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CANADA



**REDUCING IMPACTS FROM SHIPPING IN MARINE
PROTECTED AREAS: A TOOLKIT FOR CANADA**

NAVIGATING THE LAW: REDUCING SHIPPING IMPACTS IN MARINE PROTECTED AREAS

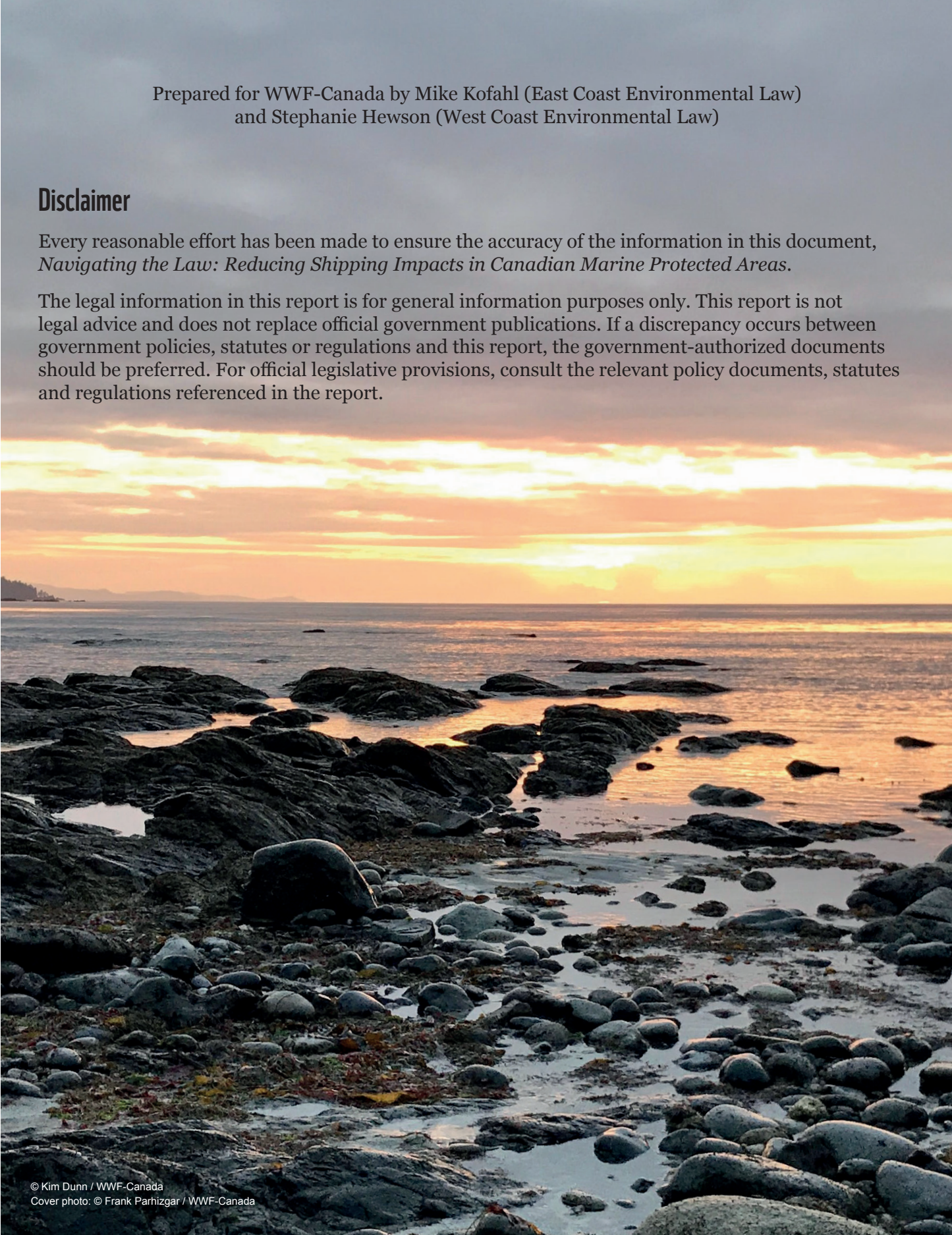
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Disclaimer

Every reasonable effort has been made to ensure the accuracy of the information in this document, *Navigating the Law: Reducing Shipping Impacts in Canadian Marine Protected Areas*.

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INTRODUCTION

PROJECT OVERVIEW

This report provides an overview of the framework of Canadian and international laws that regulate shipping in marine protected areas (MPAs) and seeks to describe the potential legislative tools available to address shipping impacts in those MPAs. Enforcement of shipping laws and regulations is outside the scope of this report.

This report considers the entirety of Canada's ocean shipping jurisdiction, from the coast to the 200 nautical mile (NM) limit of its Exclusive Economic Zone (EEZ), including its Arctic regions; internal areas, including provincial legislation, are outside of its scope.

This report focuses on commercial vessels and commercial passenger vessels, and often uses the term "shipping" to generally refer to these activities. Pleasure craft and fishing vessels are not intended to be captured, except where otherwise indicated or where provisions are for navigation generally.

The term "navigation" refers to "the act or science or the business of traversing the sea or other navigable waters in ships or vessels."¹ Navigation may include activities that are necessary to navigation, such as mooring and anchoring.² In this report we have also considered activities that are incidental to navigation as part of the ordinary operation of a ship, such as discharges of ballast water, greywater, sewage and other effluents.

This report focuses exclusively on the legal and regulatory measures that are available to address the impacts of shipping. It does not consider voluntary measures. This focus is intentional: although

voluntary measures are frequently used to address shipping impacts and have some benefits, they also present several downsides from the perspective of effective long-term conservation. They are not enforceable, are always at risk of being rescinded by a change of political will or new government and have been shown to result in low compliance.³ Addressing shipping impacts through regulation is also consistent with the measures used to address other activities within MPAs, such as commercial and recreational fishing and oil and gas activities.



¹ *Whitbread v Walley*, [1990] 3 SCR 1273 at pp 1283-1284.

² *West Kelowna (District) v Newcombe*, 2015 BCCA 5 at para 29.

³ See Charlotte K Whitney, et al. "Imprecise and Weakly Assessed: Evaluating Voluntary Measures for Management of Marine Protected Areas" (2016) 69 *Marine Policy* 92: "Very few papers (only 20 of 144) provided thorough assessments of outcomes or effectiveness of voluntary measures; of these, less than a quarter pointed to successful outcomes in connection with voluntary measures for MPAs or marine conservation more broadly, while half indicated mixed or uncertain results. The main factor to which failure of voluntary measures was attributed was the lack of leverage to discourage non-compliance." See also Megan F McKenna, et al., "Response of Commercial Ships to a Voluntary Speed Reduction Measure: Are Voluntary Strategies Adequate for Mitigating Ship-Strike Risk?" (2012) 40 *Coastal Management* 634; Gregory K. Silber, Jeffrey D. Adams and Christopher J. Fonnesebeck. "Compliance with Vessel Speed Restrictions to Protect North Atlantic Right Whales." (2014) 2 *PeerJ* e399.

PROJECT METHODOLOGY

This report is part of the larger decision support tool Reducing Impacts from Shipping in MPAs: A Toolkit for Canada, designed for government, industry and environmental practitioners engaged in shipping or MPA management to help them make informed decisions about how to reduce, mitigate or eliminate the impacts of shipping on our most vulnerable and valuable ocean ecosystems.

During the research and drafting process, we engaged with the same groups to whom this report is aimed. In March 2019, we engaged initially with environmental organizations to better understand the various concerns and issues related to management of shipping impacts in MPAs. In February 2020, we engaged in a larger workshop discussion with government departments and agencies, various stakeholders engaged in the shipping industry, scientists and MPA practitioners to discuss our initial findings and review a draft version of our report. Throughout the process, these groups also provided us with valuable and useful feedback, commentary and suggestions. We considered all of this generous feedback and have attempted to integrate or respond to that feedback as much as possible.

As a result of our research and engagement with various stakeholders, we identified a key issue with respect to the regulation or management of shipping in MPAs: shipping is generally not addressed or managed in MPAs, primarily because the various mechanisms that create those MPAs either ignore or exempt shipping from the prohibitions or restrictions that are otherwise meant to provide protection to those areas.

This report identifies and highlights the tools, found in various statutes, regulations and even policies, that can be used by stakeholders now and in the future to address this issue. This will require government departments to utilize various legislative tools that are available but currently unused and to coordinate efforts to maximize capacity; it will require all those directly involved with shipping to commit to improving their industry and identify the most practical solutions, both mandatory and voluntary; it will require MPA managers and practitioners to identify potential tools and mechanisms early in MPA

designation and during MPA management; and it will require all stakeholders to continuously engage with one another and to collaborate to find the most effective long-term solutions.

By identifying the relevant tools and legal mechanisms, this analysis takes the first step toward reducing, mitigating or eliminating shipping impacts in MPAs. The next is to seriously commit to using all the tools in our toolkit to achieve our collective goal.

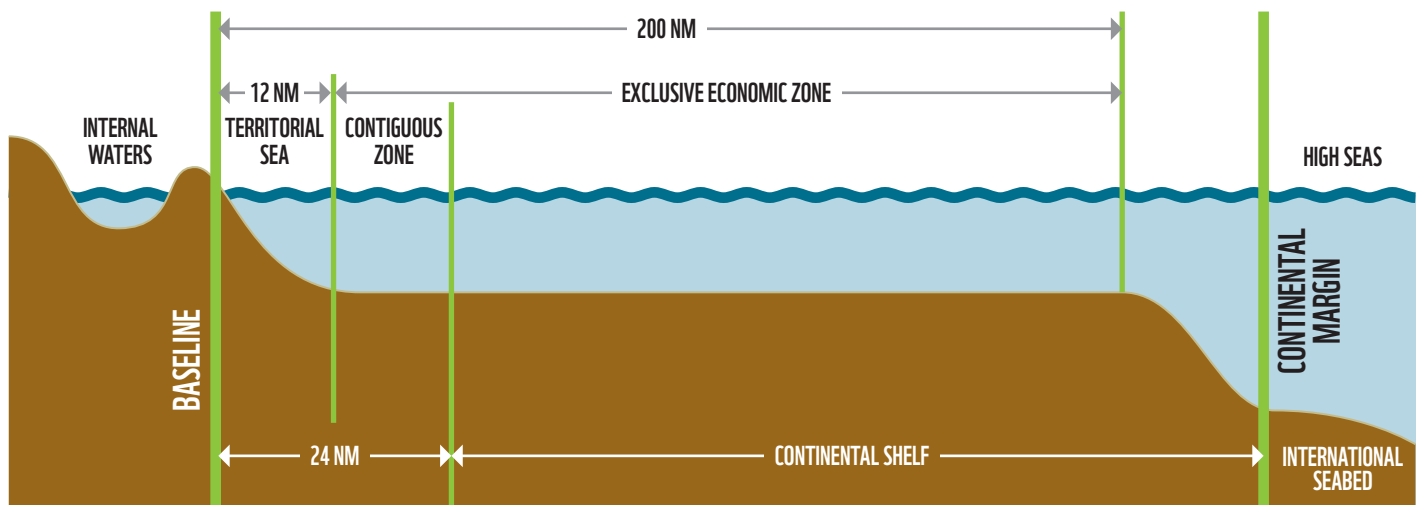


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THE MARITIME SHIPPING FRAMEWORK

MARITIME ZONES

The *United Nations Convention on the Law of the Sea* (UNCLOS), to which Canada is a signatory, divides the ocean into seven maritime zones. Coastal states' rights and responsibilities vary within these zones, with the underlying principle being that a coastal state exercises less control over the ocean the farther one moves away from land. The seven maritime zones are as follows:



- **Internal waters** are the waters that lie to the landward side of the baseline, which is the low waterline along the coast.⁴ Harbours, coves and historic bays are all considered internal waters.⁵ Canada has full sovereignty over these waters, the air space above and the seabed and subsoil below the water column.
- The **territorial sea** is the water that extends from the baseline out to a maximum of 12NM offshore. Canada has full sovereignty over these waters, the air space above and the bed and subsoil below the water column, subject to the right of innocent passage by foreign states.⁶
- The **contiguous zone** is the marine area between 12NM and 24NM offshore. This area is part of the Exclusive Economic Zone (see below), but Canada has the additional power to enforce federal laws related to immigration, customs, fiscal and sanitary law. This power relates particularly to the outward and inward movement of ships.⁷

⁴ Baselines refer to the low tide-water mark along the coast of a state. They are also drawn around bays, islands and water between headlands, traditionally referred to as *water inter fauces terrae*, or "within the jaws of the land."

⁵ Donald Rothwell and Tim Stephens "The International Law of the Sea" (Hart Publishing, 2010) ["Rothwell"] at 23, 48, 54.

⁶ *United Nations Convention on the Law of the Sea*, 10 December 1982, 1833 UNTS 396 article 234 ["UNCLOS"] at articles 2, 17. See also Rothwell at 58.

⁷ Rothwell at 78, 80.

- The **Exclusive Economic Zone (EEZ)** is the marine area beyond 12NM up to a maximum of 200NM offshore. Canada has sovereign rights over renewable and non-renewable resources within the EEZ, including the water column, seabed and subsoil. This allows Canada to explore, exploit, conserve and manage these resources.
- The **continental shelf** is the seabed and subsoil up to a maximum of 250NM from the baseline to the outer edge of the continental margin where it extends beyond 200NM. Canada has applied to the International Seabed Authority for this extended continental shelf.
- The **high seas** are the areas of the sea that are beyond 200NM and the limits of national jurisdiction. The High Seas are open to all states and are governed by international convention.
- The **international seabed** is the seabed, ocean floor and subsoil beyond the limits of national jurisdiction. This area is governed by the International Seabed Authority.

Canada's maritime zones and its rights and responsibilities within each zone are incorporated into Canadian law through the *Oceans Act*.⁸ The geographic locations of most of Canada's maritime zones have been settled and are laid out in the *Territorial Sea Geographical Coordinates (Area 7) Order* under the *Oceans Act*.⁹ There are still contested claims in parts of the Arctic and to an extended continental shelf.

Coastal states have a general duty to protect the marine environment, as set out in articles 192 and 193 of UNCLOS.¹⁰ Like all coastal states, Canada

has special jurisdiction with respect to prevention, reduction and control of vessel-source pollution within the EEZ. Under UNCLOS, Canada also has special jurisdiction in the Arctic.¹¹

Foreign States have the freedom of navigation within the high seas and within a coastal state's EEZ, and it is understood as the right of all nations to navigate freely on the open ocean, thereby allowing for free trade and commerce across the oceans. However, it is not an absolute right and must be balanced against other rights and duties within the ocean.¹²



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⁸ See *Oceans Act*, SC 1996, c. 31 [*Oceans Act*] ss 7, 10, 12, 13.

⁹ *Territorial Sea Geographical Coordinates (Area 7) Order*, SOR/85-872.

¹⁰ See UNCLOS, article 192: "States have the obligation to protect and preserve the marine environment. Art." and article 193: "States have the sovereign right to exploit their natural resources pursuant to their environmental policies and in accordance with their duty to protect and preserve the marine environment." (emphasis added).

¹¹ *United Nations Convention on the Law of the Sea*, 10 December 1982, 1833 UNTS 396 article 234 ["UNCLOS"]. UNCLOS, article 234.

¹² Rothwell at 205.

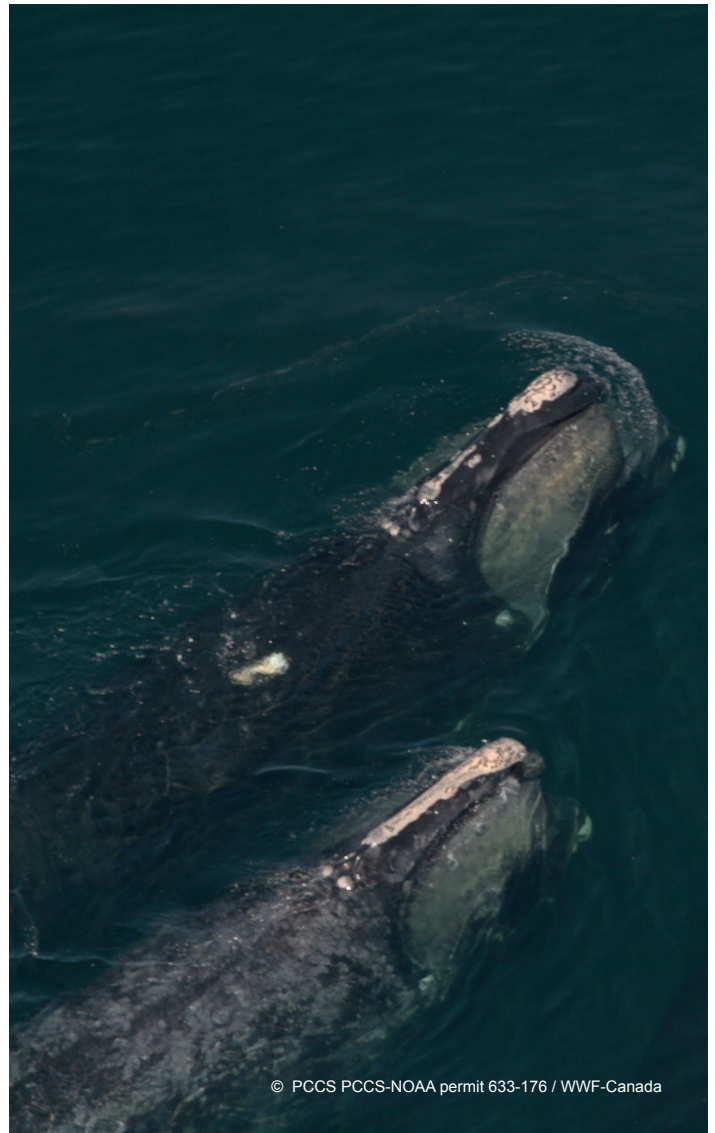
JURISDICTION OVER SHIPPING WITHIN CANADA

The federal government has authority over “navigation and shipping” under Section 91(10) of the *Constitution Act, 1867*.¹³ Transport Canada (TC) is the main federal department that regulates and administers commercial shipping. Fisheries and Oceans Canada (DFO), the Canadian Coast Guard (CCG), Environment and Climate Change Canada (ECCC) and Natural Resources Canada (NRCAN) also have roles.

Given the expansive nature of the federal government’s jurisdiction, this report focuses on federal legal tools. While the jurisdictions of other orders of government are not included in this analysis, they are important to note.

Indigenous nations have inherent jurisdiction and sovereignty over their lands, waters and communities, which they have governed according to their own laws for millennia. Crown recognition of pre-existing Indigenous rights and title, referred to as Aboriginal rights and treaty rights in the Constitution, are upheld under section 35 of the *Constitution Act, 1982*, which recognizes and affirms “the existing aboriginal and treaty rights of the aboriginal peoples of Canada.”¹⁴ Aboriginal title, which has been identified by Canadian jurisprudence as part of Aboriginal rights, includes the right of Indigenous nations to govern, proactively manage and benefit from their territories.¹⁵ While the Supreme Court of Canada recognized Tsilhqot’in Aboriginal title to land areas, the decision does not preclude the existence of Aboriginal title to marine spaces or the activities that impact marine areas, such as marine shipping. Many Indigenous nations claim title over marine territories, asserting a right to exclusive decision-making over their marine territories or choosing to exercise their title through collaborative management over marine territories. Many Indigenous nations also assert or have proven Aboriginal or treaty harvesting rights within their marine territories, which may be affected by marine shipping.¹⁶

Provincial governments also have the ability to regulate some aspects of shipping, such as intra-provincial shipping, and employment conditions through their powers over “local undertakings” and “property and civil rights.”¹⁷ Because these powers are incidental to shipping, rather than governing vessels themselves, they are not included in this report.



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¹³ *Constitution Act, 1867*, (UK), 30 & 31 Vict, c 3, reprinted in RSC 1985, App II, No 5 [*Constitution Act, 1867*], s 91(10).

¹⁴ *Constitution Act, 1982*, being Schedule B to the *Canada Act 1982* (UK), 1982, c 11 [*Constitution Act, 1982*], at s 35(1). See also *Tsilhqot’in Nation v British Columbia*, 2014 SCC 44 [*Tsilhqot’in Nation*] (the Supreme Court of Canada declaring Aboriginal title for the first time in an area in British Columbia).

¹⁵ *Tsilhqot’in Nation*, *ibid*, at paras 115-116.

¹⁶ See, for example, *R v Marshall*, [1999] 3 SCR 456, 1999; *R v Gladstone*, [1996] 2 SCR 723 [*Gladstone*]; *Ahousht Indian Band and Nation v Canada (Attorney General)*, 2013 BCCA 300, 2013; *Haida Nation v British Columbia (Minister of Forests)*, 2004 SCC 73 [*Haida Nation*]; *Saanichton Marina Ltd. v Claxton*, 36 BCLR (2d) 7 (BCCA) (recognizing Douglas treaty fishing rights in marine areas).

¹⁷ *Constitution Act, 1867*, s 92(10),(13).

THE CANADIAN LEGAL FRAMEWORK

MARINE PROTECTION LAWS

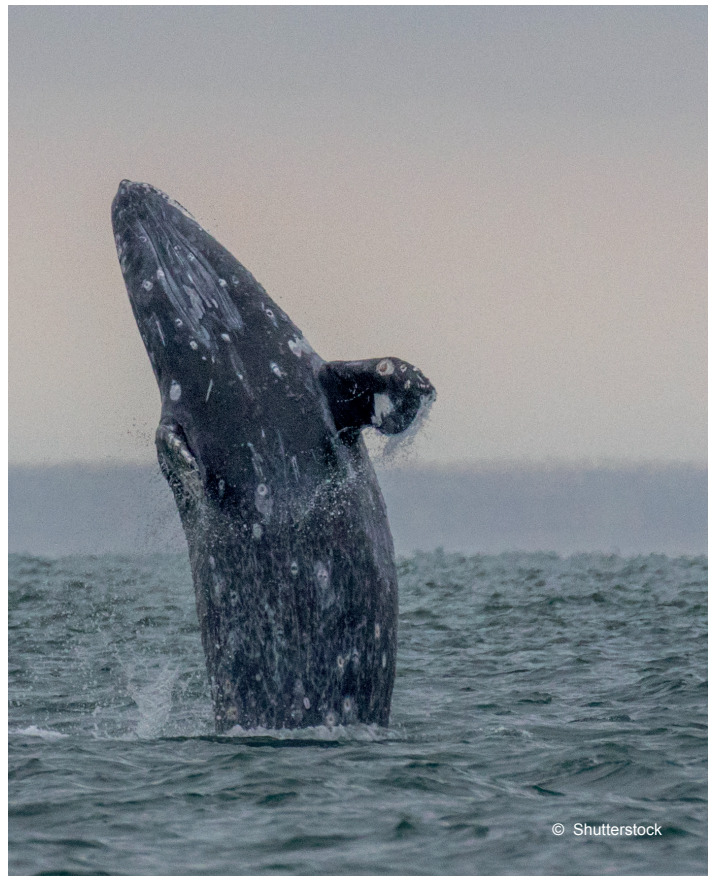
This report focuses on Canada's three main laws used to establish marine protected areas (MPAs):

- *Oceans Act* – Marine Protected Areas (*Oceans Act* MPAs);
- *Canada Wildlife Act* – national wildlife areas (NWAs) and marine NWAs (mNWAs);
- *Canada National Marine Conservation Areas Act* (*CNMCA Act*) – national marine conservation areas (NMCAs).

In this report, these protected areas will be referred to generally as MPAs unless otherwise indicated. Other kinds of protected areas can exist in the marine space, including, for example, Other Effective Conservation Areas. Additionally, marine species and migratory birds can receive protection under provincial and federal statutes, including the *Canada National Parks Act*, the *Migratory Birds Convention Act* and the *Species at Risk Act*. While these have important implications for ocean protection, they are outside the scope of this report.¹⁸

Overall, the laws that regulate shipping within MPAs are varied and inconsistent, partially because they are driven by different objectives and processes. In some *Oceans Act* MPAs and the recent *Canada Wildlife Act* Scott Islands mNWA, Canada prohibits shipping in certain maritime zones. In other MPAs, Canada restricts speed, anchorage and discharges. However, in many MPAs, particularly those in the Canadian EEZ, Canada does not regulate shipping or its impacts at all.¹⁹ These inconsistencies are likely due

to several factors, including the location of the MPA within the internal waters, territorial sea or EEZ; the designation process for the MPA; the specific conservation objectives for the area; and the extent to which shipping impacts are recognized as an issue within the area.



¹⁸ For further detail, see Canada's Federal Marine Protected Areas Strategy (2005), which lays out a spectrum of federal legislative and policy tools to establish and manage MPAs. Government of Canada, *Canada's Federal Marine Protected Areas Strategy*, (Ottawa: Fisheries and Oceans Canada, 2005).

¹⁹ Scott Islands marine NWA is the only MPA that regulates shipping in the EEZ. The provision on invasive species applies to foreign vessels in the EEZ.

Oceans Act – Marine Protected Areas

Responsible minister: DFO

Shipping and its impacts are regulated in a number of *Oceans Act* MPAs. The primary objective of MPAs is to conserve and protect species and their habitat, fisheries, areas of high biodiversity and other marine resources.²⁰

Canada has established 14 MPAs under the *Oceans Act*. In addition to these existing MPAs, other areas have been identified as “areas of interest” (AOI) for future protection, including:

- Eastern Shore Islands AOI, on the Atlantic Coast near Nova Scotia;
- Fundian Channel-Browns Bank AOI, on the Atlantic Coast near Nova Scotia;
- Offshore Pacific AOI, which is entirely within the EEZ on the Pacific Coast;
- Race Rocks AOI, on the Pacific Coast in the Strait of Juan de Fuca;
- Shediac Valley AOI, on the Atlantic Coast in the Gulf of St. Lawrence;
- Southampton Islands AOI, in the Arctic near Nunavut;
- St. Lawrence Estuary AOI, on the Atlantic Coast.

Regulating shipping within MPAs

Each MPA has its own regulations, which vary slightly but have common provisions. Each contains a blanket prohibition on any activity that “disturbs, damages, destroys or removes” any living marine organism or its habitat from the MPA.²¹ MPA regulations also often include a list of exceptions for activities that are allowed within the MPA despite the general prohibitions. These exceptions are for activities that range from scientific research to fishing and oil and gas activities.²² Many MPAs have exceptions for shipping. Table 1 lists shipping-related exceptions and restrictions that are found in MPA regulations.

Some older MPA regulations specifically prohibit depositing, discharging or dumping substances that are likely to harm marine life and habitat.²³ DFO has indicated that this prohibition is implicit in newer MPAs as part of the blanket prohibition on disturbing, damaging or destroying marine life.²⁴

DFO has highlighted a shift in the process of MPA establishment, such that newer MPA regulations are more detailed in terms of the activities that are allowed through exceptions to the blanket prohibition. Therefore, within older MPAs, shipping may be allowed even if not explicitly exempted by the regulation, and the intent to allow shipping may be reflected in the Regulatory Impact Analysis Statement. This discrepancy may be addressed as MPA regulations are updated and harmonized.²⁵

²⁰ *Oceans Act*, supra note 8, s 35(1).

²¹ A typical prohibition provision reads similar to the one found in the Anguniaqvia niqiqyuam MPA: “It is prohibited in the Marine Protected Areas to carry out any activity that disturbs, damages, destroys or removes from the Marine Protected Areas any living marine organism or any part of its habitat or is likely to do so.” *Anguniaqvia niqiqyuam Marine Protection Area Regulations*, SOR/2016-280, s. 3.

²² See, for example, *Tarium Niryutait Marine Protected Area Regulations*, SOR/2010-190.

²³ *Basin Head Marine Protected Area Regulations*, SOR/2005-293 at s. 3(1)(b); *Eastport Marine Protected Area Regulations* SOR/2005-294 at s. 4(1)(b); *Gilbert Bay Marine Protected Area Regulations* SOR/2005-295 at s. 3(1)(b); *Musquash Estuary Marine Protected Area Regulations* SOR/2006-354 at s. 3(1); *Tarium Niryutait Marine Protected Area Regulations* SOR/2010-190 at s. 6(b); *Bowie Seamount Marine Protected Area Regulations* SOR/2008-124, s. 3(c); *Gully Marine Protected Area Regulations* SOR/2004-112, s. 4(c).

²⁴ Communication from Fisheries and Oceans Canada, 2020.

²⁵ *Ibid.*

Table 1. Oceans Act Marine Protected Areas

Name of MPA	Maritime zone	Explicit prohibition on depositing, discharging or dumping	Exceptions related to shipping and navigation
Banc-des-Américains/ American Bank	Internal waters	Yes	<ul style="list-style-type: none"> Section 6 allows navigation, subject to certain listed conditions, including a zone where anchoring is prohibited and limits for discharges of sewage for vessels larger than 400 gross tonnage.
Basin Head	Internal waters	Yes	<ul style="list-style-type: none"> Section 4 allows vessel operation in certain areas in order to allow for vessel launching from land.
Musquash Estuary	Internal waters	Yes	<ul style="list-style-type: none"> Section 4 sets speed restrictions for vessels.
Anguniaqvia niqiqyuam	Territorial sea	No	<ul style="list-style-type: none"> Section 5 requires navigation to be conducted in accordance with the <i>Canada Shipping Act, 2001</i> (CSA) and the <i>Arctic Waters Pollution Prevention Act</i>.
Eastport	Territorial sea	Yes	<ul style="list-style-type: none"> No exception for navigation.
Gilbert Bay	Territorial sea	Yes	<ul style="list-style-type: none"> No exception for navigation.
Hecate Strait and Queen Charlotte Sound Glass Sponge Reefs	Territorial sea	No	<ul style="list-style-type: none"> Section 7 allows navigation of vessels in adaptive management and vertical management zones that is accordance with the CSA, and without any anchor entering in a core protection zone.
Tarium Niryutait	Territorial sea	Yes	<ul style="list-style-type: none"> No exception for navigation. However, section 7 exempts dredging, oil and gas exploration and drilling, and navigation by ships for public safety, emergency and national security purposes.
Laurentian Channel	Territorial sea and EEZ	No	<ul style="list-style-type: none"> Section 5 allows for navigation but prohibits anchoring in certain zones.
St. Ann's Bank	Territorial sea and EEZ	No	<ul style="list-style-type: none"> Section 6 allows navigation to be carried out.
Endeavour Hydrothermal Vents	EEZ	No	<ul style="list-style-type: none"> This MPA only protects subsoil, seabed and superjacent, or overlying, waters. Section 5 allows navigation for purposes of public safety, law enforcement or national security, or if the ship is owned or operated by Canadian military or foreign military working with Canadian military.
SGaan Kinghlas/ Bowie Seamount	EEZ	Yes	<ul style="list-style-type: none"> Section 4 allows vessels to travel in accordance with the CSA and its regulations, and foreign vessel travel in accordance with the <i>Coasting Trade Act</i> and its regulations.
The Gully	EEZ	Yes	<ul style="list-style-type: none"> Section 11 allows activities of a ship that is exercising international navigational rights and that is not contravening the CSA or any requirements of the International Marine Organization (IMO).
Tuvaijuittuq (Interim)	Internal waters, territorial sea and EEZ	Yes	<ul style="list-style-type: none"> Section 4 allows marine navigation by a foreign national, ship or state, or an entity incorporated by laws other than of Canada.

As the table shows, some *Oceans Act* MPAs do restrict navigation and shipping:

- Eastport MPA and Gilbert Bay MPA do not exempt navigation, unlike all other MPAs regulations. This suggests that navigation that disturbs marine organisms, as all shipping does, is prohibited in these areas. However, this may also simply reflect a lack of consideration of shipping impacts in these earlier MPAs (both established in 2005).
- Basin Head MPA and Musquash Estuary MPA prohibit shipping within Zone 1, the most protected zone, and limit shipping in all other zones of the MPA.
- Tarium Nirytait MPA contains no exception for navigation and shipping; however, it allows dredging and activities that support oil and gas exploration and drilling, which necessarily includes shipping.
- Musquash Estuary MPA has speed restrictions in Zones 2 and 3 of the MPA.
- Basin Head MPA allows vessel traffic in Zone 2 only for the purposes of launching or landing the boat.
- Banc-des-Américains MPA, Hecate Strait and Queen Charlotte Sound Glass Sponge Reefs MPA and Laurentian Channel MPA all prohibit anchorage within certain zones of the MPA.
- Banc-des-Américains MPA prohibits sewage and greywater discharge from large ships within the MPA.

All of the MPAs in which Canada has restricted navigation or shipping are located in the internal waters or territorial sea of Canada. In the EEZ, however, navigation is generally unrestricted. A noteworthy exception is the Gully MPA, which restricts Canadian shipping within most or all zones of the MPA but allows navigation for international vessels.²⁶

Canada National Marine Conservation Areas Act – National Marine Conservation Areas

Responsible minister: Minister responsible for Parks Canada (currently ECCC)

National Marine Conservation Areas (NMCAs) are established and managed by Parks Canada, an agency responsible to the Minister of ECCC, for the purpose of protecting and conserving marine representative areas for education and enjoyment.²⁷ They are designated by order of the Governor in Council.

Under the Act, the minister responsible for Parks Canada oversees the administration, management and control of all matters within the NMCA that are not already the responsibility of other ministers. In practice this means that the Minister of Transport retains responsibility over shipping within NMCAs. However, the minister responsible for Parks Canada may enter into agreements with other ministries, agencies and orders of government to achieve the purposes of the Act.²⁸ In addition, any regulations made that restrict marine navigation within an NMCA must be made on the recommendation of the Minister of Transport.²⁹

An NMCA is established by listing it under Schedule 1 or 2 of the *CNMCA Act*.³⁰ Currently Gwaii Haanas is the only listed NMCA Reserve.³¹ Other marine NMCAs have been proposed and are in process, including Talluruptiup Imanga in the Arctic, the Southern Strait of Georgia on the Pacific Coast and the Eeyou Marine Region in Eastern James Bay. An NMCA can be established in the territorial sea or the EEZ.

Three other NMCAs exist but are not listed under the Act. Two of these, the Fathom Five National Marine Park and the Lake Superior NMCA, are freshwater parks located in Ontario and are currently undergoing processes to transfer ownership of the land from Ontario to Canada. This is required for listing in the

²⁶ *Gully Marine Protected Area Regulations*, SOR/2004-112 at s 11(c).

²⁷ *Canada National Marine Conservation Areas Act*, SC 2002 c 18, s 4(1), ss 5, 7 [“CNMCA Act”].

²⁸ *Ibid.*, s 8(4).

²⁹ *Ibid.*, s 16(3).

³⁰ Schedule 1 lists NMCAs and Schedule 2 lists NMCA Reserves, which are areas subject to an Aboriginal title claim that is currently under negotiation with the federal government (see *CNMCA Act* s 4).

³¹ Two other marine protected areas are often described as NMCAs; however, neither is protected under the *CNMCA Act*. Saguenay-St. Lawrence Marine Park is established by special mirror legislation for cooperative management between the federal and Quebec governments. Fathom Five National Marine Park is a freshwater park in Georgian Bay that is managed under a 1987 federal-provincial establishment. For more information, see the *Saguenay-St. Lawrence Marine Park Act* (cite), SC 1997, c. 37 and House of Commons, ENVI Committee Report, “Appendix C.: Status and Growth of the National Parks System and the National Marine Conservation Areas System,” (2007), available online: ourcommons.ca/DocumentViewer/en/42-1/ENVI/report-5/page-162

schedule.³² The Saguenay-St. Lawrence Marine Park, which predates the *CNMCA Act*, is at the intersection of the St. Lawrence and Saguenay rivers in Quebec. It is jointly administered by Parks Canada and Parcs Québec.³³ The Saguenay-St. Lawrence Marine Park predates the *CNMCA Act* but is considered by Parks Canada to be part of its national system of NMCAs.³⁴

Once an NMCA is scheduled under the Act, the minister has five years to prepare a management plan for the area that includes a zoning plan setting out management zones and the activities permitted in each zone. Each management zone is meant to provide a different level of protection. Some zones may permit activities like sustainable use of the area, while others prohibit activities to provide full protection to the ecosystem.³⁵ A management plan must be updated every 10 years.

General prohibitions on activities within every NMCA include:

- No disposition or use of public lands, including the seabed, except as permitted by the Act or its regulations.³⁶
- A prohibition on disposal of any substances within the waters of an NMCA, unless authorized by a superintendent pursuant to the *CNMCA Act* or section 126(1) of the *Canadian Environmental Protection Act* (CEPA).³⁷
- Where CEPA applies, a permit may not be issued

without “concurrence of the Minister” responsible for CEPA.³⁸ In practice, the same minister (ECCC) is responsible under both statutes; however, the minister must still consider each statute before issuing any permit.

- A prohibition on ocean dumping, mining, oil and gas and extractive activities within an NMCA.³⁹
- The minister responsible for Parks Canada will be involved if there is a marine spill within an NMCA and may issue orders to the responsible party to prevent or mitigate environmental damage.⁴⁰ Failure to comply can lead to liability for expenses incurred by the minister in order to prevent or mitigate the damage caused by the spill.⁴¹

Regulating shipping within NMCAs

As noted above, TC retains its responsibility over navigation and shipping within NMCAs. Parks Canada must refer any management measures related to navigation and marine safety within an NMCA to TC, DFO and the Canadian Coast Guard (CCG), and these groups must work together to develop and implement those measures necessary to achieve the purpose and objectives of the NMCA.⁴²

Any regulations created under the *CNMCA Act* that relate to marine navigation must be jointly recommended by the ministers of Transport and of Environment and Climate Change.⁴³ These regulations must be consistent with the Minister of Transport’s powers under the CSA and the *Arctic Waters Pollution Prevention Act* (AWPPA), and consistent with international law.⁴⁴ To date, no regulations have been created under the *CNMCA*

³² *CNMCA Act*, at ss 5(2)(b) and (c).

³³ *Saguenay-St. Lawrence Marine Park Act*, SC 19871997, c 37; for the Quebec legislation, see *An Act Respecting the Saguenay-St. Lawrence Marine Park*, SQ 1992, c 16.

³⁴ *Saguenay-St. Lawrence Marine Park* is co-managed by the governments of Quebec and Canada and exercised by the Harmonization Committee. Also, participatory management is ensured by the Coordinating Committee composed of representatives for the nearby regions in various areas of activity. The Coordinating Committee is mandated to monitor a Management Plan and recommend strategies to the ministers responsible for the Saguenay-St. Lawrence Marine Park. For more information, see Parks Canada’s “Saguenay-St. Lawrence Marine Park Management Plan” (2010), available online: pc.gc.ca/en/amnc-nmca/qc/saguenay/info/plan. The *Marine Activities in the Saguenay-St. Lawrence Marine Park Regulations*, SOR/2002-76 set out the details of the activities allowed in the marine park, including: prohibiting behaviour that may kill or injure or disturb a marine animal (s 14), ability for the minister to create temporary exclusion zones (s 14.1), setting out distance requirements for vessels from cetaceans (s 15) and speed restrictions (s 19).

³⁵ *CNMCA Act*, s 9; Parks Canada has indicated that it is developing a national zoning framework that could include no-go zones. For more information, see: letstalknmcas.ca/lets-talk-nmcas

³⁶ *CNMCA Act*, s 12.

³⁷ *Ibid.*, s 14(1).

³⁸ *Ibid.*, s 14(2).

³⁹ *Ibid.*, s 13.

⁴⁰ *Ibid.*, s 29.

⁴¹ *Ibid.*, s 29(3).

⁴² *Ibid.*, s 9(4.1). Similarly, management of fishing and aquaculture must be referred to DFO.

⁴³ *Ibid.*, s 16(3).

⁴⁴ *Ibid.*, ss 16(1), (3).

Act, although Parks Canada has recently proposed developing several new regulatory measures.⁴⁵ These include a national zoning framework that could include restricted access, or no-go, zones.⁴⁶

In case of a conflict, regulations under the *CNMCA Act* would prevail over regulations made under other shipping-related statutes, including the *Coastal Fisheries Protection Act*, the *Canada Shipping Act, 2001*, the *Arctic Waters Pollution Prevention Act* and the *Navigable Waters Act*, to the extent of the conflict.⁴⁷ However, the regulations cannot restrict navigation whose objective is protecting national sovereignty or security or furthering the purposes of the *CNMCA Act*.⁴⁸ This is consistent with *Oceans Act*

MPAs, which generally allow navigation and other activities within MPAs for the purposes of public safety and national security.

There are currently no provisions in the Act that address shipping or shipping impacts within NMCAs, with the exception of the disposal of substances in NMCA waters.⁴⁹ As worded in the Act, this would seem to include disposal from vessels, although given the limits to the responsible minister’s authority described above, likely only to the extent that it would not interfere with marine navigation. To date, no regulations have been passed under the *CNMCA Act*, although Parks Canada has issued a policy intentions paper for discussion.

TABLE 2. National Marine Conservation Areas

NMCA	Location	Prohibitions relating to navigation in statute	Measures relating to navigation in management plan
Gwaii Haanas NMCA Reserve	Territorial sea and internal waters	No	Objective 4.3: Work with relevant agencies to manage and monitor vessel traffic to minimize impacts to Gwaii Haanas. The three objectives are: <ul style="list-style-type: none"> • Strengthen communication about vessel movements; • Encourage large vessels to transit sufficiently far offshore to ensure adequate response time and prevent accidents; • Marine infrastructure to enable safe navigation.

45 Government of Canada, Parks Canada, “Protecting Canada’s Marine Heritage: Proposed Policy and Regulations for Canada’s National Marine Conservation Areas: Discussion Paper” (May 2019).

46 Ibid., s 7-9.

47 Ibid., s 16(5).

48 Ibid., s 17.

49 Ibid., s 14(1).

Canada Wildlife Act - National Wildlife Areas

Responsible minister: ECCC

Canada Wildlife Service (CWS), a directorate within ECCC, is responsible for designating National Wildlife Areas (NWAs) under the *Canada Wildlife Act*.⁵⁰

The *Canada Wildlife Act* enables the establishment of NWAs and protected marine areas (marine NWAs, or mNWAs) for the purposes of research, conservation or interpretation. NWAs are designated to preserve habitats for migratory birds and other species, with particular attention paid to preserving habitats of species at risk listed in the *Species at Risk Act* (SARA) registry. mNWAs may be established within Canada's internal waters, territorial sea and EEZ, including a general power to carry out measures to protect wildlife in these areas.⁵¹ This would include conservation measures related to navigation and shipping.

Most NWAs are established through an order by the Governor in Council, and the *Wildlife Area Regulations* provide the details of their protection and management.⁵² There are currently 55 NWAs, some of which have a marine component. Scott Island is the only mNWA and has its own regulations.

Regulating Shipping within terrestrial NWAs with marine components

Under the *Wildlife Area Regulations*, vessels are prohibited from operating within an NWA except with a permit.⁵³ The *Wildlife Area Regulations* also prohibit commercial or industrial activities within an NWA without a permit, including commercial shipping.⁵⁴ In the case that eco-tourism or other types of commercial activities require navigation near or through NWAs, and recognizing that severe weather can inhibit or change planned navigation routes in these areas, additional education or notification systems about the NWA would be an effective way to ensure high levels of compliance.

Regulating navigation within mNWAs: Scott Islands

The *Scott Islands Protected Marine Area Regulations* include a blanket prohibition similar to the one for *Oceans Act* MPAs, prohibiting all activities that disturb, damage or destroy wildlife or its habitat from the area, and prohibiting harmful dumping and discharges.⁵⁵



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⁵⁰ Canadian Wildlife Service is also responsible for establishing and managing migratory bird sanctuaries under the *Migratory Birds Convention Act*, SC 1994, c. 22, which is not covered in this report.

⁵¹ *Canada Wildlife Act*, RSC 1985, c. W-9 [Canada Wildlife Act or CWA], s 4.1: established by Governor in Council.

⁵² *Wildlife Area Regulations*, CRC, c. 1609; *Canada Wildlife Act* RSC 1985 c. W-9 at, s. 4.1 [CWA].

⁵³ *Wildlife Area Regulations*, CRC, c. 1609, [Wildlife Area Regulations] s 3(h): "no person shall, in any wildlife area ... (h) operate a conveyance"; and the Canada Wildlife Act defines conveyance as a "vehicle, aircraft or water-borne craft."

⁵⁴ *Wildlife Area Regulations*, CRC, c. 1609, s 3(1)(k).

⁵⁵ *Scott Islands Protected Marine Area Regulations*, SOR/2018-119 at s 2(1)a

Table 3. marine National Wildlife Areas: Scott Islands

Protected Area	Location	Prohibition on dumping, discharging or disposals	Other navigation restrictions	Application to foreign vessels in the EEZ?
Scott Islands	Internal waters, territorial sea and EEZ	Yes, but does not apply to ships operating under the <i>Canada Shipping Act, 2001</i> , or foreign military vessels under the command of Canada.	<p>Invasive species, s 2(c): prohibited to “<i>introduce any living organism that is likely to harm wildlife or degrade the quality of wildlife habitat in the Protected Marine Area</i>”</p> <p>Approach distances: s. 2(e) prohibited to “<i>be within 300 metres of the low water mark of the Triangle, Sartine or Beresford Islands</i>”</p> <p>Anchorage: s. 2(f) prohibited to “<i>anchor a vessel of more than 400 gross tons within one nautical mile (1,852 metres) of the low water mark of the Triangle, Sartine or Beresford Islands</i>”</p>	Only if consistent with Article 56 of UNCLOS (granting Canada, as coastal state, sovereign rights for the conservation and management of natural resources and for the protection and preservation of the environment).

As noted in the table, navigation in accordance with the CSA is permitted within Scott Islands. This means that the Minister of Transport remains responsible for regulating navigation under other statutes.⁵⁶ However, the Minister of ECCC is responsible for ensuring compliance related to anchorage of vessels within the mNWA.

There is a provision in the *Canada Wildlife Act* that allows the Minister of ECCC to delegate their powers under the Act to another federal minister.⁵⁷ The Minister of ECCC can also set out terms and

conditions for the other minister to follow.⁵⁸ For example, this allows for the delegation of enforcement or administration duties to the Minister of Transport or Minister of Fisheries and Oceans. Those ministers are potentially better equipped for that role, and already assume responsibilities for vessel navigation through the same area. For example, the Canadian Coast Guard (CCG) is a specialized agency of DFO that is tasked with navigation and transport duties, including environmental response and assisting with enforcement (see section on *Oceans Act* below).



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⁵⁶ See Government of Canada, “Scott Islands Protected Marine Area Regulations: frequently asked questions” online: canada.ca/en/environment-climate-change/services/national-wildlife-areas/locations/scott-islands-marine/frequently-asked-questions.html

⁵⁷ CWA, at s 4.2(1).

⁵⁸ Ibid.

SELECT LAWS AFFECTING COMMERCIAL SHIPPING

Generally, Canada’s legal framework leaves the regulation of shipping and navigation in MPAs to the Minister of Transport to regulate shipping and navigation. As discussed below, the Minister of Transport can and does regulate shipping in MPAs. Nonetheless, it would be helpful if there were a legal mechanism available to the minister responsible for an MPA to recommend shipping regulations to the Cabinet or to the Minister of Transport. Otherwise, cooperation and communication between ministers remain important to ensuring full regulatory protection of MPAs.



Canada Shipping Act, 2001

Responsible minister: TC (all); DFO (parts)

As the primary statute regulating marine navigation and shipping, the *Canada Shipping Act, 2001* (CSA) contains a number of tools that could address the impacts of shipping within MPAs. Moreover, one of the primary objectives of the CSA is the protection of the marine environment from the damage caused by shipping.⁵⁹ Some of the CSA’s marine protection tools apply solely within Canada’s internal waters and territorial sea, while others extend to the limits of the EEZ. The geographic scope of each tool is discussed on a case-by-case basis, below.

The Minister of Transport primarily administers the CSA, though DFO and the CCG have responsibility over some parts of the Act, including those related to spill response.⁶⁰ This section addresses the following parts of the Act:

- Part 1 – general provisions, including general environmental protection;
- Part 4 – vessel safety;
- Part 5 – navigation services; and
- Parts 8 and 9 – pollution prevention and response.⁶¹

Part 1 – General environmental protection

Section 10.1(1) – Interim ministerial orders

Summary: Section 10.1 allows the minister to make an interim order under any of the regulatory powers available under the CSA in order to deal with direct or indirect risks to marine safety or the marine environment.

⁵⁹ *Canada Shipping Act*, SC 2001, c. 26 [CSA], s 6(c).

⁶⁰ *Ibid.* at, s 9.

⁶¹ Although not included in this review, it is noteworthy that under subsection 207(2)(b) of the CSA, the Governor in Council, on recommendation of the minister, may make regulations regulating the noise emissions from pleasure craft engines. While pleasure craft are outside the scope of this report, this is the only provision in the CSA providing opportunities to regulate noise explicitly.

Geographic scope: Orders can have the same geographic application as the regulation-making powers under which they are made. For example, an order made under the regulatory powers available under section 35.1(1) will apply to Canadian vessels everywhere, and to foreign vessels in Canadian waters and the EEZ of Canada.

Application: The Minister of Transport has used this power to protect southern resident killer whales (SRKWs) in Southern British Columbia. The *Interim Order for the Protection of Killer Whales (Orcinus orca) in the Waters of Southern British Columbia* relied on sections 35.1(1)(k) and 136(1)(f) of the CSA to introduce the following measures:⁶²

- A requirement that vessels maintain a 400m approach distance from SRKWs;⁶³
- A requirement that whale-watching boats maintain a 200m to 400m approach distance, if so authorized;⁶⁴
- The introduction of “interim sanctuary zones” for SRKWs by creating vessel no-go zones in the waters off of Saturna Island, Pender Island and Swiftsure Bank.⁶⁵

In this case, the interim order ceased to have effect after five months, and many of the terms were renewed following a second order issued in 2020.⁶⁶ However, interim orders may be valid for up to one year and can be extended by the Governor in Council for up to a maximum of two years after the initial applicable period.⁶⁷ The Governor in Council may also choose to make a regulation with the same effect as the interim order.⁶⁸

Section 35.1 – Regulations for the protection of the marine environment

Summary: Section 35.1 sets out the regulatory powers available to the Governor in Council, on recommendation of the minister, in order to protect the marine environment. These include any of the following measures:

- Procedures and practices to be followed in shipping;
- A system to manage the impacts of shipping and navigation on the marine environment
- Compulsory and recommended routes;
- Restrictions or prohibitions on the operation, navigation, anchoring, mooring or berthing of vessels;
- Requirements for vessel design and construction, certification and inspection.⁶⁹

Geographic scope: Regulations made under s. 35.1 apply equally to Canadian vessels everywhere and to foreign vessels in Canadian waters (Canada’s internal waters and the territorial sea), as well as in the EEZ.⁷⁰ However, foreign vessels traveling in innocent passage that will not call at Canadian ports may not be inspected by TC.

Application: The CSA also allows the Minister of Transport to amend many of the regulations enacted under s. 35.1 by order.⁷¹ These modified regulations are valid for up to one year.⁷² This order-making power allows the Minister of Transport to take regulatory action to protect the environment, while still retaining flexibility to quickly modify recommended routes or other restrictions on shipping if there is a pressing economic, safety or other reason to do so.

62 *Interim Order for the Protection of Killer Whales (Orcinus orca) in the Waters of Southern British Columbia*, May 27, 2019 (pursuant to *Canada Shipping Act*).

63 *Ibid.*, s 3(1)

64 *Ibid.*, ss 3(3), 4

65 *Ibid.*, s 5 and Schedule 2.

66 *Interim Order for the Protection of Killer Whales (Orcinus orca) in the Waters of Southern British Columbia, 2020*, May 31, 2020 (pursuant to *Canada Shipping Act, 2001*).

67 CSA, ss 10.1(2),(3).

68 CSA, s 10.1(2)(b).

69 *Ibid.* at s 35.1(1)(h)-(k).

70 *Ibid.* at ss 8, 35.1(1). “Canadian waters” typically refers to Canada’s internal waters and territorial sea; see footnote 74, below.

71 *Ibid.* at s 35.1(2). The power to amend regulations by order applies to any regulation made under s. 35.1(1)(h) “respecting procedures and practices that are to be followed”; (j) “respecting compulsory routes and recommended routes,” and (k) “regulating or prohibiting the operation, navigation, anchoring, mooring or berthing of vessels or classes of vessels.”

72 *Ibid.* at s 35.1(3).

Part 4 – Vessel Safety

Section 120(1) – Regulations for Vessel Safety

Summary: The CSA provisions on vessel and personnel safety include mechanisms that are available for environmental protection, as the two are often linked, especially when addressing the risk of groundings and spills. In particular, the Governor in Council may make regulations for the purposes of

- Protecting shore areas or environmentally sensitive areas (which could include MPAs); and
- Preventing collisions in Canadian waters or the EEZ.⁷³

Geographic scope: Most vessel safety regulations have a narrower application than those related to general environmental protection: they apply to Canadian vessels everywhere, but only to foreign vessels in Canada’s internal waters and territorial sea.⁷⁴ Thus, with the exception of the regulatory power to prevent collisions in Canadian waters or EEZ, discussed above, vessel safety regulations would not apply to foreign vessels within the EEZ.⁷⁵

Application: The two most relevant regulation-making powers pertain to the minister’s ability to regulate or prohibit operation of vessels in environmentally sensitive areas, and regulations pertaining to cargo. Under this power, the minister can regulate which types of cargo may be allowed by ships in the area.⁷⁶ This could reduce risks of volatile, dangerous or toxic material accidentally spilling into a sensitive area.

Part 5 – Navigation services

Section 136(1)(f) – Regulations for navigation services

Summary: Section 136(1)(f) allows the government to make regulations “regulating or prohibiting the navigation, anchoring, mooring or berthing of vessels for the purposes of promoting the safe and efficient navigation of vessels and protecting the public interest and the environment.”⁷⁷ This provision is very similar to the regulatory power granted in section 35.1(1)(k).⁷⁸

Geographic scope: The geographic scope of the application of this provision is not clear. Other provisions in s. 136(1) specify that they apply only to Canadian waters, but s. 136(1)(f) does not. However, as noted, it is very similar to s. 35.1(1)(k), so any regulations made to protect the marine environment may rely on the broad geographic application of that provision.

Application: As discussed above, the Minister of Transport issued the *Interim Order for the Protection of Killer Whales (Orcinus orca) in the Waters of Southern British Columbia* pursuant to s. 136(1)(f), as well as s 35.1(1)(k), to restrict vessel approach distances and create interim sanctuary zones for SRKWs. The government also enacted the *Vessel Operation Restriction Regulations* and the *Anchorage Regulations* under section 136(1), which create vessel no-go zones and no-anchoring areas.

73 Ibid. at s 120(1)(k),(l).

74 CSA, s 105. Although “Canadian waters” is not defined in the *Canada Shipping Act, 2001*, this term was defined in the now-repealed *Canada Shipping Act, RSC 1985, c S-9* as “the territorial sea of Canada and all internal waters of Canada.” It is defined in the *Coasting Trade Act, SC 1992 c 31, s 2* and the *Pilotage Act, RSC 1985 c P-14, s 2* as the internal waters and territorial sea of Canada. In addition, the *Ballast Water Control and Management Regulations and the Vessel Pollution and Dangerous Chemicals Regulations under the Canada Shipping Act* define “waters under Canadian jurisdiction” as Canadian waters and the EEZ of Canada, suggesting the same definition of Canadian waters as described above. See also section 35(1) of the *Interpretation Act, RSC 1985, c I-2*, which defines Canadian Water as including internal waters and the territorial sea.

75 CSA, s 105.

76 Ibid., ss 120(1)(k), (o), (s).

77 Ibid., s 136(1)(f).

78 S.CSA, s 35.1(1)(k) allows the government to make regulations “regulating or prohibiting the operation, navigation, anchoring, mooring or berthing of vessels or classes of vessels,” with the overall goal of protecting the marine environment.

Navigation Safety Regulations

Summary: The *Navigation Safety Regulations* prohibit anchoring by vessels within “prohibited waters.”⁷⁹

Geographic Scope: Currently, anchorage is prohibited in five different marine areas, including Conception Bay and Random Sound in Newfoundland, the Northumberland Strait between PEI and New Brunswick, the Welland Canal Entrances in Ontario, and Parry Bay in Metchosin, BC.⁸⁰

Application: The regulations provide a basis to prohibit anchorage in MPAs, either in part or entirety. This would require adding a reference, of the location of, or within, the MPA, into the Schedule. At least two areas within MPAs (Cook Banks in the Scott Islands and the SGAan Kinghla-Bowie Seamount) are shallow enough for anchorage, with depth limits at around 100m.



Vessel Operation Restriction Regulations

Summary: While not strictly related to commercial shipping, it is worth noting the *Vessel Operation Restriction Regulations* permit the Minister of Transport to place spatial restrictions on non-commercial vessels, including no-go zones for all vessels, prohibited areas for motorized vessels, speed restricted areas and restrictions on certain recreational activities, such as water skiing.⁸¹

Geographic scope: The regulations mostly apply to freshwater areas, but there are some restrictions on vessel traffic in marine waters on the Pacific coast. These include:

- Prohibition on shipping within part of Howe Sound near Porteau Cove;⁸²
- A maximum speed limit of 6km/h in Pendrell Sound, established to protect Pacific oyster beds and shellfish farms from boat wake damage;⁸³
- An exclusion on gas and electric motor boats in Crescent Beach, Boundary Bay and Cowichan Bay;⁸⁴
- Time restrictions on anchorage in False Creek, Vancouver.⁸⁵

Application: These regulations provide the basis for freshwater and marine water areas within existing or future MPAs to create no-go zones, speed restrictions, and no anchorage areas.

79 *Navigation Safety Regulations*, SOR/2019-100, 302.

80 *Ibid.*, Schedule 5.

81 *Vessel Operation Restriction Regulations*, SOR/2008-120, [*Vessel Operation Restriction Regulations*] s 2.

82 *Ibid.*, s 2(1), Schedule 1.

83 *Ibid.*, s 2(5) and Schedule 6.

84 *Ibid.*, s 2(2) and Schedule 2.

85 *Ibid.*, ss 13-14.

Parts 8 and 9: Pollution prevention and response in the marine environment

Summary: Part 8 of the CSA addresses pollution prevention and response and is overseen by both TC and DFO. Part 9 deals exclusively with the pollution prevention responsibilities of TC. The provisions of these sections regulate ballast water and other discharges with the objective of preventing the release of invasive species or harmful pathogens into Canadian waters.⁸⁶

Geographic scope: The provisions under Parts 8 and 9 apply to all vessels, Canadian and foreign, in Canadian waters and the EEZ.⁸⁷

Application: This part of the CSA provides the basis for a number of regulation-making powers to address various impacts related to discharge and pollution from ships.

Section 175.1 and section 189: vessel routing powers

Summary: The Minister of Transport has the power to reroute vessels that are carrying, discharging or at risk of discharging a pollutant within Canadian waters and the EEZ.⁸⁸ Pollution Response Officers (PROs), who are entrusted with enforcing the pollution prevention regime, have the same route-setting powers as the minister for vessels that are actively polluting or at risk of doing so. In addition, PROs may order vessels to leave or refrain from entering Canadian waters and the EEZ, or to adhere to speed restrictions while in these waters.⁸⁹

Geographic scope: These provisions apply to all vessels, Canadian and foreign, in Canadian waters and the EEZ.⁹⁰

Application: These powers could be used to protect MPAs from vessels carrying toxic loads, especially when the result of a spill would be catastrophic.

Ballast Water Control and Management Regulations

Summary: Part 9 of the CSA and the *Ballast Water Control and Management Regulations* regulate ballast water from vessels.

Geographic scope: The regulations apply to all vessels in waters under Canadian jurisdiction, which includes internal waters, territorial sea and EEZ.

Application: The regulations require that ships manage ballast water that is taken onboard a vessel outside of Canada's EEZ to minimize the introduction of harmful aquatic organisms or pathogens from ballast water into waters under Canadian jurisdiction.⁹¹ More specifically, ballast water that is taken onboard a vessel outside of Canada's 200NM EEZ must not be released into waters within Canada's EEZ.⁹² There are exceptions for emergencies.⁹³ If the requirements for exchange of ballast water outside the 200NM EEZ limit cannot be met because a vessel's treatment system fails or it would compromise the stability or safety of a vessel or crew, alternative exchange areas are provided in the regulations.⁹⁴

One of the alternative exchange areas provided for in the regulations actually incorporates protections for the Haida and *Oceans Act* SGaan Kinghlas-Bowie Seamount MPA by exempting waters within 50NM of the Bowie Seamount from the larger exchange area.⁹⁵ As this example highlights, the ballast water provisions provide a clear regulatory pathway for introducing tighter restrictions on ballast water management to protect the special biological diversity in MPAs and their surrounding areas. Regulations could also be amended to prevent ballast water exchanges within certain distances of any MPA.

86 CSA, s 190(1)(f),(g).

87 Ibid., s 166.

88 CSA, s 189.

89 Ibid., s 175.1.

90 Ibid., s 166(1).

91 Ibid., s 4(2). *Ballast Water Control and Management Regulations*, SOR/2011-237 [*Ballast Water Control and Management Regulations*], s 4(2).

92 Ibid., s 6.

93 Ibid., s 4(5). There is an exception to these requirements in the Laurentian Channel, see Ibid s 6, which may impact the Laurentian Channel MPA.

94 Ibid., s 6(4).

95 Ibid., s 6(4)(b).

Vessel Pollution and Dangerous Chemicals Regulations

Summary: The *Vessel Pollution and Dangerous Chemicals Regulations*, enacted under the CSA, regulate discharges from ships, including vessel-source pollution, sewage, garbage, greywater, ballast water and air emissions. These regulations are largely the adoption of the *International Convention for the Prevention of Pollution from Ships* (MARPOL).

Geographic scope: These regulations can apply to all vessels in waters under Canadian jurisdiction, including Canada's internal waters, territorial sea and EEZ.⁹⁶ However, there may be exceptions for foreign vessels under certain circumstances or for certain type of discharges.

Vessels in waters under Canadian jurisdiction must report any discharge or anticipated discharge to the appropriate authorities as soon as the discharge occurs or is anticipated.⁹⁷

Application:

No-Discharge Zones

The *Vessel Pollution and Dangerous Chemicals Regulations* could be amended to restrict the discharge of sewage, oily water, cargo residues and other noxious liquids in particular marine areas. Under the existing regulations, discharges in Section I waters (most internal waters and Fishing Zones 1, 2 and 3) are required to meet a higher standard than in Section II waters (most other waters), or are prohibited completely.⁹⁸ In addition, designated sewage areas, where sewage discharges are required to be treated to a very high standard,⁹⁹ are listed in Schedule 2 of the regulation. There is an exception to these higher standards in cases of accident or emergency.¹⁰⁰

Discharge zoning regulations could be expanded to include outright prohibitions, permitted under

certain conditions or required to meet a higher standard. These provisions could provide stronger protection to waters adjacent to Canada's coastline and to important fishing areas. Similar or even stronger protections could be afforded to MPAs.

Greywater Discharge

Scope: This section of the regulation applies to vessels in waters under Canadian jurisdiction other than arctic waters.¹⁰¹

The *Vessel Pollution and Dangerous Chemicals Regulations* define greywater as drainage from sinks, laundry machines, bathtubs, shower-stalls or dishwashers.¹⁰² It does not include sewage or drainage from machinery spaces or workshop areas.¹⁰³

The regulation states that the authorized representative of a vessel must ensure that any release of greywater by or from the vessel into the water does not result in deposit of solids or leave a sheen on the water.¹⁰⁴ The terms "solids" or "sheen" are undefined, and the type of substances allowed in greywater discharges are not specified.

Regulations for MPAs could follow the example of the Banc-des-Américains MPA regulation, which restricts the release of greywater. This provision could be added to existing regulation or become a standard provision for future MPAs. This would be consistent with the *Vessel Pollution and Dangerous Chemicals Regulations* on discharge of sewage and greywater because these discharges do not serve a navigational purpose except in the event of emergencies, which are already listed as an exception in the regulations.¹⁰⁵

Sewage Discharge

Scope: The scope of this section of the regulation is somewhat unclear but appears to apply to all vessels unless otherwise described within a specific provision. Canada has complete authority to regulate or prohibit sewage discharge in its internal waters.

96 *Vessel Pollution and Dangerous Chemicals Regulations*, SOR/2012-69 [*Vessel Pollution and Dangerous Chemicals Regulation*], ss 1(1), 3.

97 *Ibid.*, s 132.

98 *Ibid.*, ss 1(1) "Section I waters" and "Section II waters," 30 (oily discharges), 67 (noxious liquid substances), 96 (sewage), 97(2) (testing of effluent), 101(1) (garbage), 126(2),(3) (discharge of pollutants). See also the *Fishing Zones of Canada (Zones 1, 2 and 3) Order*, the *Fishing Zones of Canada (Zones 4 and 5) Order* and the *Fishing Zones of Canada (Zone 6) Order* under the *Oceans Act*, *supra* note 8.

99 *Ibid.*, ss 1(1), 30, 96, 102, 126.

100 *Vessel Pollution and Dangerous Chemicals Regulations*, s 5.

101 *Ibid.*, s 131.1(2).

102 This definition is incorporated by reference into the recent *Banc-des-Américains Marine Protected Area Regulations*, SOR/2019-50.

103 *Vessel Pollution and Dangerous Chemicals Regulations* SOR/2012-69 at, s. 131.1(1).

104 *Ibid.*, s 131.1(4).

105 *Ibid.*, s 131.1(3) sets out exceptions.

The *Vessel Pollution and Dangerous Chemicals Regulations* define sewage as human and animal waste, drainage from toilets and drainage from medical premises and spaces containing live animals.¹⁰⁶ This definition is incorporated by reference into the recent *Banc-des-Américains MPA Regulations*.

Sewage discharge is strictly regulated in terms of location and concentration, as noted above. Within 3NM of the shoreline, the discharge of raw sewage is prohibited with few and specific exceptions. Additionally, all vessels must pass sewage through a Marine Sanitation Device prior to discharge. The regulations also create Designated Sewage Areas; despite their name, these areas actually require vessel sewage discharges to meet a higher standard (a coliform count of less than 14/100mL, versus a coliform count of less than 250/100mL in other areas).¹⁰⁷

An effective option to reduce sewage release would be to designate all MPAs that are not in internal waters or within 3 NM of the coastline as Designated Sewage Areas to provide them with the protection of higher standards of sewage discharge. Alternatively, further amendment to the regulation could allow for the complete prohibition of sewage discharge in all MPAs.

Notices to Mariners

Under the *Oceans Act*, the Canadian Coast Guard (CCG), under the mandate of DFO, is empowered to provide marine communications and traffic management services.¹⁰⁸ This includes providing physical aids to navigation and Notices to Mariners, which are widely used to provide vessels with information about navigational safety.

Notices to Mariners are also used to communicate voluntary and regulatory measures related to marine conservation. For example, Notices to Mariners include the boundaries of MPAs and the content of MPA regulations.

Notices to Mariners can also create voluntary precautionary measures to protect the environment. For example, a portion of the Gully MPA has been recognized as a Whale Sanctuary by DFO since 1994, and the CCG issues an annual Notice to Mariners with voluntary guidelines for vessel operations in the area.¹⁰⁹ Notices to Mariners may also be used to create additional awareness of specific MPA areas like sensitive areas for breeding and foraging or areas more likely to be frequented by marine mammals.

International obligations

Under the CSA, where the minister has reasonable grounds to believe that a foreign vessel is in contravention of an international convention or protocol (these are listed in Schedule 1 of the Act), he or she can direct that vessel to leave Canada's internal waters or territorial sea, or to refrain from entering Canadian waters if they are still outside of Canadian jurisdiction.¹¹⁰ That power is limited to instances where the safety of the vessel, any person on board or the environment is at imminent risk.¹¹¹

Schedules 1 and 2 of the CSA lists international conventions protocols and resolutions that Canada has signed relating to matters under the scope of the Act.¹¹² These include conventions and protocols related to preventing collisions, preventing oil and other pollution from ships, controlling anti-fouling systems and controlling and managing ballast water. The *International Convention for the Safety of Life at Sea of 1974* (SOLAS) and MARPOL are of particular importance for this report and are discussed in greater detail in the section on international law below.

¹⁰⁶ *Vessel Pollution and Dangerous Chemicals Regulations*, s 1(1).

¹⁰⁷ *Ibid.*, s 96.

¹⁰⁸ *Oceans Act*, *supra* note 8, s. 41(1).

¹⁰⁹ The Gully MPA Regulatory Impact Analysis Statement, *Canada Gazette Part II*, Vol 138, No 10 (2004-05-19), available online: dfo-mpo.gc.ca/oceans/documents/mpa-zpm/gully/Gully-RIAS.pdf

¹¹⁰ CSA, s 227(1).

¹¹¹ *Ibid.* at s. 227(2).

¹¹² *Ibid.* at s. 29.

Pilotage Act

Responsible minister: Transport Canada

The *Pilotage Act* is intended to ensure safe and efficient pilotage through Canada’s oceans by requiring ships to have pilots on board in waters that are challenging to navigate.¹¹³ Amendments to the Act in 2019 provided for an expansion of the objectives of pilotage service to include “protection of human health, property and the environment.”¹¹⁴

A pilot is a guide with specific and expert local knowledge who serves as a representative of the Crown on a vessel. A pilot can be licensed or be a regular member of a ship’s crew with a certificate for a specific compulsory pilotage area.¹¹⁵ They do not have conduct of the ship but aid in navigation by providing guidance and advice to the captain of the vessel; vessel captains retain liability because they have all final decisions on vessel navigation.

Pilotage Authorities are established in the Atlantic Ocean, Pacific Ocean, Great Lakes and the St. Lawrence and Saguenay rivers. There are differences in the roles pilots play within each region, and each authority has its own regulation. The objective of the authorities is to manage an efficient pilotage service in the interest of safe navigation.¹¹⁶ Currently, Pilotage Authorities are set up to operate in Canada’s territorial seas and internal waters, but not the EEZ.¹¹⁷



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113 *Pilotage Act*, RSC 1985, c P-14. [*Pilotage Act*]. In 2019, the *Pilotage Act* was amended by Bill C-97, the *Budget Implementation Act, No. 1*. The bill received Royal Assent on June 21, 2019.

114 *Pilotage Act*, s 2(a).

115 *Pilotage Act*, s 38.01(1).

116 *Ibid.*, s 18.

117 It is unclear from the legislation whether Pilotage Authorities have jurisdiction in the EEZ, although Transport Canada has indicated its interpretation is that the Schedule in the Act refers to “Canadian Waters” and does not apply to the EEZ.

Waivers in Compulsory Pilotage Areas

Regulations made under the Act establish compulsory pilotage areas.¹¹⁸ Within these areas, ships that meet the definition of “ships subject to compulsory pilotage” are required to have a pilot onboard while they travel through the area.¹¹⁹ However, the Pilotage Authority has the power to waive this requirement for qualified applicants, subject to conditions that the authority chooses to impose.¹²⁰ One of these conditions may be a “no-go” zone, where ships may not pass without a pilot.

This power was used in response to the sinking of the *Nathan E. Stewart* in 2016. The Pacific Pilotage Authority established several no-go areas for vessels carrying, pushing or towing oil cargoes on BC’s Central Coast.¹²¹ The no-go areas, identified in consultation with First Nations and affected communities, industry and government, were subject to a heightened level of risk in the event of a breakdown, both in terms of human safety and environmental pollution.¹²²

TC could require compulsory pilotage throughout MPAs within Canada’s internal waters and territorial sea under the *Pilotage Act* by creating additional regulations under the Act. Compulsory pilotage, either from no-go zones in waivers or those created under regulation, could reduce the risk of shipping impacts on MPAs in two ways.

First, it would incentivize and perhaps require pilots to educate themselves on local MPAs, which would increase pilots’ awareness of the areas and reasons to avoid navigating through them. This may be facilitated by TC through training and education opportunities. Educating pilots about specific risks to sensitive areas or species within an MPA can create opportunities to avoid areas that are especially vulnerable to otherwise allowed discharges or vessel strikes.

Second, the additional time and potential cost of pilotage may incentivize vessels to avoid MPA entirely. It should be noted, however, that TC, Pilotage Authorities and the shipping industry should work together to encourage the use of pilots in sensitive or protected marine areas because of the added value that their knowledge and expertise provides for reducing environmental impacts and, potentially, the reduction of fines or other liabilities for ships and their crews.

There is precedent in other countries for providing mandatory pilotage within MPAs. For example, Australia has enacted legislation requiring mandatory pilotage throughout the Great Barrier Reef. The pilotage requirements began as voluntary measures but eventually became mandatory and were endorsed by the International Marine Organization (IMO).¹²³ The *Great Barrier Reef Marine Park Act* applies to all vessels within Australia’s internal waters, territorial sea and EEZ, including foreign vessels.¹²⁴

118 Under the previous version of the *Pilotage Act*, Pilotage Authorities regulated licensing of marine pilots, established compulsory pilotage areas for ships and prescribed classes of ships that were subject to compulsory pilotage. Under the newly amended Act, regional Pilotage Authorities no longer have the authority to make regulations. This responsibility has been transferred to the Governor in Council (with recommendation by the Minister of Transport). This includes the ability to establish compulsory pilotage areas. Similarly, the power to license marine pilots has been transferred to the Minister of Transport. This change may be an attempt to harmonize the regulatory regimes among all pilotage areas.

119 The *Pacific Pilotage Regulations*, CRC, c 1270 [*Pacific Pilotage Regulations*], s 9, defines ships subject to compulsory pilotage as non-pleasure craft ships over 350 gross tons, and pleasure crafts over 500 gross tons, with a few exceptions. However, this definition varies according to pilotage region.

120 See e.g. *Pacific Pilotage Regulations*.

121 Pacific Pilotage Authority “Pilotage Waiver Standard of Care”: Implementation Guidelines, (15 September 2017), online: ppa.gc.ca/sites/default/files/2018-07/PPA%20Pilotage%20Waiver%20Standard%20of%20Care%20September%202015%202017.pdf. The no-go areas are: FitzHugh Sound, Lama Pass, Seaforth Channel, Boat Bluff and Heikish Narrows, Princess Royal Channel, Grenville Channel, Laredo Sound and Principe Channel.

122 Greenwood Maritime Solutions Ltd., *A Risk Assessment of the Pacific Pilotage Authority’s Process for Granting Waivers from Compulsory Pilotage on the BC Coast*. Prepared for the Pacific Pilotage Authority, (23 May 2017), GSML Report PPA Waivers 11/16, Victoria, BC.

123 See Great Barrier Reef Marine Park Authority, “Compulsory Pilotage” online: gbrmpa.gov.au/our-work/Managing-multiple-uses/shipping/compulsory-pilotage

124 *Great Barrier Reef Marine Park Act 1975*, No. 85, s 5(3).

Canadian Environmental Protection Act

Responsible minister: ECCC

The *Canadian Environmental Protection Act, 1999* (CEPA) regulates the release and disposal of substances into the environment, including the marine environment.¹²⁵ Part 7, Division 3 of CEPA deals with disposal at sea in Canada's internal waters, territorial sea and EEZ.¹²⁶

Disposal at Sea

CEPA prohibits disposal at sea of all substances without a permit, and the minister may only grant a permit for "waste and other substances" that are listed in Schedule 5 of the Act. These include dredged material, fish waste, inert geological matter, uncontaminated organic matter and bulk substances.¹²⁷ CEPA also prohibits incineration of a substance onboard a ship unless the substance is waste generated onboard or a permit for incineration is issued.¹²⁸

It should be noted that CEPA does not regulate disposals that are "incidental to or derived from the normal operations of a ship".¹²⁹ It is unclear whether this includes discharges of greywater, ballast water and potentially other substances like sewage that could harm MPAs. However, these discharges are regulated under the CSA, discussed above.

When issuing a permit authorizing disposal at sea, the minister must consider a number of factors listed in Schedule 6 of the Act.¹³⁰ These include:

- The physical, chemical and biological characteristics of the water column and seabed;
- The location of amenities, values and other uses of the area;
- An assessment of the effect of the waste on existing substances;
- Economic and operational feasibility.¹³¹

The *Disposal at Sea Permit Application Regulations* under CEPA further require that an applicant for a permit list any sensitive areas in proximity to the proposed discharge, including MPAs, ecological reserves, migratory bird sanctuaries, critical habitat for species at risk, recreational areas, and areas of natural beauty or of cultural, historical, scientific or biological importance.¹³²

Nevertheless, the minister has the authority to issue permits under CEPA allowing discharge and disposal within MPAs. Their protection depends on the legislation under which each individual MPA was created. For example, as noted above, Section 14 of the *CNMCA Act* allows disposals and discharges within protected areas if they are authorized under CEPA. Discharge and disposal are explicitly prohibited in some *Oceans Act* MPAs, while the regulations for other *Oceans Act* MPAs include a general prohibition on disturbing, damaging or destroying marine life and habitat that would likely include disposal of waste and other substances.

Given the inconsistencies in their regulations, MPAs could be better protected by the creation of general regulatory or policy guidelines for issuing disposal-at-sea permits near MPAs, and the requirements in the *Disposal at Sea Permit Application Regulations* suggests that ECCC is already alert to this issue. Such guidelines could define acceptable buffer zones around MPAs and sensitive areas and impose limits on the type of substances that may be discharged.

125 CEPA implements portions of the two international conventions: The *Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter* signed by Canada on December 29, 1972 ["London Convention"] and the 1996 *Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter*, 1972 as amended from time to time ["London Protocols"].

126 *Canadian Environmental Protection Act, 1999*, SC 1999 c. 33, s. 122(2) ["CEPA"].

127 CEPA, Schedule 5.

128 CEPA, ss 126(1), 126(1.1).

129 CEPA, s 122(1)(h).

130 *Ibid.*, s 127(3).

131 *Ibid.*, s 11, Schedule 6, s. 11. For more details on disposal at sea permitting, see also *Disposal at Sea Regulations*, SOR/2001-275.

132 *Disposal at Sea Permit Application Regulations*, SOR 2014/177, Schedule 1.

Marine Liability Act

Responsible minister: Transport Canada

The *Marine Liability Act* (MLA) deals with liability issues for the shipping industry, including apportionment and limitation of liability, and liability for pollution and spills.

Part 6 of the MLA incorporates several international conventions on pollution into Canadian law, covering topics such as oil pollution damage, bunker oil pollution damage and hazardous and noxious substances.

Part 7 of the MLA creates the Ship Source Oil Pollution Fund, a domestic fund that compensates third parties for cleaning up spills within Canada's Territorial Sea and EEZ. The MLA also incorporates several international pollution funds that serve the same purpose.

Under the MLA, ship owners are strictly liable for oil pollution damage, prevention and clean-up costs for spills within Canadian waters. If environmental harm results from a spill, the ship owner is liable for the cost of "reasonable measures of reinstatement" of the environment.

There is potential for amendments to be made under the MLA that would increase liability for spills affecting MPAs. For example, the creation of additional liability or removal of limitations on liability for remediation of MPAs or a requirement to offset damage to MPAs by paying into a marine restoration fund. Amendments like these could have the effect of increasing ships' vigilance while passing through MPAs or encouraging them to avoid these areas altogether.

Arctic Waters Pollution Prevention Act

Responsible minister: Transport Canada

The *Arctic Waters Pollution Prevention Act* (AWPPA) imposes strict safety and environmental requirements within Arctic waters. AWPPA is largely a supplement to the broad powers and authorities already found in the CSA that is specific to Arctic waters, however there are some notable differences. The AWPPA prohibits the deposit of all waste within Arctic waters or any place on the mainland or islands of the Canadian arctic except as permitted under the Act or regulations.¹³³ The *Arctic Shipping Safety and Pollution Prevention Regulations*, described in greater detail below, prescribe strict rules around deposits of sewage, garbage, waste, noxious liquids and oil.¹³⁴ They notably do not address greywater discharge.

The AWPPA was a part of Canada's Arctic foreign policy and its environmental protection provisions are another way that Canada seeks to exercise its sovereignty.¹³⁵ The Act was immediately criticized by a number of nations, including the United States and the United Kingdom, as an unlawful attempt by Canada to expand its maritime jurisdiction and as an illegal interference with the freedom of navigation.¹³⁶ The AWPPA was eventually grounded in Article 234 of UNCLOS, which was one of the amendments to the convention that occurred between 1973 and 1982.¹³⁷ Article 234 allows coastal states to enact special protective measures over ice-covered areas in the EEZ. Whether the regulations could have survived if Article 234 did not exist is uncertain.

The Act applies within all Arctic waters, defined as the internal waters, territorial sea and EEZ of Canada within the area enclosed by the 60th parallel of north latitude and the 141st meridian of west longitude, and includes the islands of the Canadian Arctic Archipelago.¹³⁸ It applies to all vessels travelling within the Arctic.

133 *Arctic Waters Pollution Prevention Act*, RSC 1985, c A-12, s 4.

134 SOR/2017-286.

135 Government of Canada, "Statement on Canada's Arctic Foreign Policy: Exercising Sovereignty and Promoting Canada's Northern Strategy Aboard" (2010), online: international.gc.ca/world-monde/assets/pdfs/canada_arctic_foreign_policy-eng.pdf

136 Suzanne Lalonde, "The Arctic Exception and the IMO's PSSA Mechanism: Assessing their Value as Sources of Protection for the Northwest Passage" (2013) 28:1 *The International Journal of Marine and Coastal Law* 401 at 403-404; Dorotyya Bogнар, "The Elephant in the Room: Article 234 of the Law of the Sea Convention and the Polar Code as an Incompletely Theorized Agreement" (2018) 8:1 *The Polar Journal* 182 at 187.

137 *Ibid.*

138 Suzanne Lalonde, "The Arctic Exception and the IMO's PSSA Mechanism: Assessing their Value as Sources of Protection for the Northwest Passage" (2013) 28:1 *The International Journal of Marine and Coastal Law* 401 at 403-404.

Shipping safety control zones

Shipping safety control zones are prescribed under the AWPPA by the *Shipping Safety Control Zones Order*. Currently, these zones cover essentially the entirety of Canada's Arctic region above the 60th parallel.¹³⁹ In these safety control zones, all vessels are prohibited from depositing waste of any type into Arctic waters or any place where the waste may enter Arctic waters. Under AWPPA, waste is broadly defined and includes any substance that, if added to water, would degrade or alter, or be part of a process that would degrade or alter, the quality of water to a degree that is detrimental to its use by man, or any animal, fish or plant useful to man.¹⁴⁰

Regulations can be created under AWPPA to prohibit completely any ship from navigating within any of the shipping safety control zones unless the ship complies from the standards set out in the regulations.¹⁴¹ This allows for the minister to impose higher standards for vessels in shipping safety control zones in which there are MPAs.

Additionally, under AWPPA, pollution prevention officers may board any foreign flagged vessel to confirm the vessel's compliance with the Act.¹⁴² This inspection power exceeds what is normally allowed under UNCLOS, which only allows officers to physically inspect vessels when they have clear grounds to believe that there has been a substantial discharge of pollution into the marine environment.¹⁴³

Because of AWPPA, any MPAs that are created partially or completely within Arctic waters have a viable path to prohibiting vessel discharges simply by referencing AWPPA. The stringent environmental protection measures then prevent many of the discharges that are otherwise allowed under the CSA.

Arctic Shipping Safety and Pollution Prevention Regulations

Summary: The *Arctic Shipping Safety and Pollution Prevention Regulations* (Arctic Regulations) regulate vessels navigating in Arctic waters and are created by the Governor in Council on recommendation of the Minister of Transport under the CSA and the AWPPA.¹⁴⁴

Geographic Scope: The regulations apply to Canadian vessels navigating in Arctic waters and to all foreign vessels navigating in any of the shipping safety control zones.

Application: The Arctic Regulations implement the requirements of the international *Polar Code*, including setting out safety measures for ships operating in polar waters (see more about this in the section on SOLAS, below) and prevents navigation of certain vessels within shipping safety control zones during certain times of the year.¹⁴⁵

The Arctic Regulations also set out measures to prevent pollution in Arctic waters, like prohibiting or restricting pollution, sewage and garbage discharges, and setting oil fuel tank requirements.¹⁴⁶ As noted above, they do not address greywater discharge. The regulations generally allow waste to be deposited if the deposit is necessary in an emergency to save a life or vessel, occurs as a result of an accident during ordinary seafaring practices or occurs as an accidental loss if reasonable precautions were taken.¹⁴⁷

The regulations set strict requirements for oil fuel tanks on vessels operating in Arctic waters and prohibit carriage of noxious liquid substances in cargo tanks on vessels.¹⁴⁸ The regulations also prohibit discharge of sewage from Canadian vessels unless they meet specific requirements that are set out.¹⁴⁹

139 *Arctic Shipping Safety and Pollution Prevention Regulations*, SOR/2017-286 at, s. 13 ["Arctic Regulations"]; *Shipping Safety Control Zones Order*, CRC c. 356 at, s. 3; see also Schedule 1 for coordinates and Schedule 2 for map.

140 AWPPA, *supra* note 134, s 4.

141 AWPPA, s 12(1).

142 *Ibid.*, ss 11(1), 15(4)(a). Essentially the entire Canadian Arctic is made up of sixteen shipping safety control zones. See *Shipping Safety Control Zones Order*, CRC, c 356 Schedule 2.

143 UNCLOS, article 220(5).

144 The regulations are made pursuant to subsections 7(2), 35(1)a, 120(1), 190(1), and 207(2) of the CSA and subsections 4(3) and 12(1) of the AWPPA.

145 Arctic Regulations at ss 6(1), 8(1), (2). Some of the zones are restricted on a seasonal basis, and others are year-round. See Arctic Regulations, also Schedule 1.

146 *Ibid.*, s 12.

147 *Ibid.*, s 14.

148 Arctic Regulations, s 16, 18; noxious liquid substances disallowed include those listed in chapters 17 and 18 of the IBC Code.

149 Arctic Regulations, s 20(1).

INTERNATIONAL LEGAL FRAMEWORK

This section outlines the international ocean governance regime as it applies to shipping and marine environmental protection. It covers the foundational legal framework laid out in the *United Nations Convention on the Law of the Sea* (UNCLOS). The section also looks at two key international conventions for marine protection and shipping – the *International Convention for the Prevention of Pollution from Ships* (MARPOL) and

the *International Convention for the Safety of Life at Sea* (SOLAS) – and the non-binding Particularly Sensitive Sea Area designation.

See **Appendix B** for a list of other international conventions that deal with shipping and the marine environment that are not addressed in this section.

GENERAL INTERNATIONAL OCEAN GOVERNANCE

United Nations Convention on the Law of the Sea

The United Nations Convention on the Law of the Sea (UNCLOS), sometimes referred to as the constitution of the oceans, was ratified in 1982. Canada has signed and ratified UNCLOS.

As noted above, UNCLOS sets out the maritime zones in the ocean, including a coastal state’s internal waters, territorial sea, contiguous zone, and EEZ. The rights and responsibilities of coastal nations and foreign vessels vary between these zones. Generally, prescriptive power lessens the farther the zone is from shore.

Like all other states, Canada has full sovereignty over its internal waters. As a coastal state, Canada also has near full sovereignty over its territorial sea, subject to foreign vessels’ right of innocent passage. Canada has sovereign rights within the EEZ, which are more limited than full sovereignty and are balanced against

the rights and freedoms of other states.¹⁵⁰

Foreign vessels within Canada’s ocean operate under the jurisdiction of their flag states, which refers to the states in which ships are registered. Flag states grant nationality to ships, which then entitle the ships to the protections of that state’s domestic laws. Flag states are required to exercise their jurisdiction over each flagship in all waters, including other coastal states’ waters, in matters of technical capacity, safety measures and compliance with international laws.¹⁵¹

UNCLOS does not prevent Canada from regulating shipping impacts in MPAs; on the contrary, there are many provisions in UNCLOS that encourage environmental protection. Instead, UNCLOS creates a regime of mutual rights and obligations of both coastal states and foreign vessels; UNCLOS Article 192 reads simply: “States have the obligation to protect and preserve the marine environment”.

¹⁵⁰ UNCLOS, arts 2, 55; Rothwell at 14.

¹⁵¹ UNCLOS, article 94(1).

Table 4. UNCLOS jurisdiction relevant to shipping activities within MPAs

Maritime zone	Coastal state rights and responsibilities	Foreign vessel rights and responsibilities
Internal waters	<ul style="list-style-type: none"> • Full sovereignty over air, water column, seabed and subsoil; • Ability to regulate shipping without any restrictions derived from international law. 	<ul style="list-style-type: none"> • N/A
Territorial sea	<ul style="list-style-type: none"> • Full sovereignty over air, water column, seabed and subsoil; • Coastal state may establish spatial protection measures; • Obligation to protect and preserve the marine environment. 	<ul style="list-style-type: none"> • Right of innocent passage.
Straits used for international navigation (within internal waters or territorial sea)	<ul style="list-style-type: none"> • Obligation to protect and preserve the marine environment. 	<ul style="list-style-type: none"> • Right of transit passage.
Contiguous zone	<ul style="list-style-type: none"> • Sovereign rights over renewable and non-renewable resources in the water column, seabed and subsoil; • Right to enforce state’s customs, fiscal, immigration or sanitary laws; • Right and obligation to protect and preserve the marine environment; • Due regard for the rights and obligations of foreign vessels in exercising rights and duties. 	<ul style="list-style-type: none"> • Freedom of navigation; • Due regard for the rights and obligations of the coastal state in exercising rights and duties.
Exclusive Economic Zone	<ul style="list-style-type: none"> • Sovereign rights over renewable and non-renewable resources in the water column, seabed and subsoil; • Right and obligation to protect and preserve the marine environment; • Due regard for the rights and obligations of foreign vessels in exercising rights and duties. 	<ul style="list-style-type: none"> • Freedom of navigation; • Due regard for the rights and obligations of the coastal state in exercising rights and duties.

Regulating shipping within internal waters

Canada’s internal waters have the same legal status as its land areas, meaning that Canada has full jurisdiction and can regulate shipping within MPAs that are in its internal waters “without any restrictions derived from international law”.¹⁵² Canada has done so in many cases, such as the regulation of greywater discharge and anchorage within the Banc-des-Américains MPA.¹⁵³

¹⁵² Cyrille de Klemm, *Biological Diversity Conservation and the Law* (Gland, Switzerland: IUCN, 1993) [de Klemm] at 257.

¹⁵³ See section on *Oceans Act* MPAs, above, and Banc-des-Américains MPA regulation.

Regulating shipping within the territorial sea

Similarly, Canada has near full jurisdiction over its territorial sea, which is considered to be part of Canada's territory. This means that Canada can, and does, establish spatial measures to protect the territorial sea and its wildlife, including routing restrictions, speed restrictions, no-go zones, pilotage requirements and no-discharge zones.¹⁵⁴

UNCLOS also allows coastal states to establish sea lanes and traffic separation schemes within the territorial sea, for the purpose of safe navigation.¹⁵⁵ Sea lanes are designated areas through which ships are directed. These lanes can reduce ship impacts by creating a small corridor through which ships pass, reducing their impacts in protected areas. These routing measures can also address situations where safety and environmental concerns overlap. For example, restricting the routes of tankers and ships carrying dangerous or noxious substances.¹⁵⁶

Speed controls are also allowed under UNCLOS. They can be used separately or in conjunction with sea lanes and routes to reduce the risk of physical collision with certain marine species and to reduce wake size and underwater noise.

When creating sea lanes, the coastal state must also consider other factors, including recommendations of the International Marine Organization (IMO), customary use for international navigation, specific characteristics of ships and channels and traffic density.¹⁵⁷ These spatial measures are valid as long as foreign ships' right of innocent passage is maintained.¹⁵⁸

The right of innocent passage refers to the right to travel from point A to point B within Canadian waters, in a way that is "not prejudicial to the peace, good order or security of the coastal State." Canada may regulate how and where ships travel, including for the purposes of environmental protection and conservation, as long as these measures do not have "the practical effect of denying or impairing the right of innocent passage."¹⁵⁹

As one environmental law researcher has written:

It would seem, therefore, that at least in internal waters and the territorial sea where the coastal State exercises sovereign rights, restrictions on navigation which are specifically enacted to preserve a marine protected area do not conflict with the rules of international law, unless of course, these result in the denial of innocent passage. Coastal States find it quite natural to close certain areas to navigation for national defence reasons. There is nothing that prevents them from doing so for conservation purposes.¹⁶⁰

154 For example, SARA protection order for SRKW; Banc-des-Américains MPA; compulsory pilotage zones.

155 UNCLOS, article 22(1).

156 *Ibid.*, article 22(2).

157 *Ibid.*, article 22 (3).

158 de Klemm at 257.

159 UNCLOS, article 24.

160 de Klemm at 260-61.

The right of transit passage in straits used for international navigation

A coastal state's ability to protect the environment is more limited in straits used for international navigation than in other areas of its internal waters and territorial sea. This is because of the right to transit passage, which is similar to innocent passage, but applies only in straits used for international navigation. These international straits connect areas of the high seas or EEZ, and foreign vessels have a duty to "proceed without delay through or over the strait".¹⁶¹

In the event that an MPA is located in an international strait, coastal states may impose restrictions on shipping to protect the area, but these require some level of international consensus. For instance, a coastal state could reduce impacts by designating sea lanes that avoid the area. However, these lanes must be approved by the IMO and agreed to by other bordering states before they can be imposed.¹⁶² Similarly, a coastal state could also reduce impacts by enforcing laws that prevent and reduce pollution, but only so far as the rules are consistent with international regulation. However, sea lanes and pollution control are the only environmental measures a coastal state may impose on ships with a right of transit passage.¹⁶³

There are currently several contested areas, which Canada maintains are its internal waters, but which other states have argued are in fact international straits. These areas are located in the Arctic and include, but are not limited to, the Northwest Passage.

Regulating shipping in the EEZ

Canada's ability to restrict navigation within the EEZ is more contested.

Within the EEZ, Canada has sovereign rights over living and non-living natural resources, as well as the right and duty to protect and preserve the marine environment with the EEZ.¹⁶⁴ These rights and duties must be exercised with "due regard" to the rights of other states, particularly foreign vessels' rights to freedom of navigation within the EEZ.¹⁶⁵

The language in UNCLOS suggests that there may be some limits to the freedom of navigation in order to allow coastal states to meet their obligations toward the marine environment. This interpretation is at odds with the view that foreign states' freedom of navigation is absolute within the EEZ. For example, it is often asserted that coastal states may not enact any measures in the EEZ that would interfere with foreign vessels' ability to navigate where they choose. This interpretation is difficult to reconcile with Article 194 of UNCLOS, which requires that states take all measures necessary to prevent marine environmental pollution, including measures "necessary to protect and preserve rare or fragile ecosystems" and the habitat of depleted, threatened or endangered marine life.¹⁶⁶ The only limit on this requirement is that a coastal state may not unjustifiably interfere with other states' rights under UNCLOS.¹⁶⁷

Additionally, UNCLOS does not contemplate freedom of navigation as an absolute right, but instead requires that foreign vessels have due regard for coastal states' rights and duties under UNCLOS.¹⁶⁸ The Permanent Court of Arbitration at the Hague has held that in the majority of cases, due regard "will necessarily involve at least some consultation with the rights-holding State," as well as a "balancing exercise" between the two states' rights and interests.¹⁶⁹ Taken

161 UNCLOS, articles 37, 38, 39(1)(a).

162 Ibid., article 41; see also Rüdiger Wolfrum, "Freedom of Navigation: New Challenges" (2008: IMO) at 4 ["Wolfrum"] at 4.

163 UNCLOS, article 42(1)(b) "... States bordering straits may adopt laws and regulations relating to transit passage through straits, in respect of all or any of the following: ... (b) the prevention, reduction and control of pollution, by giving effect to applicable international regulations regarding the discharge of oil, oily wastes and other noxious substances in the strait." Contrast with UNCLOS article 21(1), on innocent passage, discussed above.

164 UNCLOS, article 56(1)(a),(b)(iii); see also UNCLOS at articles 192, 193.

165 Ibid., article 56(2); 58(1),(3).

166 Ibid., article 194.

167 Ibid., article 194(4).

168 UNCLOS, article 58(3).

169 *The Chagos Marine Protected Area Arbitration (Mauritius v UK)*, Award (2015) at paras 519, 534 (Permanent Court of Arbitration). The tribunal provides a framework for factors to consider when balancing the states' rights and interests. It states that "the extent of the regard required by [UNCLOS] will depend upon the nature of the rights held by the [first state], their importance, the extent of the anticipated impairment, the nature and importance of the activities contemplated by the [second state], and the availability of alternative approaches."

together, these articles suggest that coastal states like Canada may enact measures that restrict freedom of navigation, so long as they are justifiable; for example, in the presence of an “objective need” for greater protection that is scientifically proven.¹⁷⁰

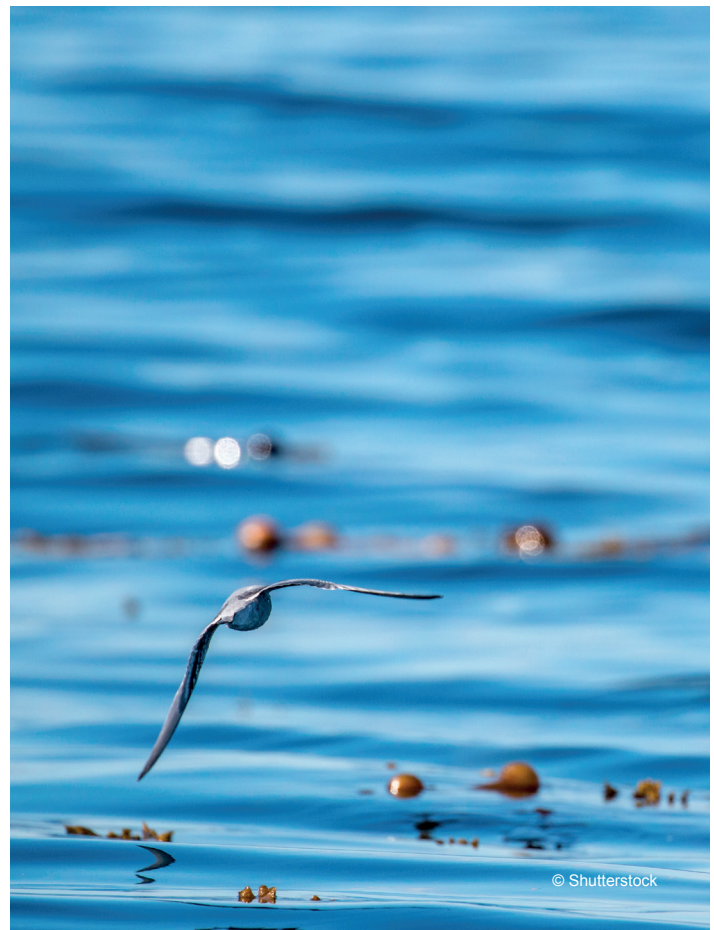
Regardless, coastal states are still able to regulate many of the impacts of shipping that do not interfere with freedom of navigation. For example, Canada can, and does, regulate impacts such as air emissions and discharges of greywater, sewage and ballast water to the limit of the EEZ. These measures are also supported by Article 211 of UNCLOS, which grants coastal states the right within the EEZ to regulate vessel pollution in accordance with international law.¹⁷¹ Within MPAs, these impacts can and should be regulated to the highest international standards. Vessel speed reductions would also be permitted under a narrow reading of UNCLOS, because although they regulate how quickly ships move, they do not interfere with where a ship wants to go. Put another way, freedom of navigation does not provide for unrestricted navigation at the fastest, most convenient or efficient route.

The regulation of navigation within MPAs, particularly in the EEZ, is of growing importance as we become more aware of the serious impacts caused by shipping. UNCLOS does not address the environmental impacts of shipping beyond pollution and dumping. For example, UNCLOS is silent on vessel strikes, underwater noise and, most notably for this report, shipping in protected areas.¹⁷² However, as states reconsider the impacts of shipping on marine life, they are beginning to recognize that “protection of specific sea sites could [and] should entail a ban on navigation.”¹⁷³

Where countries are not willing or able to act unilaterally, they have an even greater duty to seek routing measures and other solutions, such as ships’ routing measures, from the IMO. For example, under UNCLOS article 211, states, acting through the IMO, have a duty to establish international rules and standards to prevent, reduce and control pollution of

the marine environment from vessels and to promote the adopting of appropriate routing systems (more on this below). As states reconsider the impacts of shipping on marine life, they are beginning to recognize that “protection of specific sea sites could [and] should entail a ban on navigation.”¹⁷⁴

Furthermore, where international rules and standards are inadequate to meet special circumstances and coastal states have reasonable grounds to believe that a clearly defined area of the EEZ requires special, mandatory measures for prevention of pollution from vessels, as well as the protection of its resources, the state may, after consultations through the IMO, adopt laws and regulations or prevention, reduction and control of pollution from vessels.¹⁷⁵



170 Fabio Spadi, “Navigation in Marine Protected Areas: National and International Law” (2000) 31:3 *Ocean Development & International Law* 285 at 286 [Spadi].

171 UNCLOS, article 211(5): “Coastal States ... may in respect of their exclusive economic zones adopt laws or regulations for the prevention, reduction and control of pollution from vessels conforming to and giving effect to generally accepted international rules and standards established through the competent international organization or generally diplomatic conference.”

172 de Klemm at 259.

173 Spadi at 287-88.

174 Spadi at 287-88.

175 UNCLOS, article 211.

International Convention for the Prevention of Pollution from Ships

The *International Convention for the Prevention of Pollution from Ships* (MARPOL) is the primary international treaty dealing with prevention of pollution from ships into the marine environment, either through the normal course of their operations or as the result of an accident. It was adopted by the IMO in 1973. A further protocol was adopted in 1978 and the final version of MARPOL, sometimes called “MARPOL 73/78,” entered into force in 1983. MARPOL has six annexes related to:

- Oil pollution (Annex I)
- Control of noxious liquid substances (Annex II)
- Prevention of pollution by harmful substances in packaged form (Annex III)
- Sewage (Annex IV)
- Garbage (Annex V)
- Air pollution (Annex VI).

Canada has adopted most of MARPOL through incorporation in the CSA.

One unique feature of MARPOL is the designation of Special Areas under Annexes I, II, IV, V and VI.¹⁷⁶ A MARPOL Special Area is defined as:

a sea area where for recognized technical reasons in relation to its oceanographical and ecological conditions and to the particular character of its traffic, the adoption of special mandatory methods for the prevention of sea pollution by oil, noxious liquid substances, sewage, or garbage, as applicable, is required.¹⁷⁷

Annexes I, II, IV and V each address Special Areas for a different type of ship-related pollution. Annex VI addresses air emissions through a particular type of Special Area called an Emission Control Area (ECA). Annex VI establishes a cap on the allowable sulfur content allowed in ship’s fuel. The cap is significantly more stringent for ships operating within ECAs.¹⁷⁸

Special Areas may be made so large that they cover the maritime zones of multiple states, and they are afforded a higher level of legal protection than other areas of the sea.¹⁷⁹ There are certain oceanographic and ecological conditions as well as vessel traffic characteristics that must be satisfied for an area to be designated as a MARPOL Special Area.¹⁸⁰

MARPOL sets discharge restrictions for ships passing through ECAs and Special Areas. These limits are difficult to enforce because violators need to be caught in the act of discharging. However, MARPOL does not prohibit navigation within these areas, so environmental impacts such as vessel-strikes, ship groundings and other non-discharge related impacts remain a real possibility.



176 *Revised Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas*, IMO, 1 December 2005, Resolution A.982(24) [Revised Guidelines]; Stephanie Altman, “International Maritime Organization (IMO) Measures for Area-Based Protection,” at 5 [“Altman”].

177 *2013 Guidelines for the Designation of Special Areas Under MARPOL*, IMO, 4 December 2013, Resolution A.1087(28) at), s 2.1. Note that this language closely mirrors the language of Article 211 of UNCLOS.

178 *Ibid.*, s 7.

179 *Ibid.*, s 2.1-2.2.

180 *Ibid.*, s 2.3.

International Convention for the Safety of Life at Sea

The *International Convention for the Safety of Life at Sea* (SOLAS) is a legally binding convention that primarily addresses safety measures for navigation.¹⁸¹ Some SOLAS measures are also pertinent to reducing the environmental impacts of ships. SOLAS has been ratified by 165 states, who are responsible for over 99 per cent of the world's shipping by tonnage.

Chapter V of SOLAS permits the creation of ships' routing systems. Ships' routing systems can include measures to improve safety in two-way routes and can include recommended tracks and deep-water routes. They can also include Areas To Be Avoided (ATBA), which may be designated for reasons including exceptional danger or especially sensitive ecological and environmental factors.¹⁸² Chapter V also recognizes the IMO as the only international body with the competence to develop "guidelines, criteria and regulations on an international level for ships' routing systems."¹⁸³ The different routing measures are laid out in the General Provisions on Ships' Routing, an IMO Resolution. These are discussed further below.

The purpose of routing systems is to help maintain the safety of life at sea, the safety and efficiency of navigation and the protection of the marine environment.¹⁸⁴ Chapter V, Regulation 10 sets out the process for the creation of ships' routing system and their adoption by the IMO.¹⁸⁵ Ship routing systems adopted by the IMO are contained in its *Ship Routing* publications.

In order to establish routing systems under SOLAS, party states submit proposals to the IMO, and the IMO then disseminates the information to other party states.¹⁸⁶ The proposals are studied by the IMO's Subcommittee on Navigation, Communication

and Search and Rescue, who then makes a recommendation on whether it should be referred to the IMO's Marine Safety Committee (MSC) for adoption. The MSC makes the final decision on adoption.¹⁸⁷

States may adopt routing measures without the involvement of the IMO, but where the IMO adopts measures, all states party to SOLAS must adhere to them, and thus, vessels registered within those states must also adhere.¹⁸⁸

Chapter XIV of SOLAS sets out additional safety measures for vessels operating in polar waters and makes the Introduction and Part I-A of the Polar Code mandatory.

Ships' routing measures

As noted above, the General Provisions on Ships' Routing recognizes a number of ships' routing measures that may be designated under Chapter V of SOLAS. These include:

- ATBA
- Traffic separation schemes
- Two-way routes
- Recommended tracks
- No-anchoring areas
- Inshore traffic zones
- Roundabouts
- Precautionary areas
- Deep-water routes.¹⁸⁹

181 International Maritime Organization (IMO), *International Convention for the Safety of Life at Sea*, 1 November 1974, 1184 UNTS 3 at article 1 [SOLAS]; Protocol adopted on 17 February 1978 by the International Conference on Tanker Safety and Pollution Prevention (1978 SOLAS Protocol), which entered into force on 1 May 1981; and Protocol adopted on 11 November 1988 by the International Conference on the Harmonized System of Survey and Certification (1988 SOLAS Protocol), which entered into force on 3 February 2000 and replaced and abrogated the 1978 Protocol.

182 IMO, "Ships Routing" online: imo.org/en/OurWork/Safety/Navigation/Pages/ShipsRouting.aspx

183 *International Convention for the Safety of Life at Sea* (SOLAS), 1974, 1 July 1975, 1184 UNTS 3, Chapter V Regulation 10.2 (entered into force 25 May 1980). SOLAS, regulation 10(2).

184 *Ibid.*, regulation 10(1).

185 *Ibid.*, regulation 10(1)

186 *Ibid.*, regulation 10(4).

187 IMO, "Ships Routing" online: imo.org/en/OurWork/Safety/Navigation/Pages/ShipsRouting.aspx

188 SOLAS, regulation, 10(4),(6).

189 *General Provisions on Ships' Routing*, IMO, 20 November 1985, Resolution A.572(14) at 1-2 ["GPSR"].

These measures may be imposed anywhere in the ocean, including the EEZ, for the purposes of improving safety of navigation and to reduce the risk of pollution or other damage to the marine environment caused by collisions, grounding or anchorage around environmentally sensitive areas.

Historically, ships' routing measures were implemented to enhance the safety of navigation, with environmental protection arising as a corollary feature. It was not until the IMO Assembly adopted *Resolution A.720(17)* in 1991 that the use of ships' routing measures were permitted for purely environmental purposes.¹⁹⁰

It was also once commonly understood that routing measures designed and implemented for environmental protection in the EEZ had to be aimed at preventing pollution.¹⁹¹ Therefore, states needed to demonstrate the effects of ship-source pollution on EEZ resources in order to impose additional rules.¹⁹² However, there is growing support for an interpretation of UNCLOS that permits coastal states to adopt regulations that address broader environmental concerns, flowing from UNCLOS's rights to protect the marine environment and to manage natural resources.¹⁹³ This would include establishing navigational controls for impacts to the EEZ environment not directly associated with pollution, such as ship strikes and acoustic disturbances.¹⁹⁴

Guidelines for the Reduction of Underwater Noise from Commercial Shipping to Address Adverse Impacts on Marine Life

The IMO *Guidelines for the Reduction of Underwater Noise from Commercial Shipping to Address Adverse Impacts on Marine Life* (Guidelines) is an international law intended to help reduce underwater noise from ships, consisting of voluntary guidelines for noise reduction in the marine environment.

It is noteworthy that the Guidelines point out that speed reductions can be effective measures for reducing underwater noise.¹⁹⁵ Also, the Guidelines state that:

Speed reductions or routing decisions to avoid sensitive marine areas including well-known habitats or migratory pathways when in transit will help to reduce adverse impacts on marine life.¹⁹⁶

While the Guidelines are voluntary, these measures could be adopted in Canada to provide additional protection to MPAs, either by inclusion in MPA regulations or as a separate regulation under the CSA.

190 Kristina M Gjerde and David Ong, "Protection of Particularly Sensitive Sea Areas under International Marine Environment Law," (1993) 26:1 *Marine Pollution Bulletin* 9-13 at 11. At the same time, the IMO Assembly requested that the Maritime Safety Committee incorporate the PSSAs and their environmental considerations into the GPSR; see Julian Roberts, "Protecting Sensitive Marine Environments: The Role and Applications of Ships' Routing Measures" (2005) 20 *Int'l J Marine & Coastal Law* 135 at 137, 139 ["Roberts"] at 144.

191 Roberts, *supra* note 191, at 139; see UNCLOS at, articles 56, 211(5).

192 Roberts, *supra* note 191, at 139.

193 Lindy S Johnson, *Coastal State Regulation of International Shipping* (USA: Oceana Publications Inc, 2004) [Johnson] at 106.

194 Roberts, *supra* note 191, at 139.

195 IMO Guidelines, s 10.4.1. Online: imo.org/en/MediaCentre/HotTopics/Documents/833%20Guidance%20on%20reducing%20underwater%20noise%20from%20commercial%20shipping%20C.pdf

196 IMO Guidelines, s 10.5.

GENERAL IMO MECHANISMS FOR ENVIRONMENTAL PROTECTION

An added benefit of IMO designation or similar international designations for ship routing measures, or other environmental protection mechanisms like Particularly Sensitive Sea Areas is that while vessels may not buy Canadian charts, and therefore not be aware of various local designations, an international tool will display these protected areas.

Areas to be avoided

An Area to be Avoided (ATBA) is defined as a “routing measure comprising an area within defined limits in which either navigation is particularly hazardous or it is exceptionally important to avoid casualties and which should be avoided by all ships or certain classes of ships”.¹⁹⁷

The defined limits of an ATBA are occasionally not much larger than the vital lights, buoys and other navigational aids they are designed to protect.¹⁹⁸ Other ATBAs can be large areas designated to protect environmental features like coral reefs or the habitat of an endangered marine animal.¹⁹⁹

The constraints that any routing measure places upon navigation must be limited to what is absolutely necessary, and proposed ATBAs will attract particular scrutiny. A proposed ATBA that would have the effect of impeding navigation through an international strait will not be approved by the IMO.²⁰⁰

At the submission phase, an applicant state will need to demonstrate to the IMO the necessity of the proposed ATBA. ATBAs should generally only be established in places where “unacceptable damage

to the environment could result from a casualty.”²⁰¹ An ATBA should also not be regarded as a prohibited area unless specifically stated. If an ATBA is to be avoided by just a certain class of ships, then each class of ships that needs to avoid the area should be considered individually.²⁰²

Voluntary measures

Like all other IMO routing measures, ATBAs are voluntary rather than compulsory. This is because the “extent of a mandatory routing system should be limited to what is essential in the interest of safety of navigation and the protection of the marine environment.”²⁰³

To date, the only Canadian IMO ATBA is the Roseway Basin, an advisory ATBA located within Canada’s EEZ.²⁰⁴ It was implemented in 2008 to protect the endangered North Atlantic right whales that congregate within the area on a seasonal basis. The Roseway Basin ATBA is viewed as “precedent setting,” as “the first ATBA designed and implemented specifically to reduce risk to an endangered species.”²⁰⁵

The area is to be avoided by vessels of 300 gross tonnage or greater between June 1 and December 31 annually, and it is requested that smaller vessels avoid the area as well.²⁰⁶ Because it is only an advisory ATBA, if navigation through the Roseway Basin ATBA is necessary, vessels are asked to reduce their speed and to make efforts to maneuver around marine mammals.²⁰⁷

In spite of its voluntary nature, research conducted

197 Ibid. at 2.

198 International Hydrographic Organization, “Areas to be avoided,” at s 1.1.1, (accessed Jan 2020), online: iho.int/>/mtg_docs/com_wg/TSMAD/TSMAD25/DCEG/DCEG18_Area_to_be_avoided.pdf

199 Ibid.

200 Ibid., s 3.7.

201 Ibid., s 5.5.

202 Ibid.

203 Ibid., s 9.

204 Angelia S M Vanderlaan and Christopher T Taggart, “Efficacy of a Voluntary Area to Be Avoided to Reduce Risk of Lethal Vessel Strikes to Endangered Whales” (2009) 23:6 Conservation Biology 1467 at 1471 [“Vanderlaan”].

205 Ibid. at 1468.

206 Canadian Coast Guard, *Notice Mariners 1 to 46 – Annual Edition 2019* (Montreal, QC: Canadian Coast Guard, 2019) at 13.

207 Ibid.

on vessel traffic characteristics in and around the Roseway Basin ATBA reveals high levels of compliance within the first year of the ATBA being established: the majority of vessels operating in the area complied, resulting in an estimated 82 per cent reduction in the risk of lethal strikes to right whales within the surveyed area.²⁰⁸

Mandatory measures

The IMO retains the ability to authorize mandatory measures. As noted above, the legal basis for all mandatory IMO measures, whether they are an ECA, MARPOL special area or ship routing measure, can be found in Article 211(6) of UNCLOS.²⁰⁹

In order to establish a mandatory measure, a coastal state must first act through the IMO or general diplomatic conference to establish advisory “international rules and standards to prevent, reduce and control pollution of the marine environment from vessels.”²¹⁰ These advisory rules and standards must then be shown to be inadequate to address the danger of pollution from vessels, necessitating the adoption of special mandatory rules that exceed international rules and standards.²¹¹ This means that mandatory measures are limited to addressing the environmental hazards of vessel-source pollution in areas where advisory rules and standards adopted have proven unsuccessful.

The state must then submit a proposal containing “scientific and technical evidence” to the IMO supporting the argument that “special mandatory measures” are required “for recognized technical reasons in relation to the area’s oceanographical and ecological conditions, as well as its utilization or the protection of [the area’s] resources and the particular character of its traffic.”²¹²

If the state intends to adopt additional rules and standards related to discharge or navigational practices for the same area, those additions must be included in the same proposal, which may “preclude the submission to [the] IMO of any national measure after the initial proposal [for mandatory measures] is considered.”²¹³ The IMO will consider the state’s submission and come to a decision within one year’s time, and the mandatory measures may go into effect as early as fifteen months from the date of submission.²¹⁴ Mandatory IMO routing measures are adopted in accordance with regulation V/10 of SOLAS, and can apply to all ships, certain classes of ships or ships carrying certain cargoes.²¹⁵

The first mandatory ATBA designed and implemented for environmental purposes was proposed to the IMO by the government of New Zealand in 2003.²¹⁶ The ATBA, located within New Zealand’s territorial sea and incorporating the Poor Knights Islands Marine Reserve, is to be avoided by vessels 45 metres in length or more.²¹⁷ Because this ATBA is within New Zealand’s 12NM limit, New Zealand had the option of imposing mandatory ships’ routing measures under UNCLOS Articles 21 and 22 without IMO approval and subject only to the right of innocent passage.²¹⁸

208 Vanderlaan, *supra* note 205 at 1471-1472.

209 UNCLOS, article 211(6).

210 UNCLOS, article 211(1).

211 *Ibid.*

212 *Ibid.* Special mandatory areas adopted pursuant to Article 211(6) are not to be confused with MARPOL 73/78 Special Areas. The measures that may be adopted for MARPOL Special Areas are explicitly defined within the annexes of the MARPOL convention, while special mandatory areas are left to the determination of the coastal state, subject to IMO approval.

213 Johnson at 111; UNCLOS, article 211(6)(c)

214 UNCLOS, article 211(6).

215 *GPSR* at 2.1.2.

216 Roberts, *supra* note 191 at 146.

217 *Ibid.* at 136; Maritime New Zealand, “Shipping Routes-Areas to be Avoided,” online: maritimenz.govt.nz/commercial/environment/operators/documents/areas-to-be-avoided.pdf

218 Roberts, *supra* note 191 at 151.

Particularly Sensitive Sea Areas

Particularly Sensitive Sea Areas (PSSAs) represent one of the most significant protection mechanisms authorized by the IMO. Through *IMO Resolution A.982(24) Revised Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas (PSSAs)*, the IMO may designate an area as a PSSA, which is defined as “an area that needs special protection through action by IMO because of its significance for recognized ecological, socio-economic, or scientific attributes where such attributes may be vulnerable to damage by international shipping activities”.²¹⁹

In order to designate an area as a PSSA, an IMO member state submits an application directly through the Marine Environment Protection Committee (MEPC).²²⁰ The applicant state must provide supporting documents to establish that one of the criteria for PSSAs exists throughout the entire proposed area, though the same criterion need not be present for the entire area.²²¹ This will include a description of how current measures are not effective. The proposed area must also have an identified vulnerability to damage from international shipping and there must be IMO measures that can be adopted to protect the area from such damage.²²²

The potential size limit of a PSSA is indefinite, with every part of the marine environment that meets the required criteria potentially falling under the PSSA designation.²²³ A PSSA may also be surrounded by a buffer zone that contributes to the protection of the core area, assuming a buffer zone can be justified as being a necessary contribution to the protection of the core.²²⁴ As of July 2018, there were fifteen PSSAs designated around the world, including two PSSAs

that were designated and later extended to cover more geographic area.²²⁵

Articles 192, 194 and 211(1) of UNCLOS permit the IMO to designate PSSAs.²²⁶ However, the PSSA designation on its own does not confer any protection to an area. Instead, it permits the adoption of other IMO measures, such as ships’ routing systems or discharge restrictions (discussed further below).²²⁷ Such IMO measures are specifically referred to in the *Revised Guidelines* as Associated Protective Measures (APMs).²²⁸ The MEPC will not formally designate a PSSA until the IMO’s Maritime Safety Committee considers and adopts the proposed APMs.²²⁹ Practically, an application for an APM would be required to be submitted simultaneously with an application for a PSSA.

A state’s application must also identify the legal basis for the proposed APMs, which can be under an existing or future IMO instrument, or pursuant to Article 211(6) of UNCLOS. If the measure is within the territorial sea, it does not require a basis in international law.²³⁰

Alternatively, the *Revised Guidelines* permits the development and adoption of “other measures aimed at protecting specific sea areas against environmental damage from ships, provided that they have an identified legal basis.”²³¹ However, these measures are limited to those that “are to be, or have been, approved or adopted by the IMO.”²³² If a proposed measure is not already available under an existing IMO instrument, the coastal state’s application will need to “set forth the steps that the proposing Member Government has taken or will take to have the measure approved or adopted by IMO pursuant to an identified legal basis.”²³³

219 *Ibid.*; *Revised Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas*, IMO, 1 December 2005, Resolution A.982(24) [*Revised Guidelines*].

220 Altman, *supra* note 177, at 2.

221 *Revised Guidelines*, *supra* note 220, at 4.4.

222 Roberts, *supra* note 191 at 142.

223 *Guidelines for the Designation of Special Areas and Identification of Particularly Sensitive Sea Areas*, IMO, 6 November 1991, Resolution A.720(17) at 15.

224 *Ibid.* at 3.1.5.

225 *List of Special Areas, Emission Control Areas and Particularly Sensitive Sea Areas*, IMO, 2 July 2018, online: gard.no/Content/26411326/IMO%20MEPC1-Circ778-Rev3_Special%20Areas%2C%20ECAs%20and%20PSSAs%20under%20MARPOL.pdf

226 Wolfrum, *supra* note 163 at 6.

227 Roberts, *supra* note 191 at 142.

228 *Revised Guidelines*, *supra* note 220 at 6.1.

229 Altman, *supra* note 177, at 2.

230 *Revised Guidelines*, *supra* note 220 at 7.5.3.

231 *Ibid.* at 6.1.3.

232 *Ibid.* at 6.1.

233 *Ibid.* at 7.1.

APPENDIX A: PROTECTION OPTIONS REFERENCE TABLE (PORT)

The Protection Options Reference Table (PORT) provides an overview of the common shipping impacts and the legislative tools that can be used to address them.

Explanatory Note: Legislative mechanisms or tools have been divided into two types:

- **Active tools** are those that are already used or have been used in the past to address shipping impacts in MPAs or for environmental protection (current to August 2020).
- **Potential tools** are those that have not been used for environmental protection or those that require the use of a regulation-making power. These have the potential to be used to reduce shipping impacts in MPAs.

Ship Stressor	Zone	Law	Mechanisms/ Tools	Commentary	Page
General Mitigation	IW, TS, CZ, EEZ	Oceans Act s. 41(1)	Notice to Mariners	Potential tool: The Canadian Coast Guard provides the Notice to Mariners (NOTMAR). These notices can provide voluntary guidance for vessels operating in MPAs and can include voluntary speed reductions. These notices can also be used to provide additional and important information to vessels navigating near or through MPAs.	23
General Mitigation	IW, TS, CZ, EEZ (varies)	Canada Shipping Act s. 10.1(1)	Interim Ministerial Orders	Active tool: The minister can make an interim order that puts into force any of the regulatory powers available under the CSA for up to one year. Cabinet can extend the order for two additional years or make the order into a regulation.	16-17
General Mitigation	IW, TS, CZ, EEZ (varies)	Canada Shipping Act s. 35.1	Regulations for Protection of the Marine Environment	Potential tool: The minister can create regulations to protect the environment, including measures for procedures and practices for ships, management of shipping and navigation, compulsory and recommended routing and prohibiting and restricting the operation, navigation, anchoring, mooring or berthing of vessels in MPAs.	17-18
General Mitigation	IW, TS, CZ*, EEZ* (Only Canadian Vessels*)	Canada Shipping Act s. 120(1)(k)	Regulations pertaining to Vessel Safety	Potential tool: The minister can make regulations to protect shore areas or environmentally sensitive areas, to regulate or prohibit cargo and to prevent collisions in Canadian waters or the EEZ.	18-19
General Mitigation	IW, TS, CZ, EEZ* (*see section)	Canada Shipping Act s. 136(1)(f)	Regulation related to navigation services	Potential tool: The minister can regulate or prohibit navigation, anchoring, mooring or berthing of vessels for the purpose of safe and efficient navigation. The regulation must be in the interest of the public and the environment.	19
General Mitigation	IW, TS, CZ, EEZ (in Arctic waters)	Arctic Waters Pollution Prevention Act s. 12(1)	Shipping standards for shipping safety control zones	Potential tool: The minister can create more stringent standards for ships to meet in shipping safety control zones in which there are MPAs; failure to meet those standards would prohibit their entry.	27-28

Ship Stressor	Zone	Law	Mechanisms/ Tools	Commentary	Page
General Mitigation	IW, TS, EEZ, Arctic Waters	Canada Shipping Act, Oceans Act s. 41.	Regulations related to aids to navigation	Potential tool: Allows the creation of aids to navigation that would mark sensitive areas for the benefit of ships and pilots.	18, 22
General Mitigation	TS, CZ, EEZ	SOLAS with guidance from IMO	Ships' routing measure	Potential tool: Ship routing measures can be designated under SOLAS and can include measures designed to reduce or eliminate ships passing through MPAs.	34-35
General Mitigation	TS, CZ, EEZ	SOLAS with guidance from IMO	Area to be Avoided	Potential tool: A routing measure to create an area, including one with important environmental features, to be avoided completely by all ships, or classes of ships.	35-36
General Mitigation	TS, CZ, EEZ	IMO Resolution A.982(24)	Particularly Sensitive Sea Area	Potential tool: Designation of a PSSA occurs through the IMO. Once the designation is approved for an area needing special protection because of recognized ecological, socio-economic or scientific attributes, a coastal state may create additional mechanisms to protect the area, such as routing systems and additional discharge restrictions.	37-38
Benthic Disturbance: Anchorage	IW, TS, CZ, EEZ	CSA – Anchorage Regulations ss. 2, 3	Restriction or prohibition on anchorage	Potential tool: This regulation, created under the CSA, prohibits anchorage in areas that are included by the minister in the schedule. MPAs can be added to the schedule.	19
Acoustic Disturbance	TS, CZ, EEZ	IMO Guides for the Reduction of Underwater Noise from Commercial Shipping to Address Adverse Impacts on Marine Life	Adoption of guidelines	Potential tool: The voluntary measures set out in the guidelines might be adopted into MPA regulations or under the CSA, whether as voluntary or mandatory measures within MPAs.	37
Acoustic Disturbance	TS, CZ, EEZ	International Maritime Organization	Particularly Sensitive Sea Area	Potential tool: The IMO recognizes noise broadly as pollution, and a PSSA could protect MPAs where species are especially vulnerable to commercial shipping.	40-41
Discharge: Dangerous Chemicals	IW, TS, CZ, EEZ	CSA: Vessel Pollution and Dangerous Chemicals Regulations	Prohibition on discharges	Potential tool: Prohibition of discharges in MPAs, but this would require an amendment to the regulations to create the prohibition for MPAs.	22
Discharge: Noxious Substances	TS, CZ, EEZ	MARPOL; Canada Shipping Act	Special Area designation	Potential tool: Area designated under MARPOL Annex II to address impacts of noxious substances (as defined under that treaty and in CSA).	32-33
Discharge: Pollutants	IW, TS, CZ, EEZ	Canada Shipping Act, ss. 175.1 and 189	Vessel Routing	Potential tool: Minister has the power to reroute vessels that are carrying, discharging or at risk of discharging a pollutant, or to require vessels to follow specific routes. This could include rerouting in or around MPAs.	21
Discharge: Garbage	TS, CZ, EEZ	MARPOL; Canada Shipping Act	Special Area designation	Potential tool: Area designated under MARPOL Annex V to address garbage.	32-33

Ship Stressor	Zone	Law	Mechanisms/ Tools	Commentary	Page
Discharge: Ballast Water	IW, TS, CZ, EEZ	CSA: Ballast Water Control and Management Regulations	Prohibition or restriction on ballast water exchange	<p>Potential tool: Removal of all ballast water exchange areas from existing or future MPAs.</p> <p>Potential tool: Require minimum distances for ballast water exchange or exchange zones from MPAs.</p> <p>Active tool: Minimum depth for allowances of ballast water exchange within or near MPAs (see Bowie Seamount MPA).</p>	20-21
Discharge: Greywater	IW, TS, CZ, EEZ*	CSA: Vessel Pollution and Dangerous Chemicals Regulations s. 131.1(4)	Prohibition on greywater release	<p>Active Tool: Create full prohibition on greywater discharge.</p> <p>The Banc-des-Américains MPA Regulations prohibits the release of greywater.</p> <p>*Does not apply in “Arctic Waters”</p>	22
Discharge: Sewage	TS, CZ	CSA: Vessel Pollution and Dangerous Chemicals Regulations s. 131.1, Schedule 2 (Designated Sewage Areas)	Designated sewage area	<p>Potential tool: Designation of current or future MPAs as Designated Sewage Areas to require higher standards (of coliform rates) for sewage that is discharged in those MPAs.</p> <p>There is currently a complete prohibition on sewage discharge in internal waters.</p>	23
Discharge: Sewage	TS, CZ	CSA: Vessel Pollution and Dangerous Chemicals Regulations s. 131.1	Prohibition on sewage discharge	<p>Potential tool: An amendment to the regulation would allow for a complete prohibition of sewage discharge in MPAs.</p> <p>There is currently a complete prohibition on sewage discharge in internal waters.</p>	23
Discharge: Sewage	TS, CZ, EEZ	MARPOL; Canada Shipping Act	Special Area designation	Potential tool: Area designated under MARPOL Annex IV to address discharges of sewage (as defined under that treaty and in CSA).	32-33
Discharge: Disposals	IW, TS, CZ, EEZ	Oceans Act; CEPA: Disposal at Sea Permit Application Regulations	Prohibition on disposal at sea in MPAs	Potential tool: The minister must consider sensitive areas before issuing disposal permits. A prohibition on disposal at sea could prevent disposal in MPAs.	25-26
Air Emissions: Sulphur	TS, CZ, EEZ	MARPOL; Canada Shipping Act	Emission Control Area	Potential tool: Area designated under MARPOL Annex VI that establishes a cap on the allowable sulfur content in ship’s fuel.	32-33

APPENDIX B: INTERNATIONAL CONVENTIONS RELEVANT TO SHIPPING

Convention	Description
International Convention on the Control of Harmful Anti-Fouling Systems on Ships (AFS Convention)	<p>Parties to the AFS Convention must undertake to give it full and complete effect to reduce or eliminate adverse effects of anti-fouling systems on the marine environment and human health.²³⁴</p> <p>Anti-fouling systems are defined as any coating, paint, surface treatment, surface or device that is used by a vessel to control or prevent attachment of undesirable organisms.²³⁵ They are prohibited or restricted under Article 4 of the convention. However, the AFS Convention is clear that none of its provisions must prejudice the rights and obligations of any state under customary international law as reflected in UNCLOS.²³⁶ This means that UNCLOS takes precedence where protections, rights or obligations conflict.</p>
Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention)	<p>The objective of the London Convention is to promote international efforts for control of all sources of marine pollution and to prevent pollution of the sea by dumping.²³⁷ There are currently 87 parties to the London Convention.</p> <p>In 1996, the London Protocol was created to further amend the convention; it eventually replaced it, upon ratification.²³⁸ There are currently 51 parties to the London Protocol. The protocol is meant to apply to all vessels in the ocean territory of a contracting party.²³⁹</p> <p>All ocean dumping is prohibited unless it is exempted. Dumping includes the deliberate disposal at sea of wastes or other matter from vessels.²⁴⁰ However, it does not include disposal at sea of wastes or matter that is incidental to or derived as a result of the normal operations of those vessels and does not cover disposal of wastes from offshore processing of sea-bed mining resources.²⁴¹</p> <p>The London Protocol also requires parties to prohibit the incineration at sea of wastes or other matter.²⁴² The convention and protocol do not apply in emergency situations or where it is necessary to secure the safety of human life or of vessels.²⁴³</p>

²³⁴ International Maritime Organization, *International Convention on the Control of Harmful Anti-Fouling Systems on Ships* entered into force on 17 Sept 2008 at article 1 [AFS Convention].

²³⁵ AFS Convention at article 2(2); see also IMO, “Anti-Fouling Systems” online: imo.org/en/OurWork/Environment/Anti-foulingSystems/Pages/Default.aspx

²³⁶ AFS Convention at article 15.

²³⁷ See *Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter* 26 UST 2403, 1046 UNTS 120, 11 ILM 1294 (1972) at articles I and II [London Convention]; *1996 Protocol to the London Convention* 1972 36 ILM 1 (1997) at article 2 [London Protocol].

²³⁸ London Protocol at article 23.

²³⁹ London Protocol article 10.

²⁴⁰ London Convention at article III (1)(a); London Protocol at article 1 (4.1).

²⁴¹ London Convention at article III (1)(b), (c); London Protocol at article 1 (4.2).

²⁴² London Protocol at article 5.

²⁴³ *Ibid.* article 8.

Convention	Description
International Convention on Salvage	<p>This convention sets out an international framework for salvage operations, which is the process of recovering, in part or in whole, a damaged ship or its cargo. This Convention has been largely given effect in Canada under the Canada Shipping Act. It applies to any salvage operations other than contracts that provide otherwise, expressly or by implication.²⁴⁴</p> <p>The International Convention on Salvage creates a legal duty for the salvor (the party performing the salvage operations) to the owner of the vessel or property in danger to carry out the salvage operations with due care. Part of that duty includes the duty to exercise due care to prevent or minimize damage to the environment.²⁴⁵ The convention does not allow a contract to exclude this duty of care owed to prevent or minimize damage to the environment.²⁴⁶</p> <p>Under the convention, “damage to the environment” means “substantial physical damage to human health or to marine life or resources in coastal or inland waters or areas adjacent thereto, caused by pollution, contamination, fire, explosion or similar major incidents.”²⁴⁷</p> <p>The convention also sets out rights of a coastal state to take measures, in accordance with generally recognized principles of international law, to protect its coastline or related interests from pollution or the threat of pollution following a marine casualty. This can include the right to give directions in relation to salvage operations.²⁴⁸</p>
International Regulations for Preventing Collisions at Sea (COLREGS)	<p>The COLREGS were adopted in 1972 and are meant to prevent ship impacts and collisions. They apply to all vessels in navigable waters.²⁴⁹ They set out a number of rules that are related to ensuring the prevention of collisions of vessels at sea. Many of the rules are concerned with technical details like the number, position, range and arc of visibility of lights, beacons and other aids to navigation or the disposition and characteristics of sound-signaling.²⁵⁰ The COLREGS also allow for traffic separation schemes to be adopted by the IMO for the purposes of preventing collisions at sea.²⁵¹</p> <p>The rules deal largely with things like proper fixture and use of lights in various situations, vessel-to-vessel rules of engagement (maintaining visibility while maneuvering around each other), use of sound signals, etc. This includes a section in Annex I of the COLREGS for colour specification of lights (chromaticity) and the intensity of lights. Annex III deals with the “technical details of sound signal appliances,” including frequencies and range of audibility of whistles (1), bells or gongs (2). Annex IV deals with distress signals.</p>
International Management Code for the Safe Operation of Ships and for Pollution Prevention	<p>This code was adopted as part of the International Safety Management Code (ISM Code) on 4 November 1993. The ISM Code provides an international standard for the safe management and operation of ships and for pollution prevention.²⁵²</p>
International Code for Ships Operating in Polar Waters (Polar Code)	<p>An agreement created under the auspices of the IMO that entered into force in 2017. It is a mandatory agreement under MARPOL and under SOLAS. The Polar Code is a technical code with many provisions related to all manner of shipping. It deals with ship design and equipment, safe navigation, voyage planning and training. Part II of the Polar Code deals with the pollution prevention measures found in MARPOL, but in the context of Arctic waters.</p> <p>Many of the provisions and protections in the Polar Code have been incorporated into Canadian law through regulation created under the Canada Shipping Act and the Arctic Waters Pollution Prevention Act.</p>

244 *International Convention on Salvage, 1989* 1953 UNTS 165; S. Treaty Doc. No. 102-12, 102d Cong., 1st Sess. (1991) at article 6(1) [Convention on Salvage].

245 *Convention on Salvage* at article 8.

246 *Ibid.* at article 6(3).

247 *Ibid.* at article 1(d).

248 *Ibid.* at article 9.

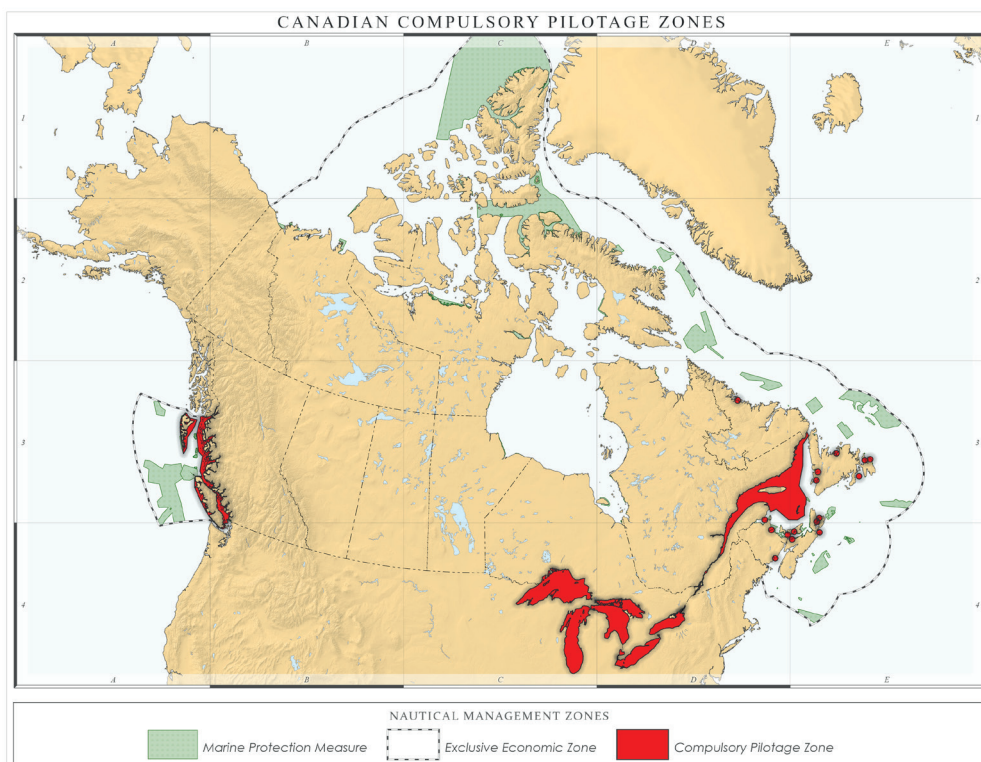
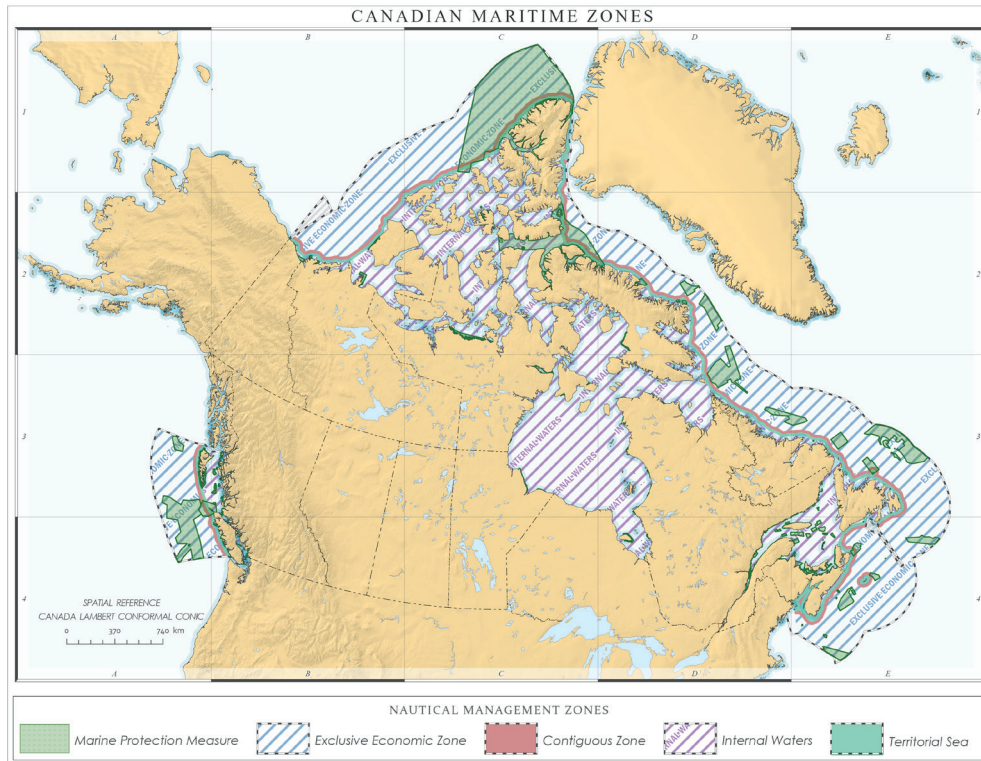
249 *Convention on the International Regulations for Preventing Collisions at Sea, 1972* 1050 UNTS 16; 28 UST 3459 at article 1, rule 1(a) [COLREGS].

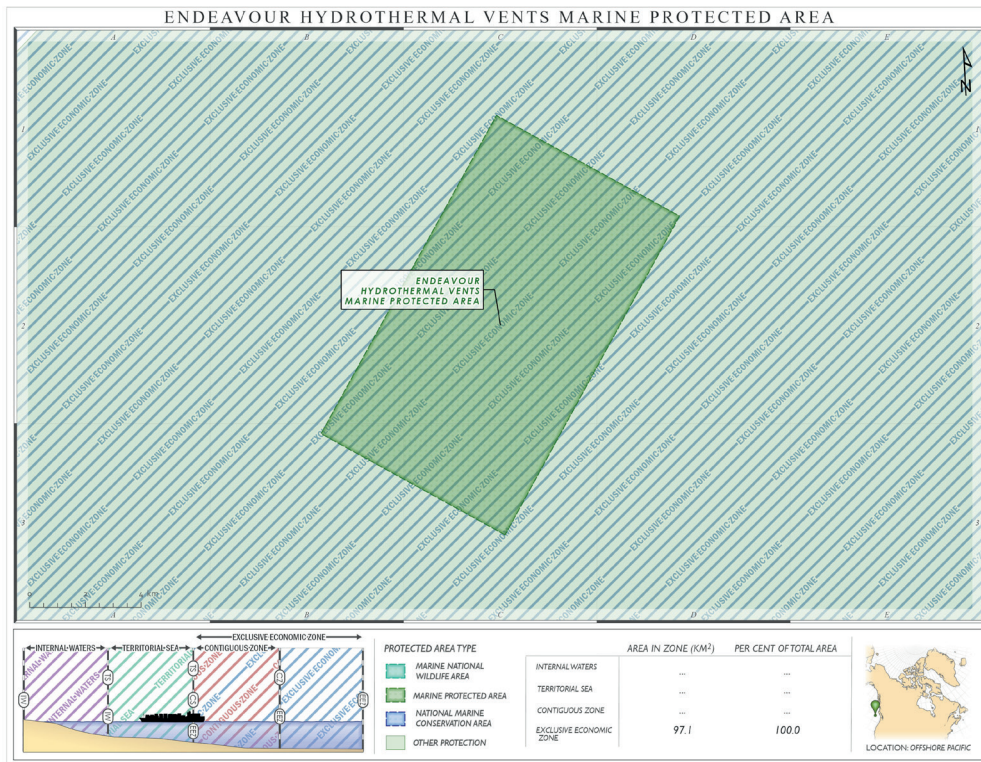
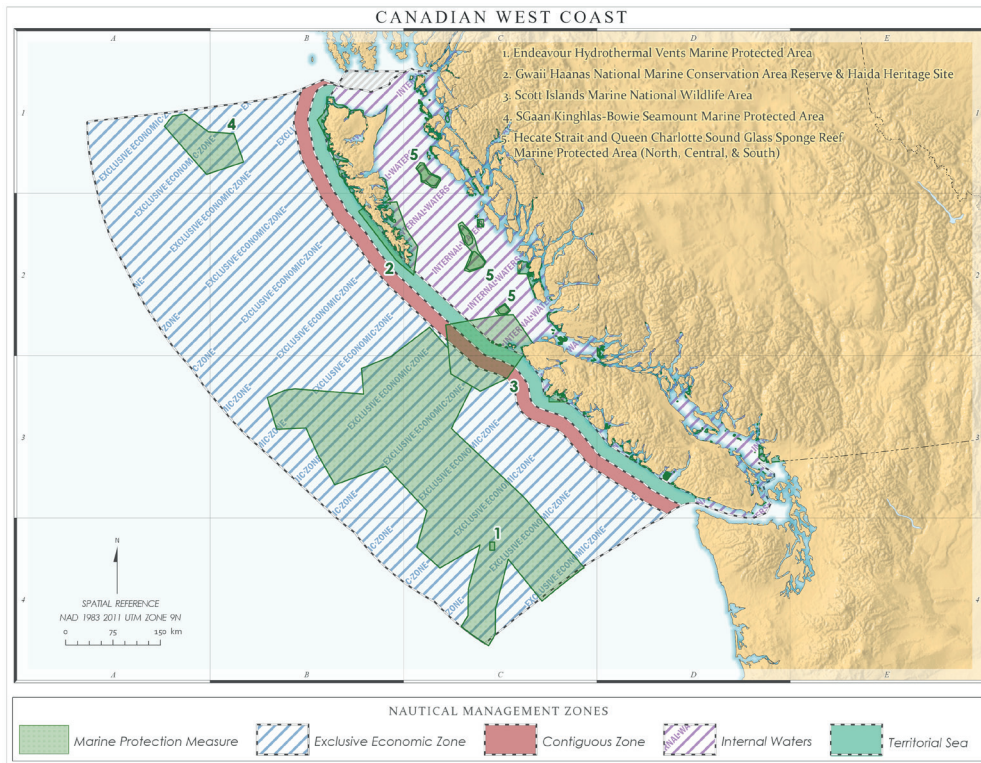
250 COLREGS at article 1.

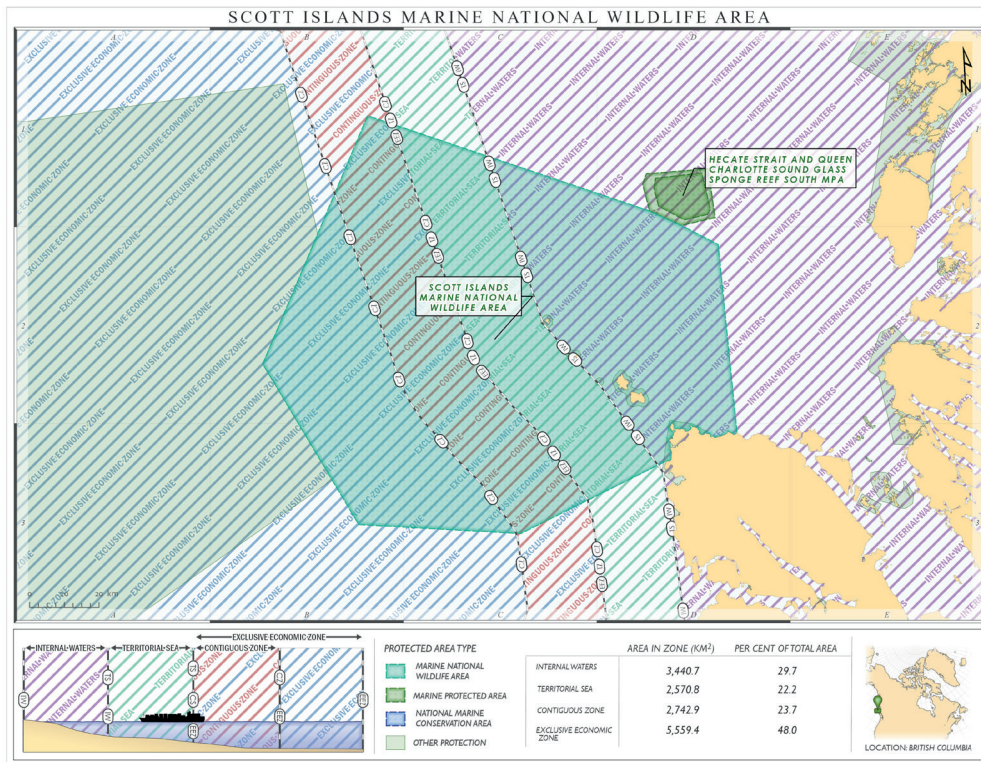
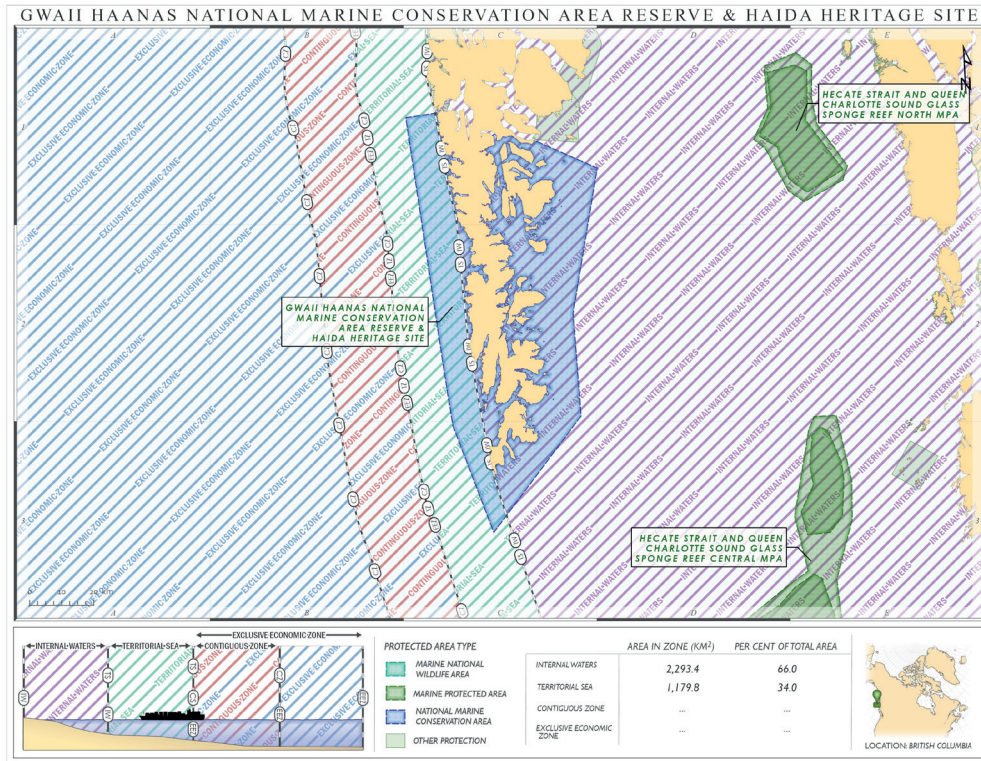
251 COLREGS at article 1 rule 1(d).

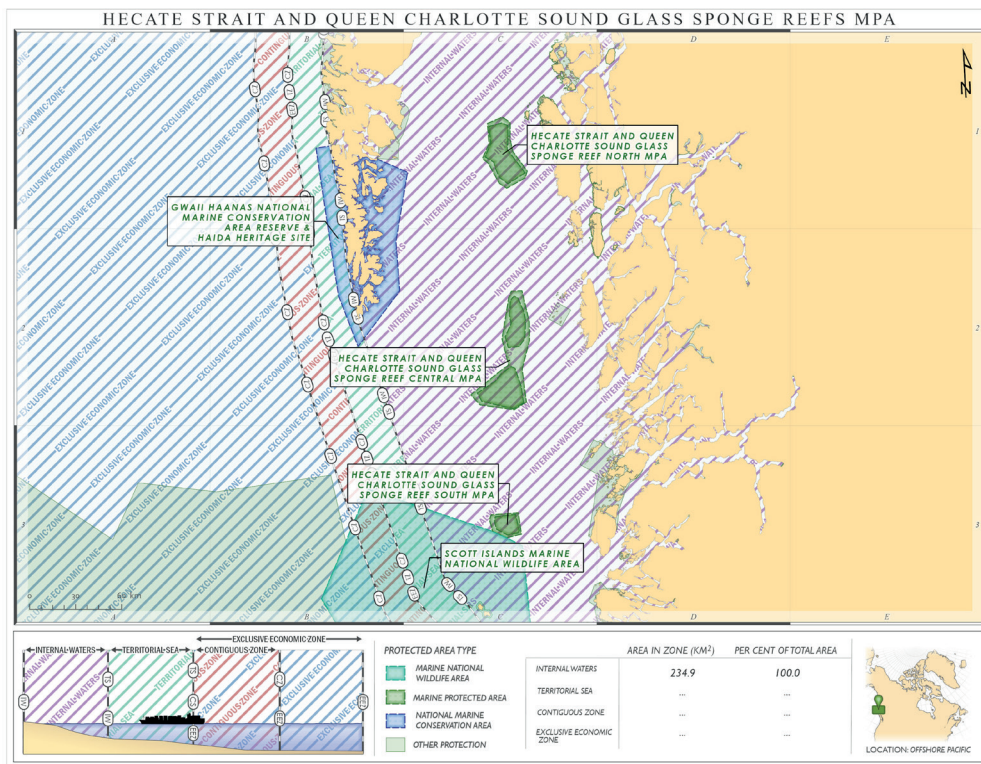
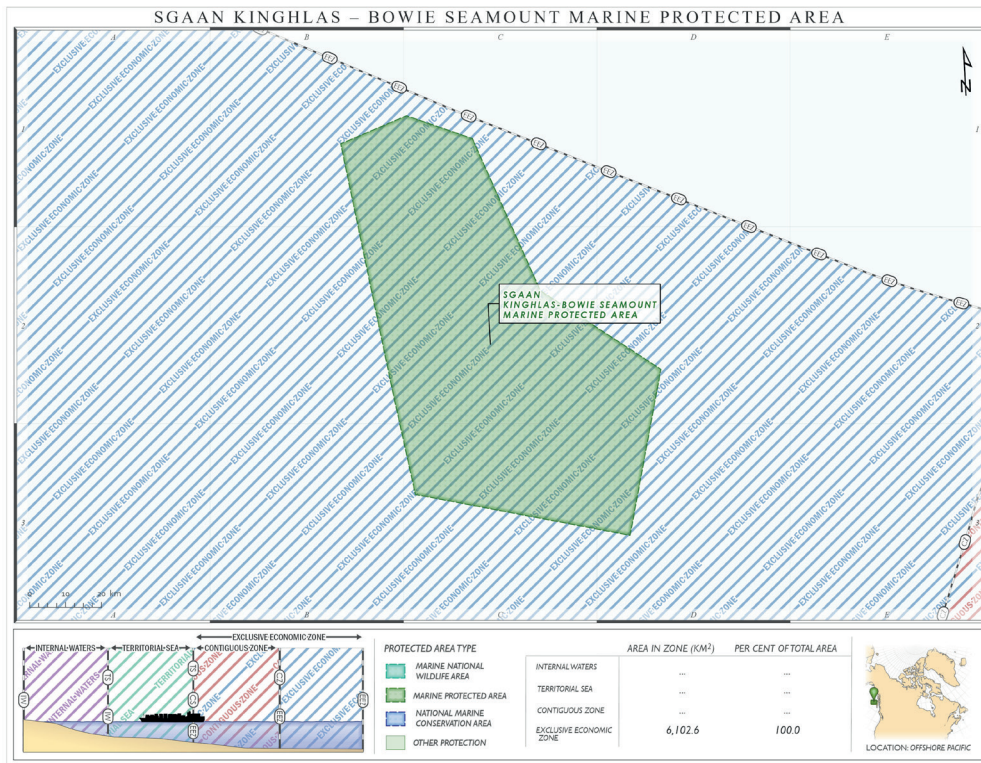
252 The International Safety Management Code IMO Assembly Resolution A.741(18) - 1993 at s. 1.

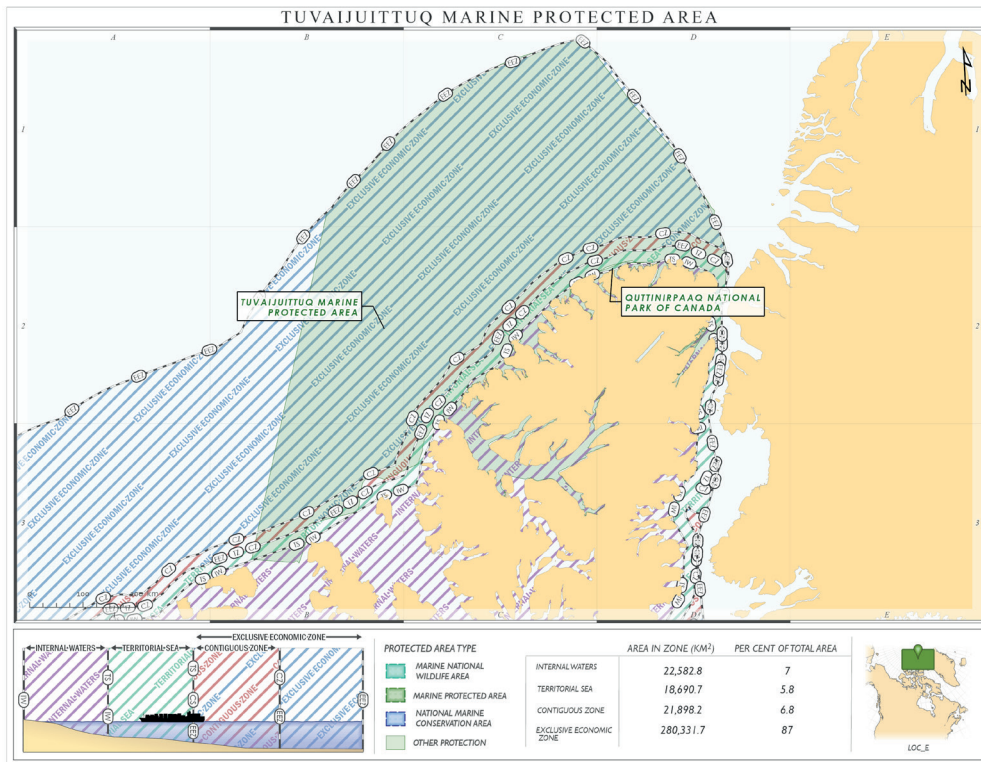
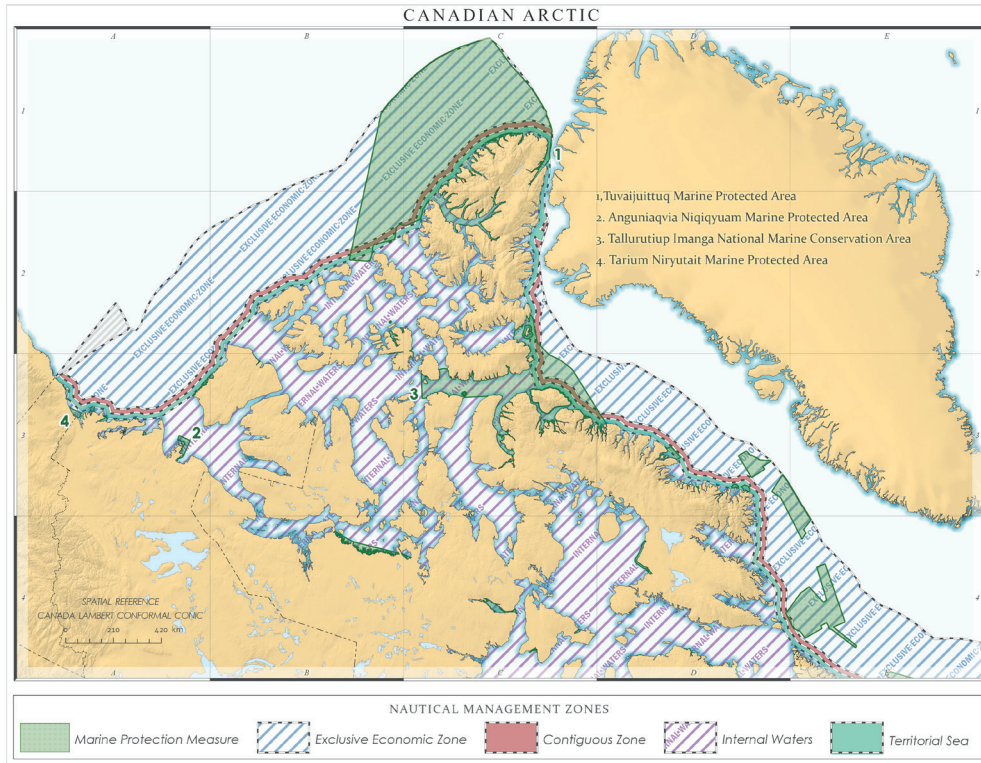
APPENDIX C: MAPBOOK OF MARITIME ZONES FOR MPAS IN CANADA

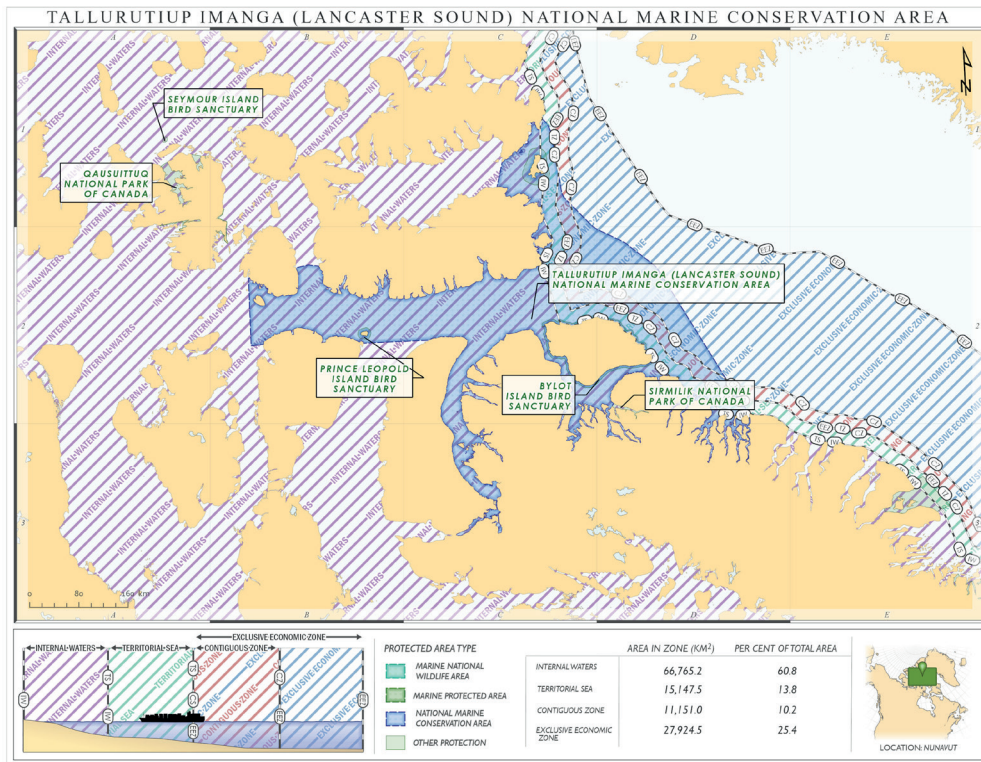
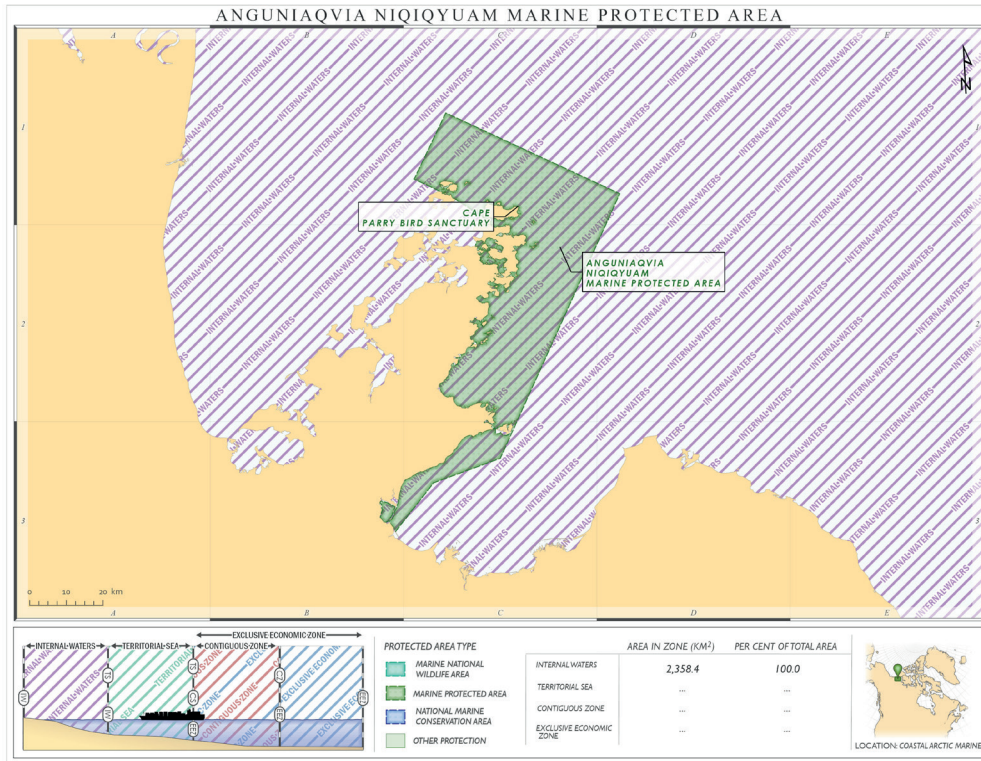


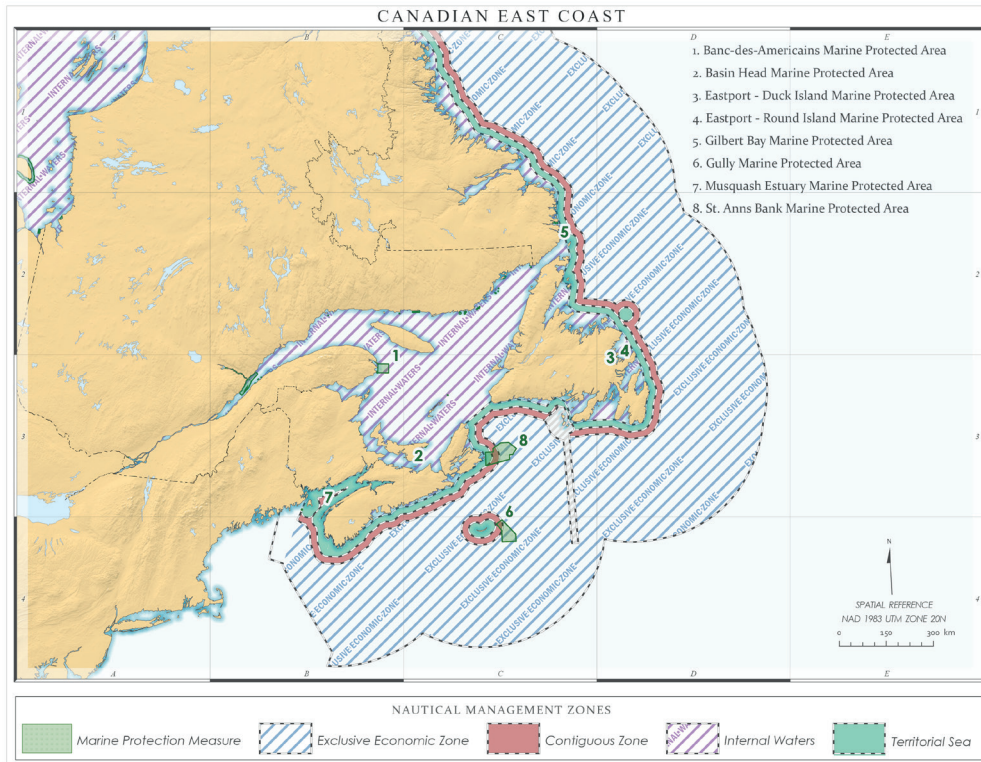
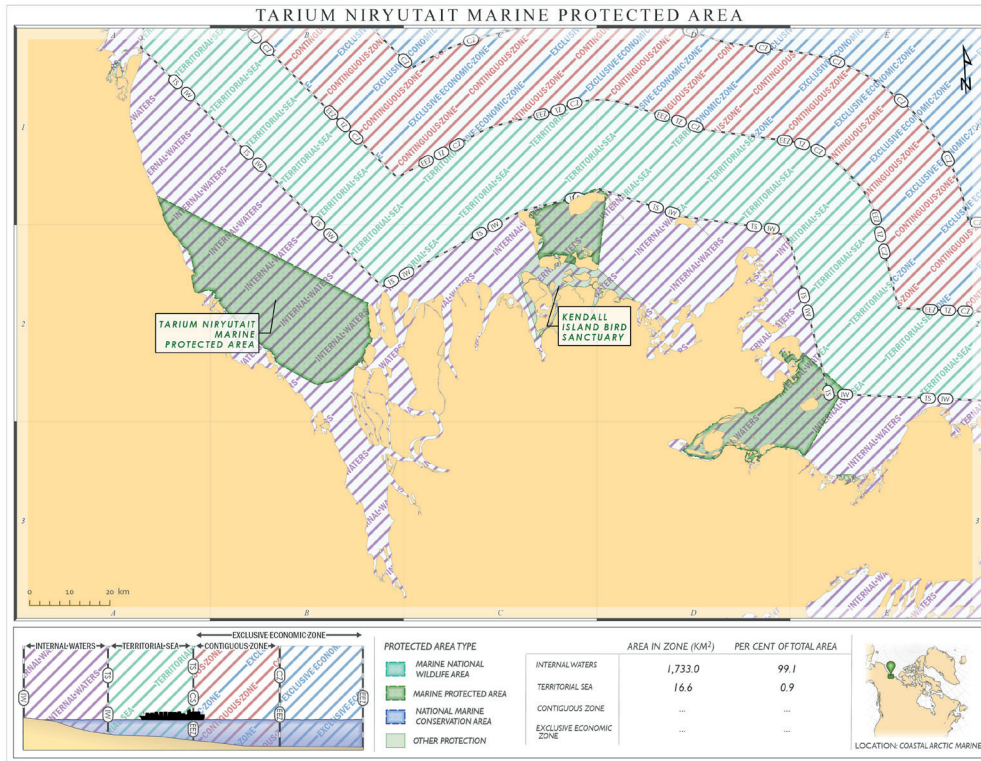


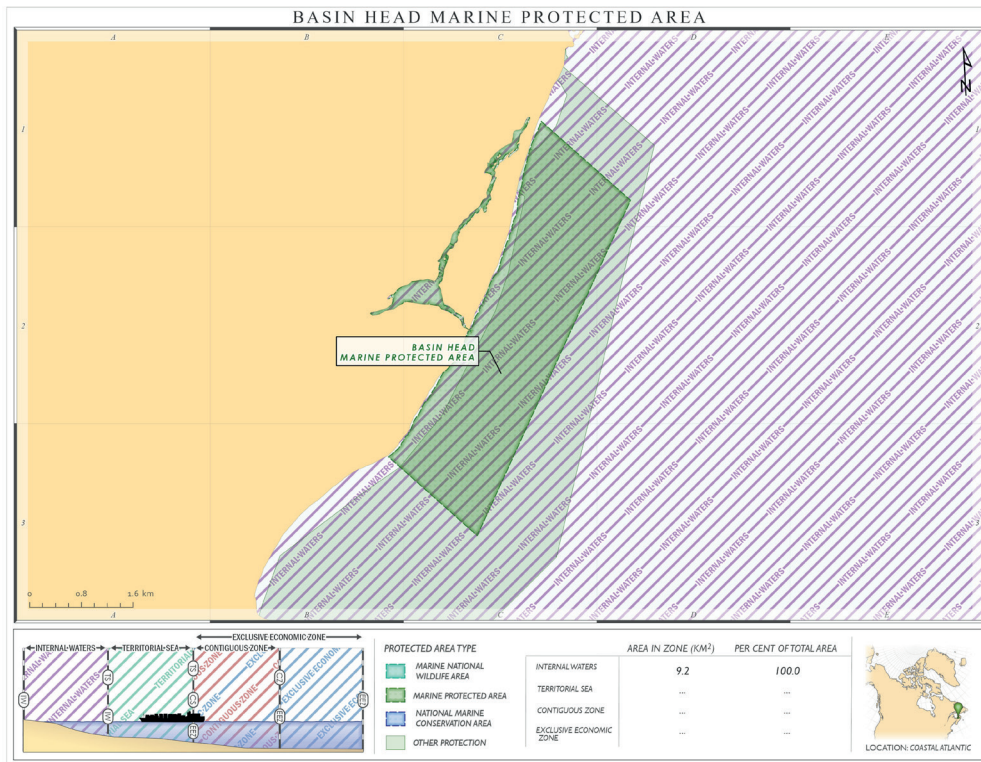
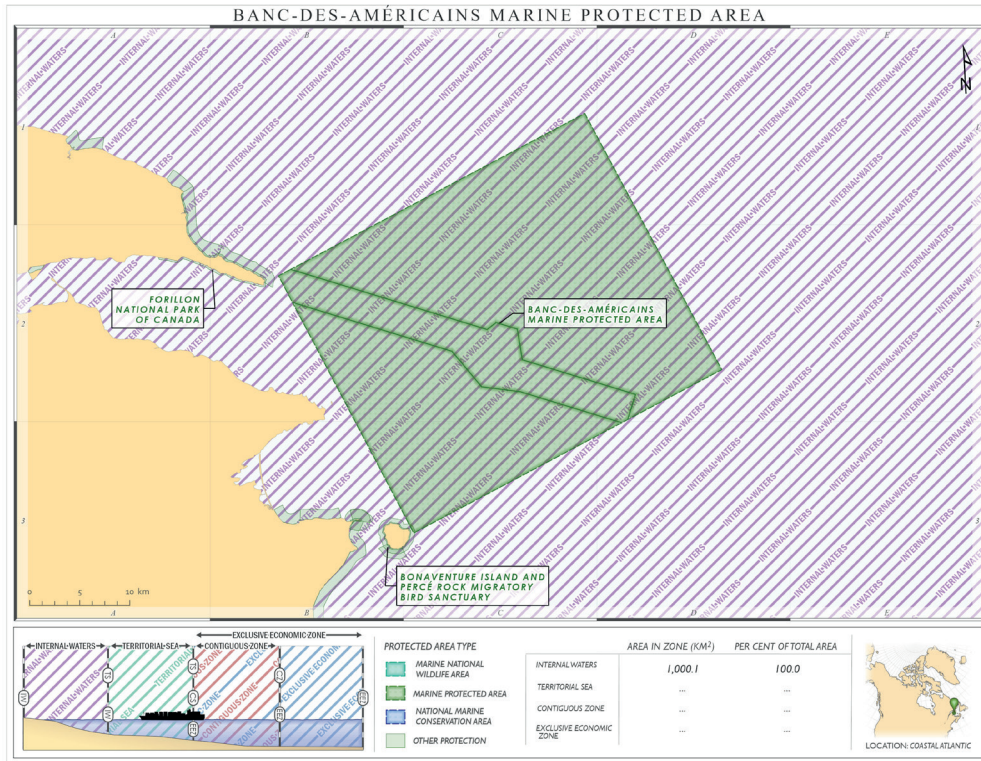


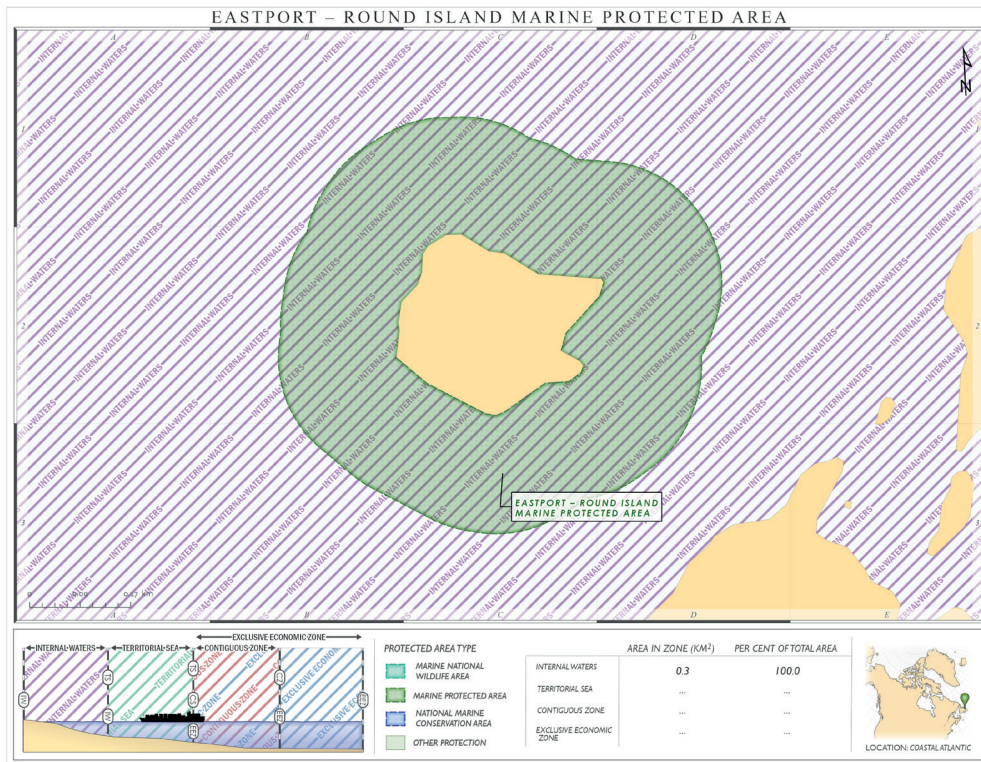
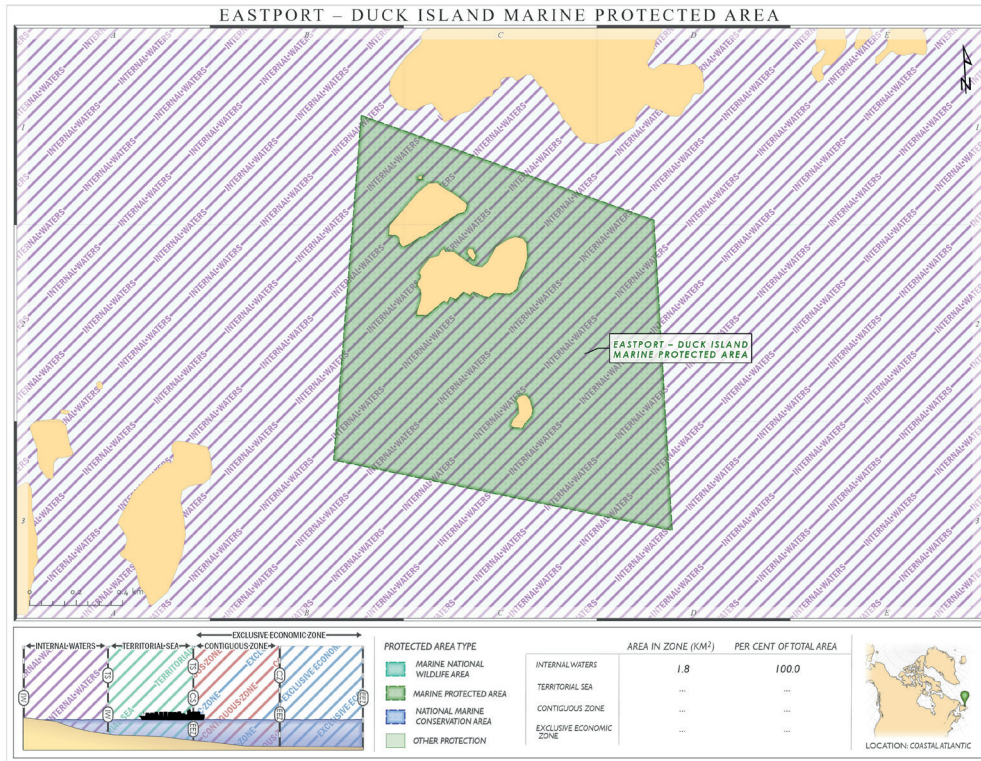


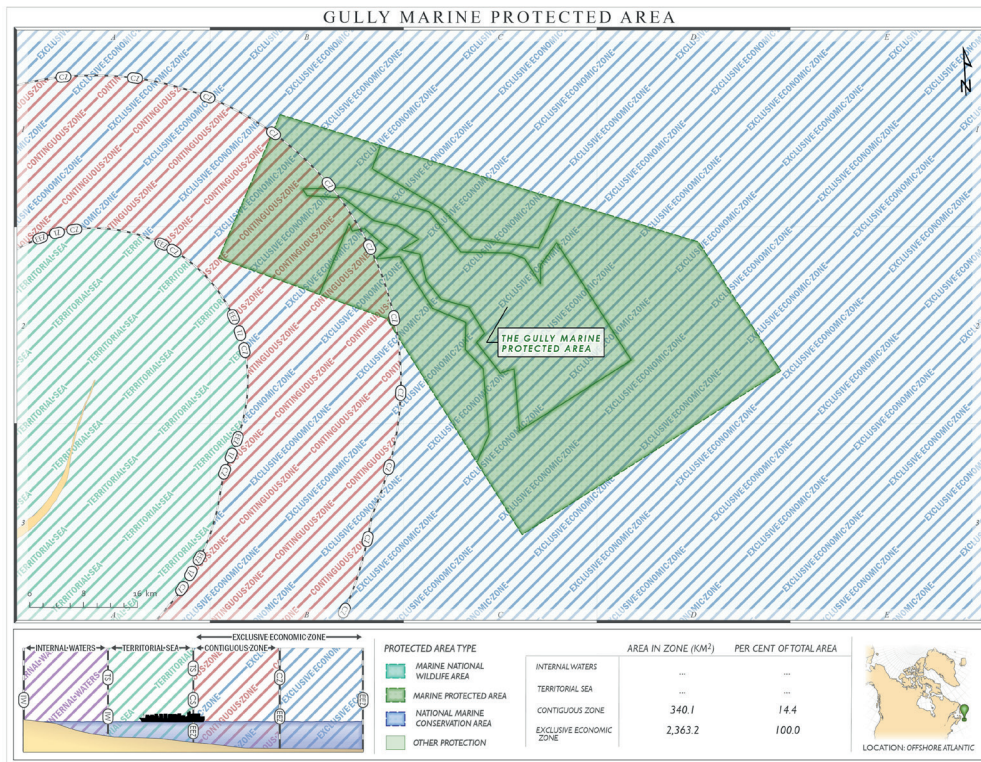
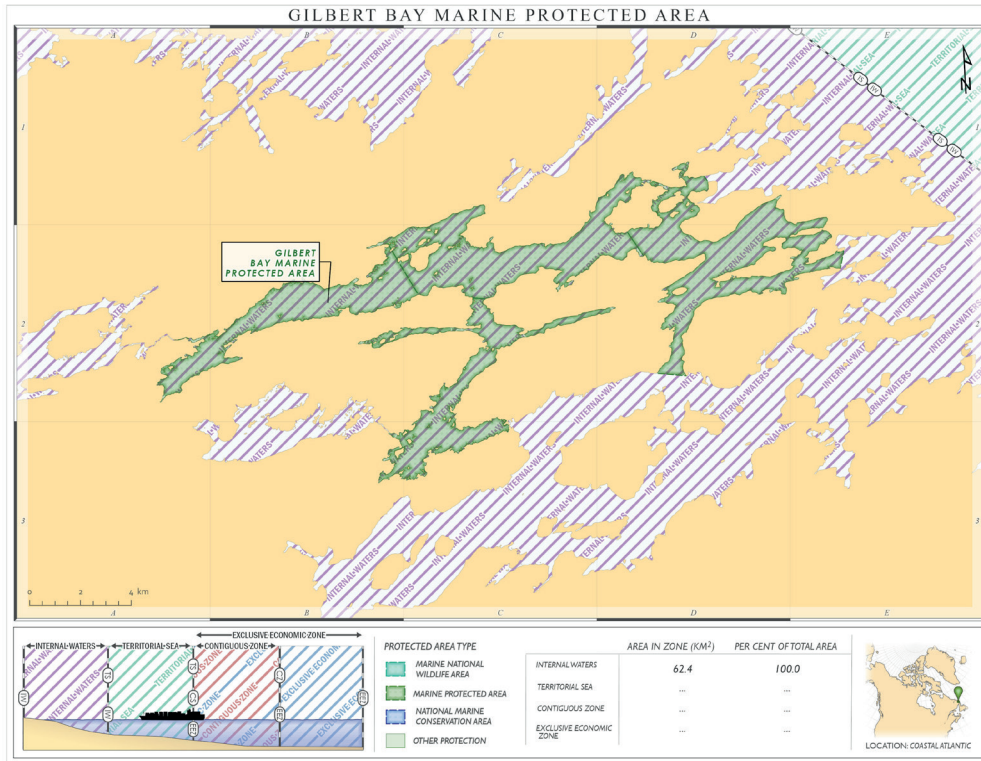


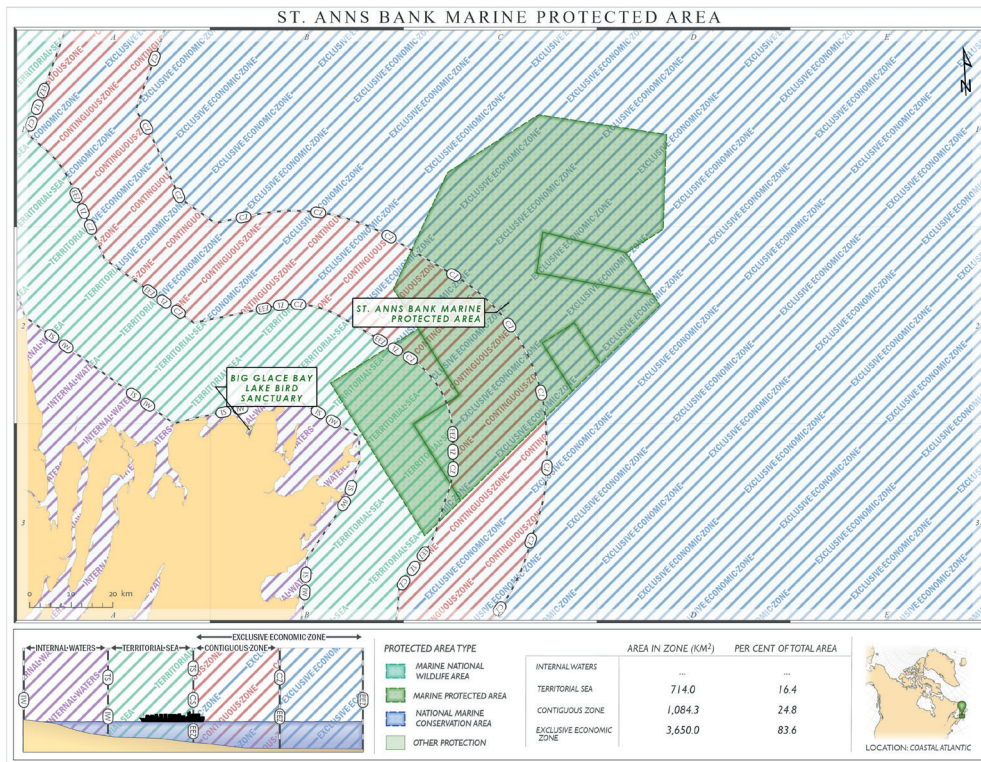
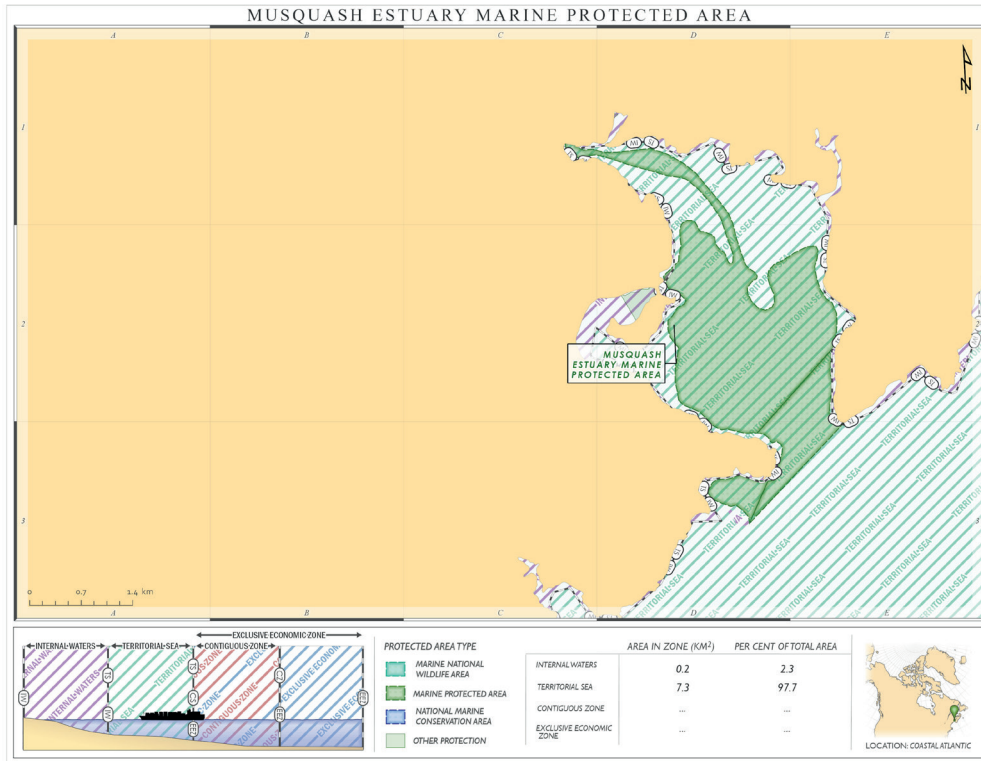












GLOSSARY OF TERMS

AOI	Area of interest
ATBA	Area to be Avoided
AWPPA	<i>Arctic Waters Pollution Prevention Act</i>
CCG	Canadian Coast Guard
CEPA	<i>Canadian Environmental Protection Act, 1999</i>
CSA	<i>Canada Shipping Act, 2001</i>
DFO	Fisheries and Oceans Canada
ECA	Emission Control Area
ECCC	Environment and Climate Change Canada
EEZ	Exclusive Economic Zone
IMO	International Marine Organization
IW	Internal waters
MARPOL	<i>International Convention for the Prevention of Pollution from Ships</i>
mNWA	Marine National Wildlife Area (<i>Canada Wildlife Act</i>)
MPA	Marine Protected Area (<i>Oceans Act</i>) or marine protected area (general)
NM	Nautical miles
NMCA	National marine conservation area (<i>Canada National Marine Conservation Areas Act</i>)
NOTMAR	Notice to Mariners
NWA	National Wildlife Area (<i>Canada Wildlife Act</i>)
NRCAN	National Resources Canada
PRO	Pollution Response Officer (created under the CSA)
PSSA	Particularly Sensitive Sea Area
SOLAS	<i>International Convention for the Safety of Life at Sea</i>
SRKW	Southern Resident Killer Whale
TC	Transport Canada
TS	Territorial sea
UNCLOS	<i>United Nations Convention on the Law of the Sea</i>

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