention on the Law of Treaties, 23 May 1969 (in force 27 January 1980), 1155 UNTS 331, Article 31(1) [VCLT].


zone to that State’s coastline.” According to Bernard Oxman, US delegate to UNCLOS III and chairman of the English Language Group of the Conference Drafting Committee, Article 234 was “intended to embrace all waters landward of 200 miles, including the territorial sea, internal waters, and straits.”

If Article 234 does indeed extend to all waters landward of 200 M, including straits, it may still be questioned whether coastal State powers under Article 234 override the right of transit passage. In other words, in the event that the Northwest Passage is to be considered a strait used for international navigation, would Article 234 still apply? Mostly this is thought to be the case, and for good reason. Canada engaged in UNCLOS III negotiations with the objective to enshrine coastal State jurisdiction for laws such as the AWPPA precisely because Canada’s powers over the Northwest Passage were controversial. The United States, pushing for a new straits regime, had their own motives to remove the Northwest Passage from the debate. According to US diplomatic cables of the time, it sought a “quid pro quo” or a “package deal,” that is, Canada’s endorsement of the straits regime in return for US support for the “Arctic pollution article, which would apply to the Northwest Passage.”

Interpretation denying the applicability of Article 234 to the Northwest Passage would empty the provision of its intended meaning. It would also

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71 Nordquist et al. (n 32), para 234.5(d) (p. 397).
74 See McRae (n 18), p. 18; Pharand (68), pp. 46–47. Oxman’s affirmation (n 72) may also be interpreted in this sense.
77 Cable on “Arctic Pollution Article” (n 75), p. 2.
78 Memorandum for the President (n 70), p. 4. See also cable on “Arctic Pollution Article” (n 75), p. 2.
be problematic from a drafting point of view. A caveat in Article 233 indeed insulates the straits regime from Part XII sections 5 to 7. By its terms, Article 233 does not extend to Article 234, which forms section 8. This suggests that Article 234 may be applied to straits.\(^79\) Consequently, if the Northwest Passage were to be considered a legal strait, Canada would still have authority under Article 234, limiting the practical relevance of the debate on the status of the Northwest Passage.

All this is not antithetical to Canada considering the Northwest Passage historic internal waters. This position has emerged since the 1950s and crystallized more clearly after the Manhattan incident, but as Lajeunesse shows, Canada refrained from openly acting on it. To prevent forceful backlash with potentially irreversible consequences, it steered instead a cautious, functional course in its international dealings.\(^80\) At UNCLOS III this translated into the “package deal,” which essentially allowed the two States to agree to disagree on the status of the Northwest Passage.\(^81\) Claiming the waters of the Archipelago as historic internal waters, and delineating them unequivocally through base-lines drawn around the Archipelago following the 1985 Polar Sea transit, does not prevent Canada from self-restraining and keeping its regulation within the bounds of Article 234.

3.2 Article 234 in the Context of Receding Sea Ice Cover

Another question regarding the extent of the geographical scope of Article 234 arises from the provision’s reference to ice cover. In recent years, warming temperatures have caused tremendous loss of Arctic sea ice, which decreases in thickness and extent. Regarding the annual minimum extent at the end of the Arctic summer, the loss of sea ice area approaches a staggering 50 percent between 1979 and 2020.\(^82\) Although sea ice attrition affects the entire region, its magnitude varies greatly across Arctic waters.\(^83\) In the Canadian Arctic, some regions already experience a rapid increase in the number of ice-free days, while others are likely to retain thick multiyear ice over the next few decades.\(^84\)

\(^79\) See also Nordquist \textit{et al.} (n 32), para 234.1 (p. 393); McRae (n 76), pp. 109–111.

\(^80\) Lajeunesse (n 36), p. 178 ff.

\(^81\) Id., p. 202 ff.

\(^82\) See Lasserre in this volume.

\(^83\) Id., in particular Figure 1.

Given the overall trend of continued sea ice loss though, the legal concern is that jurisdiction under Article 234 could simply melt away.

Under the heading ‘ice-covered waters,’ Article 234 refers to ice cover twice: coastal States are granted jurisdiction regarding “marine pollution from vessels in ice-covered areas ... 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” (emphasis added). Well before global warming became a concern, McRae and Goundrey framed the issue raised by this phrasing as a matter of material scope, focusing on whether coastal State measures are restricted to addressing obstructions and hazards created by the ice cover and severe climatic conditions. This may reflect the general understanding of the time that the geographical scope of the provision was not in doubt.

Although ‘ice cover’ may in practice refer to a broad range of ice conditions, it is not defined in the LOSC. Its meaning varies depending on context, as illustrated by the various thresholds of ice concentration and ice thickness that are in use for scientific and navigational purposes. Further specification in Article 234 that areas concerned are ice-covered “for most of the year” allows one to infer that the jurisdiction was not intended for regions that experience only seasonal ice cover, such as the North Atlantic, the Baltic Sea, the Bering Sea or the Sea of Okhotsk. It is noteworthy that Canada’s regulation of Arctic shipping does not refer to ice cover, but determines the scope of application based on geographic boundaries, such as those of the definition of “arctic waters.” There is indeed good reason to think that the reference to ice cover was not intended to be taken in a literal, but rather in a figurative sense or as a general geographical marker.

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86 McRae and Goundrey (n 66), p. 216 ff. For the discussion on the material scope, see below.
87 NSIDC uses a 15 percent threshold, “meaning that if the data cell has greater than 15 percent ice concentration, the cell is labeled as ‘ice-covered.’” See National Snow and Ice Data Centre (NSIDC), “Why is Sea Ice Important?,” https://nsidc.org/learn/parts-cryosphere/sea-ice/quicks-facts-about-sea-ice. For presence of ice to be recorded on Canadian ice charts, its concentration must be at least one tenth. See “Interpreting Ice Charts: Chapter 3,” Government of Canada, last modified 7 March 2016, https://www.canada.ca/en/environment-climate-change/services/ice-forecasts-observations/publications/interpreting-charts/chapter-3.html.
88 For the definition, see n 23.
This finds support in McRae’s account of the provision’s drafting history. Early references to ‘ice-covered waters’ were arguably made to contextualize the exceptional authority that was contemplated to allow the coastal State to address the “exceptional hazards to navigation” and the vulnerability of the region brought on by ice.\(^9\) In the same vein, the *Virginia Commentary*—after referring to severe climatic conditions and the presence of ice as if citing criteria—states that it is “the general characteristic of the climate ... that should be borne in mind.”\(^9\)

As Kraska underlines, “[o]stensibly applicable to all ‘ice-covered areas,’ the new article was really only about the Arctic Ocean.”\(^9\) This understanding also transpires from the aforementioned US Memorandum for the President. It explains that “[w]hile the Arctic is not specified, the Article will apply only to ‘ice-covered’ areas ... This will in fact limit the area to the Arctic Ocean,” adding that “Antarctica would not ... be included” in its purview.\(^9\) Precisely why it is that the Arctic Ocean is not referred to in Article 234 is not clear, but explicit reference to it would have stood out in a convention applicable to the entire world ocean. A more generic reference to polar waters may have easily derailed negotiations by broadening the issues at stake and by increasing the number of interested States. McRae indeed credits the three-party negotiations and agreement on the terms of the provision for the successful inclusion of Article 234 in the *LOSC*.\(^9\)

If ice cover was never considered a condition for the application of the ‘Arctic exception’ or ‘Arctic Article,’ as the provision is sometimes nicknamed,\(^9\) then there should be no cause for concern that jurisdiction under Article 234 is melting away. Furthermore, despite the increasing likelihood that the Arctic Ocean will become ice-free during summer before mid-century, ice will continue to build up in winter.\(^9\) ‘Atlantification’ of the Arctic Ocean, which entails

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\(^9\) McRae (n 79), pp. 107–110.
\(^9\) Nordquist *et al.* (n 32), para 234.5(e) (p. 397).
\(^9\) *Memorandum for the President* (n 79), p. 3.
\(^9\) McRae (n 79), pp. 109–110.
\(^9\) For the latter, see Nordquist *et al.* (n 32), para 234.1 (p. 393).
sea ice loss in winter, is mostly affecting the Eurasian Arctic.\textsuperscript{97} Given long polar winters and the geophysical reality of the Canadian Arctic, ice is likely to remain a defining feature ‘for most of the year’ in the foreseeable future.

Finally, a teleological argument can be made that decreasing ice should have no bearing on the provision’s geographical scope of application. Negotiation of Article 234 was motivated by the recognition that the Arctic environment is exceptionally sensitive and poses exceptional hazards to navigation. Jurisdiction under Article 234 was therefore premised on the acknowledgement that internationally agreed-upon rules and standards for navigation, mostly designed for more temperate ocean areas, may provide insufficient protection and may need to be complemented by unilateral coastal State measures.\textsuperscript{98} As argued elsewhere, melting ice does not render the protective purpose of Article 234 obsolete, quite the contrary.\textsuperscript{99} The strain it causes makes Arctic ecosystems less resilient to additional stressors, including navigation and vessel-source pollution,\textsuperscript{100} and thus preventive measures all the more relevant.

4 Revisiting the Material Scope of Article 234

When Article 234 was negotiated in the 1970s, pollution by oil was by far the most widely known vessel-source threat posed to the Arctic environment. Elicited by the crossing of the \textit{SS Manhattan}, the predominant disaster scenario was a black tide on pristine ice. Yet, Arctic shipping comes with a much more diverse array of threats. As detailed in Vincent \textit{et al.} in this volume, many are invisible and by far not all result from oil pollution; stressors can be chemical, but also physical and biological. Noise pollution,\textsuperscript{101} ship strikes,\textsuperscript{102} habitat


\textsuperscript{98} See McRae (n 79), pp. 107–110.

\textsuperscript{99} Bartenstein \textit{et al.} (n 89), p. 348.

\textsuperscript{100} See Vincent \textit{et al.} in this volume.


disruption through icebreaking\textsuperscript{103} and introduction of invasive species\textsuperscript{104} were all presumably absent from the negotiators' minds. Article 234 provides coastal States with jurisdiction that, even considering its functional approach, seems rather narrow in its focus on “the prevention, reduction and control of marine pollution from vessels.” That raises the issue of whether and how Article 234 may help address the broad range of stressors that come with Arctic shipping.

As UNCLOS III president Tommy Koh said, the LOSC is intended to provide a “constitution for the oceans which will stand the test of time.”\textsuperscript{105} This ambitious goal may be best achieved through an evolutionary approach to interpretation and will inspire the following examination of the kinds of threats a coastal State may address under Article 234. Scrutiny of specific measures as to their compatibility with the obligation spelled out in Article 234 to “have due regard to navigation and the protection and preservation of the marine environment” will, however, be mostly beyond the scope of this chapter.

4.1 \textit{Jurisdiction Restricted to Measures Addressing Cold and Ice-Induced Threats?}

McRae and Goundrey discuss in detail whether the reference to “severe climatic conditions and the presence of ice” restricts the material scope of Article 234 to measures that address risks of pollution resulting specifically from these Arctic conditions. Tracing the drafting history of Article 234, they note a shift in focus.\textsuperscript{106} While early discussions, prompted by Canada, centred on the distinct conditions that make Arctic shipping especially hazardous and warrant particular measures,\textsuperscript{107} the region’s exceptional ecological vulnerability came into focus at the Conference on the Prevention of Pollution from Ships held in 1973 by the Inter-Governmental Maritime Consultative Organization (IMCO,

\begin{thebibliography}{99}
\bibitem{103} For trends in the so-called Last Ice Area, see Robert Newton \textit{et al.}, “Defining the “Ice Shed” of the Arctic Ocean’s Last Ice Area and Its Future Evolution,” \textit{(2021) 9 Earth's Future}, https://doi.org/10.1029/2021EF001988.
\bibitem{106} McRae and Goundrey (n 66), pp. 216–217.
\end{thebibliography}
renamed IMO in 1982). At UNCLOS III, this concern translated into the addition of “major harm to or irreversible disturbance of the ecological balance” to the 1975 draft provision. Reference to “ice-covered areas” was added in 1976 to make the provision’s “Arctic character” plain. According to McRae and Goundrey, a narrow interpretation of Article 234, providing authority limited to cold and ice-induced threats, does not seem to be supported by the provision’s literal reading or its drafting history. A broader interpretation, which would encompass measures warranted by the particular vulnerability of the Arctic ecosystems, would further be in keeping with the contemporary acknowledgment expressed in the Polar Code’s Preamble that the impact of ship operations on the environment needs to be minimized.

McRae and Goundrey caution, however, that this broad interpretation of Article 234 may render much of the provision’s wording related to climatic conditions and ice cover “unnecessary and essentially repetitive.” As emerges from the discussion above, however, the purpose of these references may not be to define the material scope of jurisdiction, but to outline the geographical scope of the jurisdiction under Article 234. This supports the view that coastal States may subject navigation to measures that address the particular vulnerability of the Arctic, whether or not the risk they address is created by the typically Arctic conditions of cold and ice. Accordingly, the main constraint on measures adopted under Article 234 stems from the provision’s focus on vessel-source pollution.

4.2 Measures to Respond to Pollution Threats
The word ‘pollution’ appears twice in Article 234: first, with respect to the goal of coastal State measures, that is, “the prevention, reduction and control of marine pollution from vessels”; second, with respect to the geographical scope of jurisdiction, that is, “where ... pollution of the marine environment could cause major harm to or irreversible disturbance of the ecological balance” (emphases added). According to the definition in LOSC Article 1(4), “pollution of the marine environment” is

111 McRae and Goundrey (n 66), p. 216.
112 Polar Code (n 8), Preamble, first recital.
113 McRae and Goundrey (n 66), p. 217.
the introduction by man, directly or indirectly, of substance or energy into
the marine environment, including estuaries, which results or is likely to
result in such deleterious effects as harm to living resources and marine
life, hazards to human health, hindrance to marine activities, including
fishing and other legitimate uses of the sea, impairment of quality for use
of sea water and reduction of amenities.

Oil and other chemical substances, but also sewage, food waste and garbage,
all addressed by the Polar Code,114 clearly fall under this definition. Other kinds
of chemical, biological and physical stressors, however, raise the issue of the
contours of the pollution a coastal State may address.

Black carbon emissions, for example, have an outsize impact in the Arctic,
blackening white surfaces and accelerating local melting.115 Yet, it may seem
questionable whether ship exhaust, emitted into the atmosphere, constitutes
pollution of the ‘marine environment’ in the sense of Article 1(4). The broader
language of “marine pollution from vessels” in Article 234 suggests, however,
that the meaning of pollution is informed both by the emitting medium, that
is, the ship and the receiving medium (water column, ice cover and super-
jacent atmosphere).116 As can be drawn from Articles 212 and 222, vessel-source
air pollution is in the remit of the LOSC and unilateral coastal State action to
tackle black carbon emissions can arguably be considered within the scope
of Article 234. This is particularly relevant in the context of slow multilateral
standard-setting under Article 212(3): after more than a decade of discussion,
the IMO has yet to agree on mandatory measures. That said, Canada, actively
engaged in the IMO process by coordinating the Correspondence Group of
the IMO Prevention, Preparedness and Response Subcommittee,117 does not
appear to harbour any ambition for unilateral action on the matter.118

114 Polar Code (n 8), Part 11-A.
116 The same broad understanding also underpins MARPOL (n 53), Article 2, according to which “discharge, in relation to harmful substances or effluents containing such substances, means any release howsoever caused from a ship and includes any escape, disposal, spilling, leaking, pumping, emitting or emptying.”
Alien species introduced in Arctic waters are a biological threat and as such not intuitively perceived as ‘pollution,’ although they may have a polluting effect. Travelling on ship hulls—as so-called biofouling or hull-fouling—or in ballast water, some of them may thrive well enough in their new environment to become invasive, disturbing or destroying the balance of ecosystems that have little or no defence to hold them in check. While few species have been introduced in the Arctic so far, a warming environment may not only attract more shipping, but could also become more hospitable—and thus more vulnerable—to alien species. The International Convention for the Control and Management of Ships’ Ballast Water and Sediments, in force since September 2017, sets forth general minimum standards, which are not designed for the particular needs of Arctic ecosystems. The Polar Code merely recommends that the specific, albeit non-binding guidelines applicable to the Antarctic Treaty area be taken into consideration. As for the issue of invasive species introduced through biofouling, it is only addressed by generally applicable non-binding guidelines, which have been under review for years. The scientific discussion of coating properties in cold temperatures and the risks and benefits of ice abrasion suggests the relevance of Arctic- or polar-specific guidance. Unilateral coastal State action under Article 234 seems defensible, although there may currently be no appetite for it.

Ship-generated noise alters the soundscape of the marine environment with the potential of causing significant harm, in particular to noise-sensitive species. Many Arctic mammals have adapted to life in an ice-covered and therefore comparatively quiet ocean by developing unique sound-dependent

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122 Polar Code (n 8), Part II-B, at p. 4.


124 Friends of the Earth International (FOEI), Vessel Biofouling and Bioinvasions in Arctic Waters, IMO Doc MEPC 73/INF.24 (17 August 2018).
navigation and communication capabilities. Noise may cause hearing loss, stress and behaviour disruption. According to a 2021 PAME report, the increase in underwater noise in the Arctic is significant and concerning.\textsuperscript{125} Interestingly, noise causes pollution within the meaning of the LOSC Article 1(4) definition by the “introduction ... of ... energy.” For the moment, IMO instruments do little to address the problem. Non-binding guidelines issued in 2014, considered insufficient, are currently under review.\textsuperscript{126} According to the Polar Code, voyage planning and decisions related to route selection and speed can be informed by noise-reducing considerations, but no specific obligation exists.\textsuperscript{127} The Polar Water Operational Manual could prove a useful tool to integrate such considerations in the decision-making process, provided its scope is expanded beyond matters of operational capabilities and limitations of ships.\textsuperscript{128} As underwater noise in the Arctic is correlated with growing traffic in increasingly ice-free waters, it is among the threats that are not specifically caused by Arctic conditions.\textsuperscript{129} Regarding engine and propeller noise in particular, ice cover that prevents shipping activities may even amount to a protective factor. However, if shipping is possible, harm caused by underwater noise is exacerbated by the vulnerability of noise-sensitive Arctic species. Ice-induced noise is notably caused by hull-ice interactions and icebreaking, which may occur even in light ice conditions. Unilateral coastal State measures, including speed limits to reduce acoustic pollution at its source and routeing measures to mitigate its impact, applied where appropriate during critical periods to vulnerable habitats, appears therefore to be covered by Article 234.

4.3 \textit{Measures to Respond to Other Types of Environmental Threats}

Shipping causes disruption in more ways than through pollution by the introduction of substances or energy as envisioned in Article 1(4). For instance, ship strikes, that is, collisions between marine mammals and vessels, are often

\begin{itemize}
\item \textsuperscript{126} Guidelines for the Reduction of Underwater Noise from Commercial Shipping to Address Adverse Impacts on Marine Life, IMO Doc MEPC.1/Circ.833 (7 April 2014); Secretariat, \textit{Outcome of MEPC 76 on the review of MEPC.1/Circ.833}, IMO Doc SDC 8/14 (1 October 2021).
\item \textsuperscript{127} Polar Code (n 8), Part I-A, ch 11, 11.3(7) and Part I-B, 12.1, according to which “in the event that marine mammals are encountered, any existing best practices should be considered to minimize unnecessary disturbance.”
\item \textsuperscript{128} Polar Code (n 8), Part I-A, ch 2 and Part I-B, 3 and Appendix 2.
\item \textsuperscript{129} See n 106–113 and accompanying text.
\end{itemize}
fatal. The risk is highest for mammals that display near-surface behaviour and occupy highly travelled habitats, such as bowhead whales in Lancaster Sound, a gateway to the Northwest Passage.\footnote{Hauser, Laidre and Stern (n 132), p. 7619.} For coastal State measures, such as speed limits and routeing measures, to fall into the scope of Article 234, the ship as such would need to be considered pollution. This was certainly not what negotiators had in mind when drafting Articles 234 and 1(4). Yet, from an ecological point of view, the vessel is an object foreign to the marine environment, harming wildlife that happens to be on its path. An evolutionary, extensive interpretation of Article 234 would be in keeping with the increased awareness of the impact shipping has on the ecology of Arctic waters. However, although a general purpose of Article 234 is to grant coastal States authority for harm reduction, it is uncertain whether the jurisdiction’s boundaries can be stretched to encompass the regulation of ship strikes. In waters under Canadian jurisdiction further south, ship routeing measures are currently based on IMO decisions\footnote{For instance, a seasonal area to be avoided was created by the IMO under SOLAS Chapter V in the Roseway Basin, in Canada’s EEZ off of Nova Scotia, to protect the North Atlantic right whale, IMO Doc MSC.83/28/Add.3 Annex 25 (2 November 2007).} and, in internal waters, on unrestricted jurisdiction.\footnote{In the Gulf of St-Lawrence, Transport Canada has issued seasonal regulation imposing speed limits and areas to be avoided since 2018. See latest Interim Order for the Protection of North Atlantic Right Whales (Eubalaena glacialis) in the Gulf of St. Lawrence, 2022, 20 April 2022, 2022-04-30 Canada Gazette Part I, Vol. 156, No. 18.} Given this context, it seems unlikely that Article 234 will be invoked—or accepted—as a basis for unilateral regulation of ship strikes.

Equally difficult is the case of icebreaking. Ice provides a habitat for many species, from microorganisms, like algae, all the way up the food chain to marine mammals. Warming temperatures not only melt the icy barrier to navigation, but also a unique ecological niche for ice-dependent species. Icebreaking contributes to the fracturing of ecosystems; it may also disrupt critical migration routes and create death traps for animals and the humans who hunt them.\footnote{See Breanna Bishop et al., “How Icebreaking Governance Interacts with Inuit Rights and Livelihoods in Nunavut: A Policy Review,” Marine Policy 137 (2022): 104957, https://doi.org/10.1016/j.marpol.2022.104957.} It might even locally speed up melting processes.\footnote{The effect is comparatively small; see NSIDC, Are Icebreakers Changing the Climate?, 17 April 2012, https://nsidc.org/learn/ask-scientist/are-icebreakers-changing-climate.} The only effective way to protect ice habitats against the effects of icebreaking is to prevent icebreaking. Prohibitions could be limited in space and time to balance navigation and protection needs under the due regard clause of Article 234. They could apply to areas identified as particularly valuable habitats or in key periods, including in...
spring when ice is critical as a breeding or feeding platform or for migration routes and, once broken, may not freeze up again.

Canada’s Tuvaijuittuq Marine Protected Area (MPA), located north of Ellesmere Island, provides an interesting case study with respect to icebreaking. The area was granted interim status with the objective to protect part of the Last Ice Area, which retains the thickest and oldest multiyear pack ice in the Arctic. Prohibited is any activity “that disturbs, damages, destroys or removes from the Marine Protected Area any living marine organism or any part of its habitat, or is likely to do so,” which is broad enough to include navigation and icebreaking. However, exceptions apply to national defence and marine scientific research activities, as well as to navigation carried out by a foreign national, ship or State. In clear contradiction to the very purpose of the MPA, icebreaking remains possible, including for the exercise of navigational rights by foreign-flagged vessels. This raises the question of whether Canada could choose to prohibit such icebreaking activities under Article 234.

Icebreaking cannot by any stretch of the imagination be considered ‘pollution’ and its prohibition would in fact entail prohibition of navigation. It could be argued that prohibition of icebreaking is in keeping with the spirit of Article 234, which was designed to provide Arctic coastal States with the authority to impose reasonable restrictions that help prevent “major harm or irreversible disturbance of the ecological balance.” Further support for such a teleological interpretation could be found in the general Article 192 obligation “to protect and preserve the marine environment.” However, the exceptions provided by the legal framework of the Tuvaijuittuq MPA suggest that the spirit of Article 234 may have seemed insufficient to support measures that effectively prohibit international navigation. No such jurisdictional restrictions would apply to those waters Canada considers internal waters. However, the result would be a patchwork regime of navigational rights that depend on the vessel’s location in the MPA. This is without considering the political risk the claim of full sovereignty entails, a risk that may not be worth taking in an area with no commercial navigation.

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135 Order Designating the Tuvaijuittuq Marine Protected Area, SOR/2019-282.
136 Id., Article 4(1).
137 Id., Article 3.
138 Id., Article 4(2)(a).
4.4 Measures to Respond to Indirect Environmental Threats

The link between safety measures and pollution prevention is explicitly acknowledged in the Polar Code. Article 234, for its part, acknowledges the “obstruction and exceptional hazards” ice creates. While this lends credit to the argument that coastal State measures may include safety measures, the extent to which this is possible remains uncertain. Although many safety measures may lower the risk of incidents that have the potential to generate pollution, not all of them are directly aimed at “the prevention, reduction and control of marine pollution.” A case in point is the measures focusing on lifesaving in case of an accident, including provisions on survival equipment, rescue considerations and firefighting systems. Mitigation of the environmental impact of an accident as a contingent positive side effect may prove insufficient for such measures to fall under Article 234.

By contrast, safety measures designed to reduce the risk of accidents or their environmental fallout can arguably be considered pollution prevention measures under Article 234. Traffic regulation schemes, for instance, are thought to be part of the Article 234 toolbox, as are manning and machinery requirements and hull design and construction standards. The latter were part of Canada’s regulatory regime established under the 1970 AWPPA, complementing more conventional measures of pollution prevention, such as restrictions related to the deposit of oil. The whole regime, including the safety measures, has been considered covered by the jurisdiction set forth in Article 234.

5 Revisiting Canada’s ‘Single Approach’ to Regulating Arctic Shipping

Canada subjects navigation in its Arctic waters to several laws and regulations, most prominently the ASSPRR adopted under the AWPPA, but also the Shipping Safety Control Zones Order and NORDREG. These regulations follow a ‘single approach’ in that they set forth a uniform legal regime, which does not distinguish between the various LOSC maritime zones, although these have been

140 Polar Code (n 8), Preamble, recital 5.
142 Franckx and Boone (n 67), para 14.
143 RSPPR (n 56), ss 26 and 6, schs V–VII.
144 Id., s 29.
145 Nordquist et al. (n 32), para 234.5(g) (p. 397).
146 CRC, c 356.
transposed into Canadian law.\textsuperscript{147} Even the zone/date system, which governs access to Shipping Safety Control Zones, differentiates not based on maritime zones, but on vessel capacity and probable ice conditions in a given area at a given time of year.\textsuperscript{148}

5.1 \textbf{The Single Approach and Article 234}

The single approach dates back to the 1970 AWPPA. The claim that Arctic waters within the Arctic Archipelago are historic waters and under Canada's full sovereignty, which was made explicit only after Canada established its very first shipping regime for the Arctic, had no consequence on that regime. This speaks to Canada's consistently functional approach to regulating navigation with the sole objective of making it safe and protective of the environment. Then Prime Minister Trudeau mapped out the path in 1970 stating that Canada had no intention to prevent navigation altogether and considering it “senseless” “to deny passage to all foreign vessels in the name of Canadian sovereignty.”\textsuperscript{149} Canada does not display any appetite either for promoting its Arctic waterways as an alternative to established global shipping routes,\textsuperscript{150} choosing instead the pragmatic path of adjusting to developing needs through the establishment of low-impact shipping corridors, described by Dawson and Song in this volume.

The single approach may cloud the jurisdictional basis of Canada's Arctic shipping regulations. From the drafting history of Article 234, it is but a small step to conclude that Canada's regulatory regime rests on the authority granted by that provision. Yet, Canada has never said so explicitly until two regulatory reforms in 2010 provided the opportunity to comment on the issue. Regarding the expansion of Canada's Arctic waters to 200 M, the Legislative Summary notes—rather cautiously—that Article 234 “appears to permit [the] proposed extension.”\textsuperscript{151} As to its newly mandatory vessel traffic services, Canada declared—more assertively—before the IMO that “Article 234 provides a complete legal justification in international law for NORDREG.”\textsuperscript{152}

The main legal advantage of a single uniform regime is that it provides regulatory coherence that makes application and enforcement relatively

\textsuperscript{147} Oceans Act, SC 1996, c 31, in particular ss 4–21.
\textsuperscript{148} See id.
\textsuperscript{149} House of Commons, Debates (24 October 1969), 39.
\textsuperscript{150} This is in stark contrast to the Russian approach, see Bartenstein et al. (n 89), p. 349.
\textsuperscript{151} Canada, Bill-C3: An Act to Amend the Arctic Waters Pollution Prevention Act (Legislative Summary), 13 February 2009, 8, https://lop.parl.ca/staticfiles/PublicWebsite/Home/ResearchPublications/LegislativeSummaries/PDF/40-2/c3-e.pdf.
\textsuperscript{152} Canada, Comments on Document MSC 88/n/2, IMO Doc MSC 88/11/3 (5 October 2010), in particular 5.1 in fine.
Politically, it also seems easier to contend with challenges related to the extent of coastal State jurisdiction—in particular the material scope of application of Article 234 and its due regard clause—than with challenges related to the claim of full sovereignty. Despite the functional nature of Article 234 and the boundaries it imposes on coastal States, even measures that espouse a more extensive interpretation of the jurisdiction appear to be acceptable. By contrast, measures based on a claim of full sovereignty, even if they are limited to environmental protection, entail the risk that they are challenged as a matter of principle.

The main inconvenience of a single regime based on Article 234 is, of course, that it has to remain within the bounds of the provision’s limited jurisdiction. Although Article 234 may provide the jurisdictional basis for Canada’s regulations regarding its EEZ and, to some extent, its territorial sea, it seems more accurate to describe the provision as the self-imposed de facto ceiling regarding regulations that apply to waters of the Archipelago considered internal waters. Given its claim of full sovereignty and unrestricted jurisdiction, Canada does not need to rely on Article 234, although it may, of course, decide in full sovereignty to regulate navigation in a way that does not exceed its stricter bounds, extending the functional approach to its internal waters.

This entails that Canada may have to contend with the limits of the jurisdiction provided under Article 234. Regulations not related to pollution in the broadest sense may fall outside its material scope and if they have the effect of preventing navigation, they may conflict with its due regard obligation. For instance, prohibition of icebreaking applicable to a sensitive habitat or a vital migration route as part of an area-to-be-avoided within a marine protected area may be difficult to impose based on Article 234.

5.2 Overcoming the Limitations of Article 234

One way to deal with the constraints of Article 234 is to push against its boundaries. A broad, evolutionary interpretation, in keeping with present-day knowledge of Arctic ecosystems and the stressors that weigh on them, may help achieve an adequate level of protection. Such an interpretation should take into account, beyond Article 234 itself and its immediate treaty context,

\[ \text{153 See also Whitbread v. Walley, [1990] 3 SCR 1273.} \]

\[ \text{154 While Canada’s 2010 decision to make NORDREG mandatory sparked controversy within} \]

\[ \text{the IMO (see IMO, Report of the MSC on its 88th Session, IMO Doc MSC 88/26 (15 December} \]

\[ \text{2010), para 11.28 ff.), NORDREG has since been effectively applied.} \]
“any relevant rules of international law applicable in the relations between the parties.”

The Preamble of the Polar Code in particular may inform the debate on the scope of Article 234. It acknowledges that “coastal communities in the Arctic could be, and that polar ecosystems are, vulnerable to human activities, such as ship operation” and that there is a “relationship between the additional safety measures and the protection of the environment.” The unambiguous reaffirmation of the vulnerability of Arctic ecosystems emphasizes what should be the core motivation of any regulation of Arctic shipping. The reference to ‘ship operation’ in general, for its part, may extend the discussion beyond the narrow issue of vessel-source pollution to the wide range of chemical, physical and biological stressors that come with shipping in the Arctic, as highlighted by Vincent et al. in this volume. This and the acknowledgement that safety of navigation has environmental benefits may help make the case for a broad understanding of the material scope of Article 234.

The reference to the vulnerability of coastal communities may reinforce new coastal State approaches to governing the regulation of shipping in waters under their jurisdiction. Canada recently adopted the United Nations Declaration on the Rights of Indigenous Peoples Act, committing to go forward by using what Beveridge calls a “decolonizing lens” in this volume. A systematic involvement of Inuit communities in the design and application of Canadian regulations on shipping in Canadian waters of Inuit Nunangat, the Inuit homeland, including with regard to the establishment of low-impact shipping corridors, may not only influence regulatory choices, but also shift our understanding of the “scientific evidence” referred to in Article 234 and required to justify these choices.

Broad, evolutionary interpretation of Article 234 has its limits, however. Regulations intended to apply within the Arctic Archipelago, but difficult to justify under Article 234, may therefore prompt Canada to explore the option of departing from the single approach and relying on the claim of full sovereignty. The ecological risk such regulations are intended to reduce has to be weighed against the political risk this departure entails. The regulation as such could be challenged, but the even greater political risk is that reliance

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155 VCLT (n 65), Article 31(3)(c).
156 Polar Code (n 8), Preamble, recital 4.
157 Id., recital 5.
159 Related to these corridors, see Dawson and Song, Doelle et al. and Lalonde and Bankes, all in this volume.
on full sovereignty is perceived as a departure from the functional approach. This approach—though it was not accepted *de jure* in all respects—has nevertheless enabled Canada to impose regulations that have *de facto* mostly been complied with. A perceived departure from the functional approach may invite enhanced scrutiny of Canadian regulations and even call into question the relative leeway Canada has long enjoyed. Treading the fine line could result in a renewed functional approach, according to which full sovereignty is invoked only if “functionally necessary”\(^{160}\) to achieve a carefully determined environmental goal. If the ecological risk is significant and well documented, the adoption of protective measures beyond the scope of Article 234 may again put potential challengers in a political and moral bind that leads to *de facto*, if not *de jure*, acceptance of the regulations.

### 6 Conclusion

This chapter started by tracing the genesis of Canada’s legal regime on Arctic shipping, set in motion by the 1969 *Manhattan* crossing. Canada’s regulatory choices—and in particular its functional approach centring on pollution prevention—remained essentially unaffected by the claim of full sovereignty over the waters of the Arctic Archipelago on historic grounds, made discreetly in 1973 and openly in 1985, and the disagreement on the merits of that claim, challenged notably by the United States. The inclusion of Article 234 in the LOSC has provided coastal States with exceptional jurisdiction over ice-covered waters and effectively endorsed Canada’s functional approach. In 2017, international standard-setting resulted in the entry into force of the Polar Code, which pursues an extended functional approach that aims for pollution prevention and safety of navigation. Canada’s new ASSPPR embrace the Polar Code, all while taking advantage in some minor respects of the continued possibility to rely on coastal State jurisdiction under Article 234.

The chapter then turned to the geographical scope of Article 234. Despite uncertainties expressed in the literature as to whether the provision applies to all waters landward of 200 M, Canada’s regulation applicable to all Arctic waters seems to be on solid ground. It appears in particular that the Northwest Passage, in the event it is determined to be a strait used for international navigation, can still be subjected to regulations based on Article 234. As for the references to ice cover in Article 234, they are best characterized as a geographical marker, rather

\(^{160}\) See McDorman (n 21), p. 75.
than a prerequisite for coastal State jurisdiction. Even the seasonal disappearance of ice during the Arctic summer—an ecological catastrophe waiting to happen—does not seem to entail a shrinking geographical scope of Article 234.

The material scope of Article 234 was examined next. While the provision was arguably fashioned to provide jurisdiction on vessel-source substance pollution, its objective, the awareness that contemporary vessel-caused threats go beyond discharge of substances and the acknowledgement that safety measures may have a protective effect for the environment all contribute to make a compelling case for a broader interpretation of the material scope of Article 234. However, some regulations, although effective from an environmental point of view, may still be difficult to justify under Article 234. Prohibition of icebreaking, which may have the practical effect of preventing navigation altogether, is a prominent example.

Finally, Canada’s single approach to regulating Arctic shipping, seemingly based on Article 234, was assessed. Canada has fared well in the past, notably because of the functional course inherent to the single approach, which allowed it to push boundaries and impose regulations all while signalling restraint. Still, Article 234 may prove too limited in scope to address some of the stressors that come with navigation at a time of tremendous environmental change in the Arctic. With respect to shipping within the Arctic Archipelago, reliance on full sovereignty may therefore be worth exploring. Steering a continued, although broadened, functional course may help avoid backlash that calls into question both new and established regulations.

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