WWF REPORT 2013

ARCTIC

AN OVERVIEW OF FEDERAL INSTRUMENTS FOR THE PROTECTION OF THE MARINE ENVIRONMENT IN CANADA

Through the creation of Marine Protected Areas and other Spatial Conservation Mechanisms

WWF-Canada

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ACRONYMS	MEANING
AOI	Area of Interest
CBD	United Nations Convention on Biological Diversity
CCEA	Canadian Council on Ecological Areas
CNMCA Act	Canada National Marine Conservation Areas Act
COP	Conference of the Parties
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CPAWS	Canadian Parks and Wilderness Society
CSAS	Canadian Science Advisory Secretariat
CWS	Canadian Wildlife Service
DFO	Department of Fisheries and Oceans
EBSAs	Ecologically and biologically significant areas
EC	Environment Canada
EEZ	Exclusive economic zone
ESCPs	Ecologically significant community properties
ESSs	Ecologically significant species
FAO	Food and Agriculture Organization of the United Nations
IMO	International Maritime Organization
IUCN	International Union for the Conservation of Nature
LOMA	Large ocean management area
MARPOL	International Convention for the Prevention of Pollution From Ships
MEPC	Marine Environment Protection Committee
MERA	Mineral and Energy Resource Assessment
MPAs	Marine Protected Areas
MWAs	Marine Wildlife Areas
NGOs	Non-governmental organizations
NMCA	National Marine Conservation Area
NWAs	National Wildlife Areas
PC	Parks Canada
PSSAs	Particular Sensitive Sea Areas
RAMSAR	Convention on Wetlands of International Importance
RIAS	Regulatory Impact Analysis Statement
SARA	Species at Risk Act
SOLAS	International Convention for the Safety of Life at Sea
UNCLOS	United Nations Convention on the Law of the Sea
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNGA	United Nations General Assembly
VCLT	Vienna Convention on the Law of Treaties
VMEs	Vulnerable marine ecosystems
VTS	Vessel Traffic Services
WCPA	World Commission on Protected Areas
WHC	World Heritage Committee

INTRODUCTION

Marine conservation is an issue that is receiving increasing attention and interest, both internationally and in Canada. And nowhere is the need for conservation measures more evident than in the Arctic, where climate change is rapidly transforming the Arctic Ocean, bringing changes to ecosystems that are not yet fully known. At the same time, an increasingly ice-free ocean allows for enhanced access, and new developments and transportation routes – and therefore increased risk of impacts on an already stressed environment. Anticipating and managing these transformations, while conserving the resilience of Arctic ecosystems, will require significant new conservation measures, including spatially explicit zones where the potential negative impacts of development are carefully managed.

WWF has developed this report so as to gain a better understanding of the full range of legislative and policy tools that support marine conservation in Canadian waters. Several instruments exist, under the jurisdiction of a variety of federal agencies, and each instrument has its own characteristics, each distinct in terms of its scope, its establishment process, its strengths (namely, what it protects) and its limitations (namely, what it does not protect).

The terms “strengths” and “limitations” are used here without the intention of passing absolute judgment over these instruments. Different instruments have been developed in order to accomplish a variety of legitimate objectives. One instrument is not necessarily “better” than another that has been devised for a different purpose. It’s rather a case of selecting the right instrument to achieve a desired conservation objective, and this report has been developed to help identify the best conservation tool for any particular objective, whatever that objective may be.

We have focused on measures that are spatially explicit, while recognizing that other policy tools exist that also have an impact (positive and/or negative) on marine conservation. As well, we have restricted ourselves to measures that apply in Canadian waters. Some are based on international agreements, but in those cases we’ve focused on the federal enabling instrument that implements these international agreements in Canadian waters.

This report does not presume to be an exhaustive inventory of marine conservation measures, which would result in a much larger and more complicated document. Not included is any consideration of specific measures available under provincial or territorial jurisdiction, and which allow for spatially explicit conservation measures in marine waters. Likewise, we have not attempted to define or limit the extent to which the rights and interests of Indigenous peoples extend into the marine waters of Canada. It’s important to note, however, that these rights and interests will need to be carefully considered and allowed for in any discussion of specific conservation measures in a particular region.

This report, therefore, simply provides one starting point for examining the strengths and limitations of the various federally mandated instruments that are available to support spatially explicit marine conservation. We have attempted to describe a number of tools, using a consistent format for ready comparison, but we do not presume to be defining the entire tool box.

The report begins with a summary table, with the body of the report providing additional detail. We have divided the report into two sections: the first addresses marine protected areas; the second section addresses a broader variety of conservation instruments.

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This report was originally completed in 2011 and has been updated in May 2013 to reflect recent changes.

SUMMARY TABLE OF INSTRUMENTS

Marine Spatial Conservation Mechanism	Purpose	Main Strengths	Main Limitations
MPAs:			
***Oceans Act* MPAs (DFO)**	Conserve and protect fish, marine mammals, and their habitats; unique areas; areas of high productivity or biological diversity	a) Process of establishment is faster than that of NMCAs b) Boundaries can be more easily adjusted than those of NMCAs	a) Allows for a wide range of activities within MPA boundaries; b) No express legislative prohibition of mining activities within MPA boundaries c) MERA is required as part of the establishment process d) No overarching rule on the minimum amount of fisheries' observer coverage required within the MPA (e.g., in the Gully, observer coverage is only 10%)
National Marine Conservation Areas and Reserves (PC)	Conserve and protect representative examples of Canada's natural and cultural marine heritage, and provide opportunities for public education and enjoyment	a) Mineral and hydrocarbon exploration and development are prohibited within NMCAs b) More budget and staff than have *Oceans Act* MPAs and NWAs c) NMCAs generally comprise larger areas than do *Oceans Act* MPAs and NWAs; d) No third-party rights to the seabed – stronger protection e) Legislative rather than regulatory designation	a) Process of establishment can take longer than *Oceans Act* MPAs because of extensive assessments b) An evaluation of mineral and energy resources is generally part of establishment process c) More costly than *Oceans Act* MPAs and NWAs
National Wildlife Areas (CWS/EC)	Conserve and protect habitat for a variety of wildlife, including migratory birds and species at risk	a) Wide range of activities are prohibited b) MERA not required (but a similar process is being developed)	a) Discretionary powers of the Minister to allow exceptions to the prohibited activities b) Limited budget c) *2008 Status Report of the Commissioner of the Environment and Sustainable Development to the House of Commons* identified the following problems with Environment Canada's protected areas (i.e., National Wildlife Areas and Migratory Birds Sanctuaries): • Environment Canada has identified specific threats to each of its protected areas, but has not assessed whether conditions are improving or deteriorating at the sites, or used the information

Marine Spatial Conservation Mechanism	Purpose	Main Strengths	Main Limitations
			collected to address threats on a priority basis • EC has developed a national strategy to guide the management of sites in its protected areas network, but the strategy is not being fully implemented. For example, most protected areas still lack up-to-date management plans • EC has not established explicit performance expectations against which progress can be assessed, and does not comprehensively monitor or regularly report on the condition and management of its network of protected areas • According to its own analyses, EC has allocated insufficient human and financial resources to address urgent needs or activities related to maintaining the sites and enforcing regulations in protected areas[i]
Other Spatial Conservation Measures:	**Purpose**	**Main Strengths**	**Main Limitations**
SARA's Critical Habitat (DFO, EC or PC)	Protect critical habitat of a listed wildlife species	a) More flexible mechanism (than the above-mentioned MPAs) to protect specific habitats of listed species b) Potential to be faster than a formal MPA designation, especially if an emergency order under section 80 of SARA is to be applied c) Protection of critical habitat and what constitutes critical habitat are not left to ministerial discretion in SARA, different from the *Fisheries Act*[ii] d) Habitat Protection orders, under section 58(5)(b) of SARA, are subject to judicial scrutiny e) Biological features (and not only abiotic features) of critical habitat can be protected under section 58 of SARA if identified in the recovery strategy. Protection from acoustic disturbance can also be granted[iii]	a) COSEWIC recommendations to list particular species can easily be undermined by socio-economic considerations by the Minister b) Only a few critical habitats outside federally protected areas have been identified under SARA to date. For example, "As of June 2007, critical habitat had been identified for 16 of the 228 species at risk for which recovery strategies were due" [iv] c) SARA does not provide for specific time frames to complete action plans, which can lead to a lengthy process toward the protection of the habitat in question

Marine Spatial Conservation Mechanism	Purpose	Main Strengths	Main Limitations
		f) Destruction from fishing activities can be restricted under SARA's section 58 as opposed to habitat protection under the *Fisheries Act*, section 35	
Fisheries closures/Habitat protection under the *Fisheries Act* (DFO)	Protect and conserve fish and fish habitat	a) Fisheries closures are flexible mechanisms that are faster and easier to establish and adjust (as well as revoke) than MPAs (*Oceans Act* MPAs, NMCAs, or NWAs). Though possibly considered weaknesses under certain circumstances, non-static fisheries management measures, such as closures, are useful conservation tools, especially in the face of climate change	a) Potentially short-term conservation measure b) Broad discretion of the Minister to establish (or not establish) closed areas c) DFO's discretion under the *Fisheries Act* is not limited by policy or plans d) Habitat protection under section 35 of the *Fisheries Act* is limited in scope and only applies to extreme cases (e.g. permanent destruction of fish (commercial, recreational or Aboriginal fishery or to fish that support such a fishery) habitat. e) *Fisheries Act* does not provide an overarching framework that ensures consistency among all the federal/provincial/territorial arrangements g) *Fisheries Act* only allows the Minister to suspend or cancel licences for breaches of licence conditions, not for breaches of regulations or general prohibitions of the act; DFO must therefore proceed through provincial courts for all other infractions. In many jurisdictions, however, there are no arrangements in place between DFO and provinces and territories to handle the issuing of tickets for violations of the act and its regulations h) Fisheries closures tend to protect single species from a specific threat rather than protecting entire ecosystems

Marine Spatial Conservation Mechanism	Purpose	Main Strengths	Main Limitations
Ecologically and Biologically Significant Areas identification (DFO/CBD)[v]	Identify significant areas to support oceans management, including the identification of Areas of Interest for MPA designation; and to facilitate provision of a greater-than-usual degree of risk aversion in management of activities in such areas.	a) Areas of Interest (first step toward establishing *Oceans Act* MPAs) are usually selected from previously identified EBSAs b) Need to protect EBSAs is endorsed by the UN Convention on Biological Diversity, Ninth Conference of the Parties, Decision IX/20 c) EBSA criteria can be used to help identify sensitive benthic habitats (see row below)	The identification of an EBSA is a scientific process only. This is not a limitation per se but it should be noted that there is no interim protection provided by its designation alone.
Vulnerable Marine Ecosystems[vi]/ Sensitive Benthic Areas protection (DFO)	Provide enhanced protection to marine habitats (in Canada) that are particularly sensitive	a) DFO is to determine the likelihood of risk of serious or irreversible harm a fishing activity may have on an ecologically and biologically significant benthic area; the risk analysis will be used to help determine appropriate action b) Taking into account the risk analysis, DFO will determine whether a commercial fishery should proceed in the defined area of a frontier area, whether the exploratory fishery should continue as is or in an amended form, or whether the fishery in the defined area or part thereof should be closed	a) Protection is offered only through soft-law instruments (e.g., Sensitive Benthic Areas Policy and influenced by UN General Assembly Resolutions 61/105 and 64/72; *FAO Guidelines for the Management of Deep-Sea Fisheries in the High Seas*) b) High discretionary powers of the Minister to adopt (or not adopt) fisheries closures after receiving the results of a risk analysis
Marine World Heritage Sites (PC/UNESCO)[vii]	Identify, protect, conserve, present, and transmit future generations of cultural and natural heritage[viii] of outstanding universal value	a) Deliberate measures that might damage directly or indirectly the heritage site are prohibited[ix] b) Access to the World Heritage Fund c) Involvement of stakeholders in the identification, nomination, and protection of World Heritage properties d) Buffer zones are encouraged e) Sites should have an appropriate management plan or other documented management system f) Transboundary Marine World Heritage Sites can be established g) International profile	Nominations must demonstrate the full commitment of a state party to preserve the heritage site concerned, through appropriate policy, legal, scientific, technical, administrative, and financial measures adopted and proposed to protect the property and its outstanding universal value. As such, the process can take a long time in areas that are not currently protected

Marine Spatial Conservation Mechanism	Purpose	Main Strengths	Main Limitations
RAMSAR sites (EC/RAMSAR Secretariat)	Conserve and ensure wise use of all wetlands[x] through local and national actions, and international cooperation, as a contribution toward achieving sustainable development throughout the world	a) Transboundary RAMSAR sites can be established b) Ecological character of the site is to be maintained c) Management plans are required for each RAMSAR site d) International profile	a) RAMSAR permits "wise use"[xi] of sites, but neither prohibits nor regulates the taking of species for any purpose, although such use must not affect the ecological characteristics of the wetland[xii]
Particularly Sensitive Sea Areas (Transport Canada/IMO)	Provide special protection due to ecological, socioeconomic, or scientific attributes of an area where these features may be vulnerable to damage by international shipping activities[xiii]	a) Enable specific measures to control the maritime activities in the area, such as routing measures b) Designation process can be fast (e.g., the Papahanaumokuakea PSSA took less than one year for its final designation)	a) Proposals for PSSAs are strengthened if protective measures are already in place for the area in question (e.g., areas within an MPA)
Special Areas under MARPOL (Transport Canada/IMO)	Provide higher level of protection to an area to prevent pollution from ships (by oil, noxious liquid substances, garbage, or air pollution), based on technical reasons relating to its oceanographic and ecological conditions, and to the particular character of its traffic[xiv]	a) Discharges of oily waste and some chemical residues are prohibited in special areas b) Strict enforcement provisions promote compliance of vessels flying flags of MARPOL's States Parties c) Strict port state measures under MARPOL promote further compliance with the Convention	a) Requirements of a Special Area designation can only become effective when adequate reception facilities are provided for ships in accordance with the provisions of MARPOL 73/78 b) Proposals for designation of a Special Area would be strengthened if measures were to be taken to manage the area's resources

Section 1: Marine Protected Areas

In this section we consider the three main instruments that fall under the general category of "marine protected area." This includes Marine Protected Areas (mandated by the Department of Fisheries and Oceans), National Marine Conservation Areas (Parks Canada), and National Wildlife Areas (Canadian Wildlife Service).

Marine Protected Areas (MPAs)

We will focus on the main federal instruments regarding the creation of MPAs. In some cases, enabling policy instruments will also be analyzed, as some of them supplement or are the basis for legislation under consideration.

A) Oceans Act MPAs and a System of MPAs (DFO)

(i) Scope

Under the *Oceans Act*, MPAs are part defined as areas of the sea that form part of the internal waters of Canada (...), territorial sea, or the Exclusive Economic Zone (EEZ) that has been designated for special protection owing to one or more of the following reasons: (as per section 35 of the *Oceans Act*): [1]

(a) the conservation and protection of commercial and non-commercial fishery resources, including marine mammals, and their habitats;

(b) the conservation and protection of endangered or threatened marine species, and their habitats;

(c) the conservation and protection of unique habitats;

(d) the conservation and protection of marine areas of high biodiversity or biological productivity; and

(e) the conservation and protection of any other marine resource or habitat as is necessary to fulfill the mandate of the Minister. Section 30 of the *Oceans Act* provides for the development of a strategy based on the principles of sustainable development; integrated management; and the precautionary approach. In 2002, Canada adopted its *Oceans Strategy*, which is discussed in detail below. The *Oceans Act* also provides for the development and implementation of a national system of MPAs.

(ii) Establishment Process

The Department of Fisheries and Oceans (DFO) is the agency responsible for creating MPAs under the *Oceans Act*. The Governor in Council, on the recommendation of the Fisheries and Oceans Minister, has the authority to make regulations to designate MPAs and to prescribe measures such as:[2]

(i) the zoning of marine protected areas;

(ii) the prohibition of classes of activities within marine protected areas; and

(iii) any other matter consistent with the purpose of the designation.

The process for establishing and managing an *Oceans Act* MPA is described by the National *Framework for Establishing and Managing Marine Protected Areas*[3] as follows (understood as an internal policy rather than a necessity):[4]

[1] *Oceans Act, s. 35 (1).*
[2] *Oceans Act, s. 35(3).*
[3] *National Framework for Establishing and Managing Marine Protected Areas* (DFO, 1999).
[4] See Annex II for diagram describing the process.

Identification (Step 1) and initial screening of an Area of Interest (Step 2)

The identification of an Area of Interest (AOI) can be based on various initiatives: ecosystem overviews, integrated management processes, fisheries management planning, individual stakeholder proposals. During this phase, ecological criteria to identify ecologically and biologically significant areas (EBSAs), ecologically significant species (ESSs), and ecologically significant community properties (ESCPs) should be applied. It is in these initiatives that DFO, other government agencies, community groups and Aboriginal organizations, the fishing sector, academic institutions, other stakeholders, and the general public can participate in the identification of AOIs. Potential AOIs are screened for consistency within the scope of MPAs under the *Oceans Act* and a general profile of the AOI is drafted. Once an area is identified as an AOI, it is monitored to ensure that the ecological integrity of the area remains intact while awaiting a formal recommendation concerning MPA status. However, if the ecological integrity of the AOI is being threatened by activities, interim protective measures may be imposed by the Government of Canada or other levels of government. Examples of federal measures include the application of *Fisheries Act* regulations and fisheries closures, and/or *Shipping Act* regulations on anchoring, navigation, and pollution restrictions.[5]

AOI Evaluation (Step 3)

An overview and assessment report of the AOI is prepared, consisting of an ecological, technical, and socio-economic assessment. The ecological assessment addresses whether or not any of the reasons for establishing an *Oceans Act* MPA (see Section 1[A][i] above) are present in the proposed MPA. It also looks into the ecological merits and significance of the proposal. A list of human activities that may need to be controlled should also be included in this assessment, as well as information regarding any necessary restoration and potential for recovery of ecosystem functions. When an ecological assessment indicates that an AOI is not suitable as an MPA under the *Oceans Act* or other relevant legislation, the AOI will not undergo any further assessments.

Some aspects the technical assessment will consider are whether the proposal is feasible from a management and technical perspective; necessary adjustments to improve the feasibility and practicality; boundaries of the AOI; and public and stakeholder support, including international recognition of the site's importance. This evaluation will also consider whether other measures or regulations (e.g., fisheries closures or harvest regulations) might be more appropriate for conserving and protecting resources. Socio-economic assessments will consider how the establishment of the MPA will affect human activities (i.e., fisheries, Aboriginal interests, community uses, oil and gas, minerals, aquaculture, shipping, defence, culture, recreation, tourism) in and around the area in question. It will also determine how socio-economic benefits of the MPA can be enhanced or how the costs can be reduced.

It is important to note that the *National Framework for Establishing and Managing Marine Protected Areas* emphasizes the role of the precautionary approach in the designation of the MPA. In this light, it suggests that "An AOI's ecological values may be more important than technical and socio-economic considerations. In such areas, the overriding concern may be to provide special protection for these values."[6]

After reviewing the assessments and considering the public input, DFO may recommend to 1) drop the AOI from further consideration; 2) consider tools other than MPA status for protecting or conserving the area's sensitive resources and habitats; 3) refer the AOI to another agency expressing an interest in considering the site under its legislation; 4) defer further consideration until more information is available; or 5) go forward with the development of an MPA management plan.

Once the AOI is recommended as an MPA candidate, interim protection may be put in place, as mentioned during step 1 of the process.

Develop a Management Plan for the Candidate MPA site (Step 4)

Once the AOI evaluation has been completed, the development of a candidate MPA management plan starts. Engagement with other federal and provincial agencies – as well as local governments, Aboriginal communities and organizations, non-government stakeholders, and the general public –continues to take place during this phase.[7]

[5] *National Framework* (DFO, 1999)
[6] Ibid.
[7] Ibid., step 4.

The management plan will contain detailed information related to, *inter alia*, the location and boundaries of the MPA; zoning; prohibited activities; monitoring activities; scientific research; public awareness and education; surveillance and enforcement; resource use management; and sources of funding and budget.[8]

The Minister can recommend that the management plan be designated through regulation under the *Oceans Act*.[9]

MPA Designation (Step 5)

This step may take place concurrently with the management plan development phase.

The designation of the MPA is done through the creation of regulations under section 35 of the *Oceans Act*.[10] Regulations are adopted after the development of a regulatory intent; cost-benefit analysis (required for the triage questionnaire); triage questionnaire; regulatory impact analysis statement (RIAS); and strategic environmental assessment. [11]Designation occurs when the regulations are published.[12]

Management of the MPA (Step 6)

During this phase, the MPA management plan and the MPA regulations will be implemented.

The *Oceans Act* is silent regarding the possibility to revoke the establishment of an MPA, to remove or add areas to the MPA, or to modify its boundaries. However, the *National Framework for Establishing and Managing Marine Protected Areas* provides for periodic review and evaluation, with input from the public, to determine if the MPA is fulfilling its purposes. Accordingly, it states that "Review and evaluation can include reconsideration of the status of the MPA. MPAs are not necessarily established in perpetuity. Many factors can change, including changes in purposes, environmental conditions, climate, and biodiversity. Periodic reviews will determine whether an existing MPA might be discontinued, enlarged, relocated, or redesigned to serve the intended purposes."[13]

It is important to note that the process for establishing MPAs under the *Oceans Act* was adopted by a policy, and not by the *Oceans Act* itself. Therefore, any necessary amendment to this process would be much simpler than amending the *Oceans Act* per se.

(iii) Strengths of Oceans Act MPAs

1. Shorter time frames

Even though establishing *Oceans Act* MPAs can take a long time (typically five years), it is still faster than establishing other types of MPAs, such as National Marine Conservation Areas (NMCAs). For example, the Gwaii Haanas NMCA Reserve took about 12 years to be formally established.

2. More flexible instruments

One of the current challenges to MPA establishment relates to climate change and inevitable ecosystem shifts. Rigid boundaries may not be the best option in a changing climate. In view of this, *Oceans Act* MPAs offer a better option than do NMCAs, for example, as their boundaries can be more easily adjusted than those of NMCAs, which are defined through amendment to legislation.

3. Precautionary Approach

The *Oceans Act* recognizes the precautionary approach as one of the principles of Canada's Oceans Strategy. Additionally, according to the *Oceans Act*, the Governor in Council, on the recommendation of the Minister, may make orders exercising any power under section 35 on an emergency basis, where the Minister is of the opinion that a marine resource or habitat is or is likely to be at risk to the extent that such orders are not inconsistent

[8] Ibid.
[9] Ibid.
[10] Ibid., step 5.
[11] DFO, Establishing and Managing MPAs under the Oceans Act, Online: http://www.dfo-mpo.gc.ca/oceans/marineareas-zonesmarines/mpa-zpm/process-processus-eng.htm; accessed, 07 November 2011.
[12] Ibid.
[13] *National Framework* (DFO, 1999); Step 6: Management of MPA.

with a land claims agreement that has been given effect and has been ratified or approved by an act of Parliament. This is consistent with the precautionary approach; however, this is a temporary measure that ceases to have effect 90 days of its existence if it is not repealed.

4. Enforcement and Control/Penalties

The *Oceans Act* provides for penalties associated with the contravention of regulations on MPA zoning, prohibition of classes of activities within MPAs, or any other matter related to the purpose of the MPA designation.[14] Every person who contravenes those regulations may be found guilty of an offence punishable on summary conviction and liable to a fine up to $100,000, or found guilty of an indictable offence and liable to a fine up to $500,000.[15] The amount of the fine might be doubled in case of recurrence.[16]

Furthermore, courts can also make an order, *inter alia*, prohibiting the convicted person to engage in any activity that could result in the continuation or repetition of the offence; requiring remediation or measures to avoid any harm to estuarine, coastal, or ocean waters, or their resources; and requiring respective compensation.

(iv) Limitations of Oceans Act MPAs

1. Allows for a wide range of activities within MPA boundaries

The main limitation of the *Oceans Act* with respect to MPAs is that it does not prohibit any particular activity within the protected area (acknowledging that a suite of flexible to rigid options are necessary). As seen above, the Minister has the discretion to recommend to the Governor in Council the prohibition of activities incompatible with the objectives of the MPA in question. However, as the act does not set different categories of MPAs in line with the categories of the International Union for the Conservation of Nature (IUCN)[17] or establish any other criteria or standards, this provision does not confer a significant degree of protection or add sufficient conservation value to the areas in question. For example, according to the recommendations of IUCN, mining activities should never be allowed within a protected area that falls under categories I-IV.[18] Accordingly, IUCN recommendation 2.82 "calls on all IUCN State members to prohibit by law, all exploration and extraction of mineral resources in protected areas corresponding to IUCN protected area management categories I- IV."[19] With respect to categories V-VI, it suggests that "Exploration and localized extraction would be accepted only where the nature and extent of the proposed activities of the mining project indicate the compatibility of the project activities with the objectives of the protected areas."[20] The 2012 IUCN Guidelines recommends that "carefully managed mining that has been risk assessed as causing minimal impact in a small discreet part of an MPA may be permissible depending on national legislation relating to mining in protected areas generally or in a specific MPA but these areas should be assigned as category V or VI."[21] In addition, IUCN has called for a moratorium on subsurface exploitation in all protected areas categories.[22]

2. Mineral Assessments

As discussed in Section B below, the 1996 *Minerals and Metals Policy* of the Government of Canada requires that full consideration be given to mineral potential in the area of proposed MPAs. DFO and Natural Resources Canada work together to apply this provision in respect of *Oceans Act* MPAs. These assessments can be expensive and lengthy, as noted below.

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[14] *Oceans Act,* s. 37.
[15] Ibid.
[16] Ibid., s. 39.6(2).
[17] N. Dudley, *Guidelines for Applying Protected Area Management Categories* (Gland: IUCN, 2008) x + 86 pp; and Day J., Dudley N., Hockings M., Holmes G., Laffoley D., Stolton S. & S. Wells, 2012. *Guidelines for applying the IUCN Protected Area Management Categories to Marine Protected Areas*. Gland, Switzerland: IUCN. 36pp.
[18] N. Dudley, *Guidelines for Applying Protected Area Management Categories* (Gland: IUCN, 2008) x + 86 pp., at 13.
[19] Ibid., at 12-13.
[20] Ibid., at 13.
[21] Day J., Dudley N., Hockings M., Holmes G., Laffoley D., Stolton S. & S. Wells, 2012. *Guidelines for applying the IUCN Protected Area Management Categories to Marine Protected Areas*. Gland, Switzerland: IUCN. 36pp, at 29.
[22] Ibid.

B) National Marine Conservation Areas and Reserves (Parks Canada)

(i) Objectives

National Marine Conservation Areas and Reserves are regulated by the *Canada National Marine Conservation Areas Act*[23] (*CNMCA Act*) and are established to protect and conserve representative marine areas for the benefit, education, and enjoyment of the people of Canada and the world.[24] The difference between NMCAs and Reserves is that Reserves are established "where an area or a portion of an area proposed for a marine conservation area is subject to a claim in respect of Aboriginal rights that has been accepted for negotiation by the Government of Canada."[25] Until the land claim is settled, a Reserve is protected and managed in the same manner as an NMCA.

These areas are to be "managed and used in a sustainable manner that meets the needs of present and future generations without compromising the structure and function of the ecosystems, including the submerged lands and water column, with which they are associated."[26]

They should be divided into zones that must include at least:

- one zone that fosters and encourages ecologically sustainable use of marine resources; and
- at least one zone that fully protects special features or sensitive elements of ecosystems.[27]

Other types of zones may be included.

The *CNMCA Act* establishes that the Governor in Council may make regulations, consistent with international law, for the control and management of any or all marine conservation areas, including regulations:[28]

a) for the protection of ecosystems and their elements;

b) for the protection of cultural, historical, and archaeological resources;

c) for the management and control of renewable resource harvesting activities;

d) respecting the delineation of zones within marine conservation areas;

e) restricting or prohibiting activities, or regulating the use of facilities in marine conservation areas or in any zones;

f) respecting the issuance, amendment, suspension, and revocation of permits and other authorizing instruments pursuant to section 15, including the number of persons who may hold any class of permits or other instruments, and the authority of superintendents to impose conditions on holders of permits or other instruments;

g) respecting the determination of fees, rates, rents, and other charges for the use of resources, facilities, and services, and the issuance and amendment of permits and other authorizing instruments;

h) authorizing the granting, and the surrendering or relinquishing, of leases, licences, easements, or servitudes of or over public lands in marine conservation areas for uses compatible with section 4;

i) respecting the safety of the public;

j) for the control of the flight of aircraft to prevent danger or disturbances to wildlife and wildlife habitat, and respecting the takeoff, landing, and taxiing of aircraft;

k) for the control of scientific research activities;

l) authorizing the disposal of waste or other matter by persons holding permits for that purpose, in the manner and to the extent specified in the regulations, in waters of a marine conservation area to which subsection 125(1) of the *Canadian Environmental Protection Act*, 1999, does not apply;

[23] *Canada National Marine Conservation Areas Act,* S.C. 2002, c. 18. *[CNMCA Act]*
[24] *CNMCA Act* (2002), s. 4(1)(2).
[25] *CNMCA Act (2002),* s. 4(2).
[26] Ibid., s. 4(3).
[27] Ibid., s. 4(4).
[28] Ibid., s. 16(1).

m) exercising, in relation to marine conservation areas, any of the powers to make regulations conferred on the Governor in Council by the *Canada National Parks Act*; and

n) designating provisions of the regulations for the purpose of the contraventions established by subsection 24(1).

It is important to note that regulations concerning fisheries management and conservation, or restricting or prohibiting fishing or aquaculture may only be made on the recommendation of the minister responsible for Parks Canada and the Minister of Fisheries and Oceans. Similarly, regulations that restrict or prohibit marine navigation or activities related to marine safety may only be made on the recommendation of the minister responsible for Parks Canada and the Minister of Transport, and in accordance with the provisions of the *Canada Shipping Act* and the *Arctic Waters Pollution Prevention Act*.[29] Once adopted, however, the regulations above will prevail over regulations made under the *Fisheries Act*, the *Coastal Fisheries Protection Act*, the *Canada Shipping Act*, the *Arctic Waters Pollution Prevention Act*, the *Navigable Waters Protection Act*, and the *Aeronautics Act*.

(ii) Establishment Process

The goal of the NMCA program is to ensure that Canada's marine and Great Lakes environments are represented within the NMCA system. Parks Canada (PC), working with marine scientists and experts from across the country, divided Canada's Atlantic, Arctic, and Pacific Oceans, as well as the Great Lakes, into 29 marine regions. *Canada's National Marine Conservation Areas System Plan*: *Sea to Sea to Sea*[30] describes each of these regions.

The *National Marine Conservation Areas Policy*[31] describes the establishment process for an NMCA, which includes the following steps:

1. Identification of representative marine areas:

a) The area must portray the geological, oceanographic, biological, and ecosystem diversity (that is characteristic of the marine region).

b) The area's ecosystems must be in a healthy, natural state, or, if they are stressed or significant environmental degradation has taken place, restoration and maintenance of their essential structure and function must be considered feasible.

The identification of representative marine areas is to be done in consultation with provincial and territorial governments, and other federal agencies and interested public.

2. The identification of representative marine areas is to be done in consultation with provincial and territorial governments, and other federal agencies and interested public.

a) the extent to which the area represents the ecosystem diversity of the marine region;

b) the degree to which the area contributes to the maintenance of essential ecological processes and life support systems for downstream areas (e.g., nursery or juvenile rearing areas);

c) the importance of the area in maintaining biodiversity and protecting critical habitats of rare, threatened, or endangered species;

d) the occurrence of exceptional natural phenomena and cultural resources;

e) the existing or potential value of the area for ecological research and monitoring;

f) opportunities for public understanding, education, and enjoyment;

g) possible threats to the long-term sustainability of the area's marine ecosystems as well as those of the surrounding lands;

h) minimizing conflict with existing or probable marine resource uses such as significant commercial fishing areas, mineral or energy resources, navigation routes, or defence exercise areas;

[29] *CNMCA Act,* s. 16(3).
[30] *Canada's National Marine Conservation Areas System Plan: Sea to Sea to Sea*, 1995.
[31] *National Marine Conservation Areas Policy*, 1994.

i) complementarity with the objectives of existing or planned protected marine or coastal areas of other jurisdictions in the marine region;

j) the potential of establishing an adjacent national park or national park reserve representative of its natural region;

k) the potential to cooperatively manage existing and potential uses of the marine resources within an adjacent to the potential marine conservation area on a sustainable basis, compatible with the objective of protecting its biotic resources and other values; and

l) the implications of comprehensive land claims and treaties with Aboriginal peoples.

3. Assessment of NMCA feasibility:

The feasibility assessment is led by PC in consultation with other departments, agencies (e.g., DFO in respect of fisheries and marine mammal's management; Transport Canada, in respect of navigational rights, shipping, etc.), and provincial or territorial governments. At this stage, an evaluation of the renewable and non-renewable natural resource potential in the proposed NMCA is usually undertaken to determine potential opportunities in the area in question. This process can take two to three years, cost millions of dollars, and potentially affect the creation of the NMCA or change the proposed boundaries.[32]

The feasibility assessment will include recommendations on:[33]

(a) the conservation and management objectives of the protected area;

(b) boundaries. In determining or adjusting the boundaries of the NMCA, effort will be made to establish an area with a size and configuration that

a) protects a wide diversity of marine ecosystems representative of the marine region;

b) accommodates the habitat requirements of viable populations of marine species that are native to the marine region;

c) does not fragment sensitive, highly diverse, or productive marine communities;

d) the conservation and management objectives of the protected area;

(c) a draft zoning plan with the purpose and objective of each zone and uses permitted.

If the assessment concludes that the NMCA designation is feasible and that there is public support for the designation, the concerned governments may decide to proceed with the negotiation of a marine conservation area agreement.

4. Negotiation of an NMCA agreement:

Once the assessment, as described above, concludes that a proposed NMCA is feasible, agreements with the concerned provincial or territorial governments, federal departments and agencies, and with Aboriginal organizations, as appropriate, are negotiated in order to determine the terms and conditions under which the NMCA will be established and managed. Agreements usually address elements such as:

a) final boundaries

b) management of fisheries and transportation

c) cost-sharing for land acquisition

d) timing of land transfer

e) continuation of traditional harvesting of renewable marine resources

f) cooperation in conservation, planning and management of the respective area

[32] J. Gardner, S. Biceto, S. Jessen, *Challenges and Opportunities in Progress towards Canada's Commitment to a National Network of MPAs by 2012* (Vancouver: CPAWS, 2008), at 25.
[33] Parks Canada, *National Marine Conservation Areas Policy, in Parks Canada Guiding Principles and Operational Policies* (1994). Online: http://www.pc.gc.ca/docs/pc/poli/princip/sec2/part2b/part2b3

g) regional integration and economic benefits

5. Establishment of a new NMCA in legislation:

The final stage of the NMCA establishment process includes amending Schedule 1 (in respect of NMCAs) or Schedule 2 (in respect of Reserves) of the *CNMCA Act*.[34] Through this process, the respective name and description of the area of the newly protected area is added to Schedule 1 or 2 of the Act.

This amendment can only be made when the Governor in Council is satisfied that the federal government has clear title or an unencumbered right of ownership to these lands, other than those located within Canada's EEZ.[35] When a province has administration and control of the lands to be included in the NMCA, the administration and control of these lands must be transferred to the federal government.

Before such an amendment of Schedule 1 or 2 is made, the proposed amendment and a report on the recommended NMCA or Reserve are submitted to each house of Parliament.[36] The report must include:

a) information on consultations undertaken, including a list of the names of organizations and persons consulted, the dates of the consultations, and a summary of their comments;

b) any agreements reached respecting the establishment of the area or reserve;

c) the results of any assessments of mineral and energy resources undertaken; and

d) an interim management plan that sets out management objectives and a zoning plan.

When both houses agree to amend the schedule, the NMCA or Reserve is officially created.

Management plans are to be prepared within five years of the establishment of the NMCA. In the meantime, an interim management plan should be adopted. The management plan has to be prepared in consultation with relevant federal and provincial agencies; coastal communities; Aboriginal organizations, governments, and bodies established under the land claims agreements; and other stakeholders. Management plans must include a long-term conservation vision for the area, provisions for ecosystem protection, human uses, zoning, public awareness, and performance evaluation.[37] At least every five years, the management plan should be reviewed. Revisions can include modifications to the plan based on ecosystem management and the precautionary approach.[38] Therefore, the original zoning could be modified if climate conditions cause ecosystem shifts in the area. Moreover, the plan could provide for specific measures associated with climate change effects.

In the case of the *Gwaii Haanas National Marine Conservation Area Reserve and Haida Heritage Site Interim Management Plan and Zoning Plan* (2010), the only reference to climate change relates to monitoring initiatives "measuring effects of climate-related sea level changes on shorelines."[39] However, the plan provides for the creation of "monitoring and reporting programs to aid ongoing ecosystem-based, adaptive management."[40] This would contribute toward climate change adaptation-related measures.

(iii) Strengths of NMCAs

1. Prohibition of certain activities

NMCAs and Reserves have an advantage over *Oceans Act* MPAs, in that the exploitation of hydrocarbons, minerals, aggregates, or any other inorganic matter within a marine conservation area is prohibited.[41]

Furthermore, the disposal of any substance within an NMCA is prohibited, unless authorized by a permit issued by the NMCA superintendent or by the Minister of the Environment under strict conditions.[42]

[34] CNMCA Act, ss. 5(1) and 7(1).
[35] CNMCA Act, s. 5(2)(a).
[36] CNMCA Act, s. 7(1).
[37] Ibid., s. 9(1).
[38] Ibid., s. 9(3).
[39] *Gwaii Haanas National Marine Conservation Area Reserve and Haida Heritage Site Interim Management Plan and Zoning Plan* (May 2010), at 15.
[40] Ibid.
[41] *CNMCA Act* s. 13.
[42] Ibid., s. 14.

2. Better Budget and larger areas

According to a report by the Canadian Parks and Wilderness Society (CPAWS), "Some feel that compared to DFO and EC, PC has clearer direction with regard to budget and staff for MPAs, and that the agency is relatively well resourced at the regional level."[43]

Additionally, NMCAs also typically comprise larger areas than the other types of MPAs.

(iv) Limitations of NMCAs

1. Mineral Assessments prior to NMCA establishment

As seen above, an assessment of the potential mineral and energy resources is generally required as part of the feasibility assessment for a new NMCA (step 3 of the NMCA establishment process).

Such a prerequisite is reinforced by the 1996 *Minerals and Metals Policy*, which requires the Canadian government to "fully take into account the mineral potential of the area in question before taking decisions to create protected areas."[44] Despite the fact that it prioritizes exploitation of mineral resources over protected areas, the policy refers to the Canadian government's commitment to sustainable development and endorses the precautionary approach.[45] Additionally, the 2010 *Statement on Canada's Arctic Foreign Policy* commits the Canadian government to sustainable development and strong environmental protection in the Arctic.

However, the requirement for mineral assessments prior to the establishment of "protected areas" seems to undermine international commitments to sustainable development and the precautionary approach. For example, Article 2 of the United Nations Convention on Biological Diversity (CBD) defines sustainable use as "use…in a way and at a rate that does not lead to long-term decline of biological diversity." As noted by Birnie et al., "The precautionary [approach], endorsed by Principle 15 of the Rio Declaration, is also an important element of sustainable utilization, because it addresses the key question of uncertainty in the prediction of environmental effects."[46]

In fact, one of the main obligations of the CBD is *in situ* conservation, which is defined as "the conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings, and in the case of domesticated or cultivated species, in the surroundings where they have developed their distinctive properties."[47]

In this light, the concept of sustainable development or sustainable use in no way prioritizes exploitation of mineral resources over environmental conservation. As emphasized by the International Court of Justice in the *Gabcikovo-Nagymaros* case, the "need to reconcile economic development with protection of the environment is aptly expressed in the concept of sustainable development."[48] In fact, Principle 4 of the Rio Declaration, which is a principle of general international law,[49] states that "Environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it."

This shows that by requiring mineral assessments prior to the designation of protected areas, the *Minerals and Metals Policy* contradicts the sustainable development principle endorsed by this same policy. Furthermore, it is likely to be contrary to rules of international environmental law.

2. No specific fisheries restrictions

As mentioned above, even though mineral and energy resource exploration and exploitation are not allowed within an NMCA or Reserve, no fisheries restrictions/standards are provided by the legislation. Regulations will determine what these restrictions might be, but the act does not provide for any general guidance/standard on this other than section 9(3), which states, "In order to protect marine ecosystems and maintain marine biodiversity, the primary considerations in the development and modification of management plans and interim

[43] J. Gardner, 2008, supra note 32, at 52.
[44] *Minerals and Metals Policy* of the Government of Canada (1996), at 15.
[45] Principle 15 of the Rio Declaration and endorsed by the *Oceans Act* and the *CNMCA Act*.
[46] P. Birnie, A. Boyle, C. Redgwell, *International Law and the Environment*, 3rd Ed. (Oxford: Oxford University Press, 2009), at 199.
[47] CBD, Art. 2.
[48] *Gabcíkovo-Nagymaros Project (Hungary/Slovakia)*, Judgment, I.C.J. Reports, 1997, p. 78, paras. 140-141.
[49] Iron Rhine Arbitration, PC (2005), para. 59.

management plans shall be principles of ecosystem management and the precautionary [approach].” With the retreat of Arctic sea ice due to climate change, fisheries activities have been increasingly expanding in the Arctic Region (notably in the Eastern Arctic).

3. Representativity under NMCA

As seen above, PC has the mandate to achieve representativity of its large 29 Marine Regions in the Pacific, Arctic, and Atlantic Oceans, and the Great Lakes.

Even though PC’s representativity system is well defined, it is noteworthy that the establishment of a single NMCA per Marine Region is unlikely to provide comprehensive coverage of all habitat types within each region.[50]

Additionally, representativity should be complemented by a number of other elements, including replication. As mentioned above, representation of one ecosystem by one large bioregion is not enough, especially in the face of climate change. As recommended by the CBD, at least three representative areas should be replicated in each biogeographic area in order to promote ecosystem resilience.

It is also noteworthy that due to the large size of NMCAs, they can often accommodate more than one significant replicated feature through multiple high-protection zones. For example, the NMCA science advisory committee in British Columbia recommended having at least two geographically separated replicates for each habitat type within each NMCA.[51] Moreover, *the National Framework for Canada's Network of Marine Protected Areas* includes replication[52] as a property of MPA network design. The framework recommends ensuring that “more than one example of each special ecological feature is protected (such as seamounts, banks, basins, canyons).”[53]

Despite the goal of achieving representativity of 29 Marine Regions through the Parks Canada mandate, there is still a need for clear guidelines on representativity at a regional scale.[54] As noted by Rice et al., “A network of protected areas is understood to be representative when it incorporates the range of known habitats, associated biodiversity, and ecological processes, both at the scale of coarser biogeographic units, and at the finer scale within those units.”[55] Ideally, the 29 Marine Regions would be subdivided into smaller-scale units where the ecologically representative areas could be identified and protected.

It will be interesting to see how Parks Canada’s approach on representativity will fit into the *National Framework for Canada’s Network of Marine Protected Areas*, as its biogeographic unit varies in scale and location. Under the framework, Canada’s oceans and the Great Lakes are to be divided into 13 bioregions,[56] as opposed to the 29 Marine Regions of Parks Canada.

C) Terrestrial and Marine National Wildlife Areas (Environment Canada’s Canadian Wildlife Service)

(i) Objectives

Terrestrial and marine National Wildlife Areas (they both use the acronym NWA)[57] are established under the *Canada Wildlife Act*[58] with the objective to protect wildlife habitats, migratory birds, and endangered species for research, conservation, and interpretation. NWAs are administered by Environment Canada's Canadian Wildlife Service (CWS).

[50] For further details, see J. Smith et al. (2009), note 52, at 6.
[51] Ibid., at 8.
[52] The definition of replication under the draft framework is “more than one example of each special ecological feature (i.e., species such as whales, fish, seabirds, invertebrates; habitats such as seamounts, banks, basins, canyons; ecological process such as upwelling) is protected to safeguard against unexpected loss from natural events or human disturbance,” *National Framework for Canada’s Network of Marine Protected Areas* (September 2011), at s. 9.3.
[53] Ibid., at 11.
[54] J. Smith, M. Patterson, H.M. Alidina and J. Ardron, *Criteria and Tools for Designing Ecologically Sound Marine Protected Area Networks in Canada’s Marine Regions* (WWF-Canada, 2009)
[55] J. Rice, K. Gjerde, J. Ardron, S. Arico, et al., "Policy relevance of biogeographic classification for conservation and management of marine biodiversity beyond national jurisdiction, and the GOODS biogeographic classification," 54 *Ocean and Coastal Management* (2011), 110-122, at 113.
[56] See Annex III for a map of Canada’s 13 bioregions.
[57] Terrestrial NWAs can extend up to the 12 nautical mile limit of Canada's territorial sea while marine NWAs can extend up to 200 nautical mile limit of Canada's EEZ.
[58] Canada Wildlife Act, (1973), ch. 9. The act was amended in 1994 to incorporate protected marine areas.

Under the *Regulations Respecting the Management of Wildlife Areas and Control Thereof*, [59] the following activities are prohibited within any wildlife area:[60]

a) hunting and fishing

b) causing damage, destruction, or removal of plants

c) swimming

d) carrying on any commercial or industrial activity

e) disturbance or removal of any soil, sand, gravel, or other material

f) dumping or depositing any rubbish, waste material, or substance that would degrade or alter the quality of the environment

However, the Minister of the Environment may issue permits or post notices authorizing the activities listed above to take place within a wildlife area, as long as the activity does not interfere with the conservation of wildlife.[61] Such a permit can be cancelled or suspended by the Minister for conservation purposes.[62]

(ii) Establishment Process

NWAs can be established by the Governor in Council through amendments to the *Wildlife Area Regulations* under the *Canada Wildlife Act*. To be designated as an NWA, the area must be owned by the federal government. In case the area does not belong to the federal government, EC has to sign an agreement with the owner to establish and manage a cooperative wildlife area, which would not be designated under the *Wildlife Area Regulations*. Partners in cooperative management include the provinces and Aboriginal groups. Such areas might be required to meet the criteria for selecting candidate NWAs, described below.

For an area to be eligible as an NWA, it needs to meet at least one of the following criteria:[63]

1. Migratory Birds

a) The area supports a population of species, or subspecies, or a group of species which is concentrated for any portion of the year.

b) Where data on populations are available, the area supports at least one per cent of the Canadian population of a species, or subspecies, or a group of species for any portion of the year.

c) The area has high research potential for restoration or enhancement in a way that migratory bird populations can be increased in order to meet national population targets.

2. Wild flora and fauna

a) The area supports a significant assemblage of rare, vulnerable, threatened, or endangered species or subspecies of plants or animals, or a significant number of individuals of any one or more of these species or subspecies (e.g., Committee on the Status of Endangered Wildlife in Canada list).

b) The area has special value for maintaining the genetic and ecological diversity of a region because of the quality and uniqueness of its flora and fauna.

3. Unique wildlife habitats

The area is a rare or unusual wildlife habitat, or a specific type in a biogeographic region (the Arctic sea ice clearly falls within this category).

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[59] *Regulations Respecting the Management of Wildlife Areas and the Control Thereof*, C.R.C., c. 1609 [Wildlife Area Regulations]
[60] *Wildlife Area Regulations*, s. 3(1).
[61] Ibid., s. 4.
[62] Ibid., s. 7.
[63] Environment Canada, *Criteria for Selecting Candidate National Wildlife Areas*. Online: http://www.ec.gc.ca/ap-pa/default.asp?lang=En&n=39C49EBC1

Once a site is identified, CWS will map the proposed area and conduct an inventory of the wildlife. CWS must establish federal title to the area in question for the establishment of the NWA. The site is then officially "scheduled" under either the *Migratory Bird Sanctuary Regulations or the Wildlife Area Regulations*.

(iii) Strengths of Marine NWAs

1. Wide range of activities prohibited

As seen above, this is the only kind of MPA under federal legislation where a wide range of activities are prohibited. As the main objective of this kind of protected area is conservation and research, this is a very strict category of MPA. Nevertheless, this restriction is flexible, as the Minister of the Environment has the authority to issue permits or post notices authorizing activities in the area as long as they do not interfere with the conservation objectives of the NWA. In adopting conservation and management measures for a particular marine NWA , agreements between Environment Canada and other competent authorities (e.g. DFO, Transport Canada, etc) would have to be developed.

(iv) Limitations of Marine NWAs

1. Insufficient budget and capacity

The main challenge associated with establishing NWAs is the lack of resources and capacity.[64] To date, no marine NWAs have been established, although a number of NWAs with marine components have been put in place. At the time of writing, the Scott Islands had been proposed as a Marine NWA under Schedule I of the *Wildlife Area Regulations* under the authority of the *Canada Wildlife Act*.[65]

Section 2: Other Spatial Conservation Mechanisms

The MPAs considered in Section 1 comprise the main, but by no means the only, spatially explicit mechanisms for marine conservation. In this section, we consider a number of other mechanisms, including ones with highly specialized functions – such as habitat protection or conservation of vulnerable fisheries – as well as broader policy instruments that have a spatially explicit component to them.

A) Protected Critical Habitat (Species at Risk Act - DFO, Parks Canada, Environment Canada)

(i) Objectives

Critical habitats are protected under the *Species at Risk Act*[66] (SARA) with the purpose of protecting and recovering a listed wildlife species that is identified as the species' critical habitat in a recovery strategy or in an action plan. Section 58 of SARA states that no person is allowed to destroy any part of the critical habitats of listed endangered, threatened, or extirpated species.

The procedure for implementing such a prohibition is described in subsection (ii) below. Aquatic habitat is defined under SARA as "spawning grounds and nursery, rearing, food supply, migration, and any other areas on which aquatic species depend directly or indirectly in order to carry out their processes, or areas where aquatic species formerly occurred and have the potential to be reintroduced"; with respect to other wildlife species, it is the area or type of site where an individual or wildlife species naturally occurs or depends on directly or indirectly in order to carry out its life processes, or formerly occurred and has the potential to be reintroduced.[67]

[64] Guenette, S., J. Alder, " Lessons From Marine Protected Areas and Integrated Ocean Management Initiatives in Canada," 35 Coastal Management (2007), 51-78.
[65] Environment Canada, *Regulatory Strategy for the Designation of the Proposed Scott Islands Marine National Wildlife Area (Amendment to Schedule I of the Wildlife Area Regulations: Proposed Scott Islands National Wildlife Area)*, 2013.
[66] *Species at Risk Act*, S.C. [2002], c. 29.
[67] SARA, s. 2(1)..

SARA recognizes the precautionary approach by affirming that the "Government of Canada is committed to conserving biological diversity and to the principle that, if there are threats of serious or irreversible damage to a wildlife species, cost-effective measures to prevent the reduction or loss of the species should not be postponed for a lack of full scientific certainty."[68] It also acknowledges that the "habitat of species at risk is key to their conservation, and Canada's protected areas, especially national parks, are vital to the protection and recovery of species at risk."[69]

(ii) Designation Process

The designation of a protected critical habitat starts with the wildlife species listing process. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) was established under SARA to, *inter alia*, assess the status of each wildlife species considered by COSEWIC to be at risk, and identify existing and potential threats to the species and classify them as extinct, extirpated, endangered, threatened, or of special concern; determine when wildlife species are to be assessed; conduct a new assessment of the status of species at risk and reclassify or declassify them when appropriate; and provide advice to the Minister of the Environment and the Canadian Endangered Species Conservation Council.[70] Species classification must be reviewed by COSEWIC at least once every 10 years, or at any time it has reason to believe that the status of the species has changed significantly.[71] COSEWIC can also indicate that it does not have sufficient information to classify the species or indicate that the species is not under risk.[72]

After preparing the assessment on the status of wildlife species, COSEWIC then submits it to the Minister of the Environment and to the Canadian Endangered Species Conservation Council. The Minister then recommends to the Governor in Council to amend the List of Wildlife Species at Risk (SARA, Schedule 1) by adding the species in question to the list; reclassifying a listed species; or removing a listed species.[73] If the Governor in Council does not take any action within nine months after receiving the COSEWIC assessment, the Minister shall, by order, amend the list in accordance with the assessment.[74]

Once a wildlife species is listed as extirpated, endangered, or threatened, the competent minister must prepare a strategy for its recovery.[75] The recovery strategy should be prepared in cooperation with the minister of the province or territory in which the species is found, or in cooperation with the wildlife management board, as appropriate.[76] The minister must also cooperate with any Aboriginal organizations that may be directly affected by the recovery strategy when preparing such a document.[77]

If the competent minister determines that the recovery of the listed wildlife species is feasible, the recovery strategy must address the threats to the survival of the species identified by COSEWIC, including any loss of habitat, and, *inter alia*, threats to its habitat and measures to be taken to address those threats; the identification of the species' critical habitat "to the extent possible," and examples of activities that will probably result in its destruction; a schedule of studies to identify critical habitat, when the information available is not adequate; and time frames for the completion of the recovery strategy's action plan(s).[78] Section 49 of SARA regulates the contents of the action plans. The recovery strategy may adopt a multi-species or an ecosystem approach.[79]

As seen above, critical habitats are to be identified in a SARA recovery strategy or action plan "to the extent possible." The identification process is not described under SARA. However, the *Federal Policy Discussion Paper: Critical Habitat*,[80] which is not intended to be final or reflect policy positions of EC, PC, or DFO, suggests a five-step process for critical habitat identification as follows:

i. description of the biological, physical, and/or functional attributes required by the species at risk

ii. location, to the greatest extent practically possible, of all species-at-risk habitat range

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[68] Ibid., preambular paragraph.
[69] Ibid.
[70] SARA, s. 15(1). The Canadian Endangered Species Conservation Council is composed by the Minister of the Environment, the Minister of Fisheries and Oceans, the minister responsible for the Parks Canada Agency and ministers of the government of a province or a territory who are responsible for the conservation and management of a wildlife species in that province or territory (SARA, s. 7[1]).
[71] SARA, s. 24.
[72] Ibid., ss. 15(1)(ii) and (iii).
[73] Ibid., s. 27(1).
[74] Ibid., s. 27(3).
[75] SARA, s. 37(1).
[76] Ibid., s. 39(1).
[77] Ibid., s. 39 (1)(d).
[78] Ibid., s. 41(1).
[79] Ibid., s. 41(3).
[80] *Environment Canada Species at Risk Recovery Program, Federal Policy Discussion Paper: Critical Habitat* (Ottawa: Environment Canada, 2004). Online: http://www.llbc.leg.bc.ca/public/pubdocs/docs/367850/federal_policy.pdf

iii. rationalization of the step 2 habitat area based upon the population target of the species at risk and practical implementation factors, such as stakeholder views

iv. determination by the competent minister of critical habitat

v. identification of critical habitat in the recovery strategy and the public registry

There are different processes for implementing SARA's prohibition to destroy critical habitats – indirect protection under other acts of Parliament, or direct protection under SARA as follows:

1. If the critical habitat of part of the critical habitat is located within an MPA (e.g., *Oceans Act* MPA, NMCA, Migratory Bird Sanctuary, or NWA): the competent minister must within 90 days after the recovery strategy or action plan is included in the Public Registry, publish in the *Canada Gazette* a description of the critical habitat.[81] This will trigger the prohibition to destroy the critical habitat under section 58(1), and this prohibition comes into force 90 days after the description is published in the *Gazette*.[82]

2. Indirect protection under other acts of Parliament: If the critical habitat is legally protected by other acts of Parliament (i.e., federal laws or regulations as opposed to non-legally binding policies, guidelines, and ministerial discretion) or by SARA's section 11 Agreement, the competent minister *must* include a protection statement to the Public Registry, describing how the critical habitat is already protected from destruction. It is important to note that laws of other legislatures and municipal laws cannot be cited in a protection statement.[83]

   It is also important to note that in the *Resident Killer Whale* decision, the Federal Court stated that:

   (...) A competent minister has no discretion to rely on a provision of another federal law unless that law provides an equal level of legal protection to critical habitat as would be engaged through subsections 58(1) and (4). If a provision cited in a protection statement does not legally protect critical habitat to a degree equaling the protection under subsection 58(1) and other SARA provisions, then the minister must issue a protection order.[84]

3. Direct protection under SARA: If the critical habitat is not legally protected by any act of Parliament or section 11 Agreement, the Minister of Fisheries and Oceans must make a protection order determining the general critical habitat destruction prohibition within 180 days after the recovery strategy or action plan (which identified the critical habitat) is included in the Public Registry.[85]

(iii) Strengths of SARA's protected critical habitats

1. Precautionary approach as part of the recovery strategy, action plan, or management plan

Section 38 of SARA provides for the obligation of the competent minister to apply the precautionary approach in the preparation of a recovery strategy, action plan, or management plan as follows:

In preparing a recovery strategy, action plan, or management plan, the competent minister must consider the commitment of the Government of Canada to conserving biological diversity and the principle that, if there are threats of serious or irreversible damage to the listed wildlife species, cost-effective measures to prevent the reduction or loss of the species should not be postponed for a lack of full scientific certainty.[86]

2. Habitat Protection orders, under section 58(5)(b), are subject to judicial scrutiny

As noted in the *Resident Killer Whale* case, SARA does not make use of privative clauses and other provisions shielding the habitat protection under subsection 58(5) decisions from judicial scrutiny.[87]

[81] SARA, s. 58(2).
[82] Ibid., s. 58(3).
[83] *David Suzuki Foundation et al. v. Canada*, [2010] F.C. 1233, [*Resident Killer Whale* case], at para. 335.
[84] Ibid., at para. 257.
[85] SARA, s. 58(5)(a).
[86] SARA, s. 38.
[87] *David Suzuki Foundation et al. v. Canada*, [2010] F.C. 1233, [*Resident Killer Whale* case], at para. 183.

3. Biological features can be included as essential components of the habitat

The protection of critical habitat and what constitutes critical habitat are not left to ministerial discretion, different from the habitat protection under the *Fisheries Act*.[88]

Moreover, biological features (not only abiotic features) of critical habitat can be protected under subsection 58(5) of SARA and in accordance with the recovery strategy. Protection from acoustic disturbance can also be granted.[89]

(iv) Limitations of SARA's protected critical habitats

1. Vagueness of terms

As seen above, section 58 of SARA establishes that "No person shall destroy any part of the critical habitat of any listed endangered species or of any listed threatened species (...)."

Despite this prohibition, the act does not provide a definition of "destruction." Moreover, the act is also weakened by the vagueness of other terms. For example, section 77 allows the issuance of permits/licences under other acts of Parliament that might affect critical habitats.
Under this provision, the competent licensing agency has to consult with the competent minister responsible for the critical habitat, consider the potential impacts on the species' critical habitat, and needs to be of the opinion that:

(a) all reasonable alternatives to the activity that would reduce the impact on the species' critical habitat have been considered and the best solution has been adopted; and

(b) all feasible measures will be taken to minimize the impact of the activity on the species' critical habitat.[90]

SARA does not define or establish a set of criteria for defining terms such as "all reasonable alternatives," "best solution," and "all feasible measures."
Another limitation of the protected critical habitats under SARA is that such habitats only have to be identified in a recovery strategy or action plan "to the extent possible."

2. Excessive ministerial discretion to accept COSEWIC advice

SARA, just like a number of other parliamentary acts, confers the competent minister with a wide range of discretionary powers, by making use of soft-law language throughout its text.
For example, the Minister must "take into account" the assessment of COSEWIC on the species and consult with the competent minister(s), who will determine whether recovery is feasible. With respect to the recovery strategies, ministers must "consider" comments fro the public, and "may" adopt a multi-species or an ecosystem approach.

3. Absence of timelines for completing action plans

As seen above, the time frames for completing action plans are to be established by the recovery strategy. This can lead to extremely lengthy processes that can undermine the protection of the species and its respective habitats.

B) Fisheries Act Protection of Fish Habitat and Fisheries Closures

Habitat protection under the *Fisheries Act*:

Prior to the 2012 amendment to the *Fisheries Act*[91], *the Act* established that "No person shall carry on any work or undertaking that results in the harmful alteration, disruption, or destruction of fish habitat."[92] Fish habitat is defined as

[88] Ibid., at para. 175.
[89] Ibid., at para. 337.
[90] SARA, s. 77(1).
[91] *Fisheries Act*, c. F-14.

"spawning grounds and nursery, rearing, food supply, and migration areas on which fish depend directly or indirectly in order to carry out their life processes."[93] Notwithstanding the prohibition mentioned above, the Minister of Fisheries and Oceans had the discretionary power to authorize alteration, disruption, or destruction of fish habitat.[94]

The person proposing to undertake activities that will result in the alteration, disruption, or destruction of fish habitat had to provide the Minister with, *inter alia*, plans, specifications, and studies.[95]

However, section 35 of the *Fisheries Act* did not apply to destruction of fish habitat caused by fishing activities. In the *Ecology Action Centre Society v. Canada (Attorney General)*,[96] "The Federal Court upheld DFO's interpretation that the *Fisheries Act's* harmful alteration provision was not intended to apply to effects on habitat by fish harvesters."[97] In this case, DFO had refused to apply section 35 on fish habitat protection to bottom trawling by fishing vessels.

This Section of the *Fisheries Act* was amended in 2012. At the time of writing, the amendments to the Fisheries Act have not entered into force in their totality. Once they come into force in 2013, Section 35 (1) will read: "No person shall carry on any work, undertaking or activity that results in serious harm to fish that are part of a commercial, recreational or Aboriginal fishery, or to fish that support such a fishery." Section 2 defines 'serious harm to fish' as "the death of fish or any permanent alteration to, or destruction of, fish habitat". The damage to be prohibited is much more radical (i.e. permanent destruction; death of fish) than the past legislation. This does not seem to conform with the precautionary principle/approach.

With the proposed changes, the Minister continues to have discretionary powers to decide on whether or not to authorize a project that can cause permanent destruction of fish habitat.

Fisheries Closures:

A fishery closure is one type of fishery management measure that can be put in place by DFO for conservation or safety purposes, among others.[98] It is noteworthy that fisheries closures under the *Fisheries Act* are temporary management measures and should not be perceived as marine protection, as they do not require the elaboration of management plans.

The Northeast Channel Coral Conservation Area, located on the Scotian Shelf, is an example of an area closure under the Fisheries Act, and was established to protect large octocoral (bubblegum and seacorn coral) colonies. This conservation area was established through licence conditions issued under the *Fisheries Act/Maritimes Fishery Regulations*. It comprises a 424-square-kilometre area and is divided into two zones: a restricted bottom fishing zone (about 90 per cent of the area), and a limited bottom fishing zone (about 10 per cent of the area).[99]

DFO has been arguing for the incorporation of some fisheries closures as potential "contributory sites" (if certain criteria are met) of MPA networks.[100] DFO recognizes that closures do not meet the definition of an MPA and that long-term protection for those sites cannot be guaranteed. But they can be established faster than MPAs and could contribute to the overall objectives of MPA networks.

(i) Strengths of the Fisheries Act closures

The main benefit of fisheries closures under the *Fisheries Act* is that they are flexible mechanisms – faster and easier implement or adjust than formally established MPAs. This flexibility can be seen as a benefit in a changing climate. Also, they may be addressing the only threat that needs management attention.

[92] Ibid., s. 35(1).
[93] Ibid., s. 34(1).
[94] Ibid,, s. 35(2).
[95] Ibid., s. 37(1).
[96] *Ecology Action Centre Society v. Canada (Attorney General)*, [2004] F.C.J. No. 1318.
[97] D. Vanderzwaag, J. Hutchings, "Canada's Marine Species at Risk: Science and Law at the Helm, but a Sea of Uncertainties," (2005) 36 (3) ODIL 219-259, at 234.
[98] DFO, Fishery Openings and Closures. Online: http://www.dfo-mpo.gc.ca/fm-gp/peches-fisheries/oc-of-eng.htm
[99] DFO, "Coral Conservation Plan, Maritimes Region (2006-2010)", *Oceans and Coastal Management Report 2006-01,* Appendix G.
[100] J. Mitchell, "Incorporating Fishery Closures into Canada's National MPA Network as 'Contributory Sites.'" Paper presented at IMCC 2011. See also *National Framework for Canada's Network of Marine Protected Areas* (September 2011).

(ii) Limitations of Fisheries Act closures and habitat protection

1. Excessive Ministerial Discretion

As pointed out in the *Resident Killer Whale* case, the Minister of Fisheries and Oceans has broad powers under the *Fisheries Act*, which are not limited by any policy or plans:

> The *Fisheries Act* creates a comprehensive scheme for the management of fisheries in Canada. It is highly discretionary legislation that grants broad powers to the Minister of Fisheries and Oceans to manage the fishery with few statutory limitations. As recognized by the Court of Appeal in *Carpenter Fishing Corp.*, at paragraphs 35 and 37, Parliament has given DFO the "widest possible freedom to manoeuvre" in regulating the fishery. For example, section 7 grants the Minister "absolute discretion" over the issuing of fisheries licences. Subsection 35(2) grants the Minister complete discretion to authorize the destruction of fish habitat. Section 22 of the *Fishery (General) Regulations*, above, grants the Minister complete discretion to attach conditions to a fishing licence. See *Ecology Action Centre Society v. Canada (Attorney General)*, [2004] F.C. 1087, 262 F.T.R. 160 (*Ecology Action Centre*) at paragraph 54 and *Ahousaht Indian Band* at paragraph 752.
>
> DFO's discretion under the *Fisheries Act* is not limited by policy or plans. See *Carpenter Fishing Corp.*, at paragraph 28; *Ahousaht Indian Band*, at paragraph 752; and *Arsenault*, at paragraphs 38 and 43.[101]

The new (amended) provision has a limited scope of application as it only prohibits extreme threats (permanent destruction of certain habitats) to relevant commercial, recreational and Aboriginal fisheries.

2. Habitat Protection from Fishing Activities is not applicable

As seen above, section 35 of the *Fisheries Act* (prohibition to destroy fish habitat) did not apply to destruction caused by fishing activities. However, given the recent changes to the Fisheries Act (i.e. inclusion of the term 'activity' in section 35(1)), new jurisprudence on this provision might be required.

C) Territorial Lands Act

It is important to note the role of the *Territorial Lands Act*[102] in this context, as under its provisions, a strip of land one hundred feet in width, measured from ordinary high water mark, is reserved to the Crown out of every grant of territorial lands where the land extends to the sea or an inlet thereof.[103] Section 14 of the act states that unless the grant contains a provision to the contrary, the bed, below ordinary high water mark of a body of water, is reserved to the Crown out of every grant of territorial lands where the lands border a body of water.

The *Territorial Lands Act* also gives the Governor in Council the right to set apart and appropriate any territorial lands as a land management zone for the protection of the ecological balance or physical characteristics of any area in the Northwest Territories or Nunavut.[104]

Regulations may be adopted on the protection, control, and use of the land surface in a land management zone, as well as on the issue of permits for land use in those zones.[105]

The Governor in Council is required to previously consult with the Council of the Northwest Territories or the Legislative Assembly of Nunavut on any of the above-mentioned initiatives.[106]

Section 3: Supporting Policy Instruments

The following instruments comprise policies and strategies to implement the *Oceans Act*.

[101] *Resident Killer Whale case*, at paras. 321, 322.
[102] *Territorial Lands Act*, R.S.C., 1985, c. T-7.
[103] Ibid., s. 13.
[104] *Territorial Lands Act*, s. 4.
[105] Ibid., s. 5.
[106] *Territorial Lands Act*, s. 6.

A) Canada's Oceans Strategy (and Operational Framework for the Implementation of Integrated Management)

Canada's Oceans Strategy,[107] adopted in 2002, aims at providing policy direction on the implementation of the *Oceans Act* based on the principles of sustainable development, integrated management, and the precautionary approach.[108] The *Oceans Strategy* also recognizes the ecosystem approach in order to maintain biological diversity and productivity of the oceans. It also points out the need to shift from single-species and sectoral approaches to a more comprehensive and holistic management, where a network of MPAs plays an important role. The *Oceans Strategy* emphasizes that "Canada's long-term goal is to develop a system of nested integrated management plans for all of its marine waters, and to establish within these a network of marine protected areas."[109]

With respect to Aboriginal rights, the *Oceans Strategy* states that "In areas where there are defined treaty or Aboriginal rights recognized under a settled land claim, and where there are established bodies, the co-management approach to integrated management will apply and respect the conditions of the settled claim."[110]

The *Oceans Strategy* establishes that ecosystem-based management objectives will be adopted for each Large Ocean Management Area (LOMA) and sets the objective to establish integrated management plans for all Canadian marine, coastal, and estuarine waters. It also notes that within each LOMA, a number of aspects are to be considered, including the "identification of ecologically sensitive habitat, marine species, and special features in need of special protection."[111] In this context, the *Oceans Strategy* calls for the "identification of areas of interest for MPAs to be established by the Government of Canada, including those under the *Oceans Act*; Marine Conservation Areas; and Marine Wildlife Sanctuaries."[112]

Reinforcing the provisions of the *Oceans Act*, the *Oceans Strategy* identifies DFO as the leading agency on the coordination and development of integrated management plans for the LOMAs in most cases. These plans were supposed to provide the framework for DFO to coordinate the development of a national network of MPAs on behalf of the Government of Canada. It recognizes that "The establishment of a coordinated network of National Marine Conservation Areas (Heritage Canada), of Marine Wildlife Areas (Environment Canada), and of Marine Protected Areas (Fisheries and Oceans Canada) will help provide the appropriate level of protection for special habitats and sensitive resources identified at a large ecosystem scale."[113] More specifically, it notes that the integrated management "planning process can identify areas of interest for [MPAs] and help establish a domestic and international network of protected areas."[114]

It is noteworthy that the *Oceans Strategy* recognizes the importance of adaptive management through monitoring and evaluation of the outcomes of the integrated management planning process as a means to adapt to changes in the ecosystem. Therefore, significant changes caused by climate change ought to be considered in this context and have the potential to trigger the revision of the respective plan. Adaptive management is also supported by the recommended inclusion into the integrated management process of regular performance reports on the ecosystem, institutional and socio-economic objectives, indicators, and associated management actions for the plan.

B) Canada's Oceans Action Plan

Canada's Oceans Action Plan was adopted in 2005. It provides for the development of a federal MPA strategy to guide the creation of a comprehensive and coordinated network of MPAs in Canadian waters.

C) Canada's Federal Marine Protected Areas Strategy

Canada's Federal Marine Protected Areas Strategy[115] (MPA Strategy) was adopted in 2005 with the objective of clarifying "the roles and responsibilities of federal departments and agencies with [MPA] mandates; namely, Fisheries and Oceans Canada, Environment Canada, and the Parks Canada Agency" toward the creation of "a cohesive and complementary network of marine protected areas."[116] The MPA Strategy's goal is to create an MPA network to be "established and

[107] *Canada's Oceans Strategy: Policy and Operational Framework for Integrated Management for Integrated Management of Estuarine, Coastal and Marine Environments in Canada* (2002).
[108] *Oceans Act*, Section 30.
[109] *Canada's Ocean Strategy*, at 33.
[110] Ibid., at 12.
[111] Ibid., at 17.
[112] Ibid., at 17.
[113] *Canada's Oceans Strategy*, at 18.
[114] Ibid., at 27.
[115] *Canada's Federal Marine Protected Areas Strategy, 2005. [MPA Strategy]*
[116] Ibid., at 3.

managed within an integrated oceans management framework, that contributes to the health of Canada's oceans and marine environments."[117]

An MPA is defined by the strategy in accordance with the IUCN definition in existence at the time the strategy was released; that is, "Any area of intertidal or subtidal terrain, together with its overlying water and associated flora and fauna, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment."[118] However, the MPA Strategy does not categorize MPAs, nor does it endorse the IUCN protected areas categories.

The MPA Strategy emphasizes the importance of establishing a network of MPAs "within a broader sustainable ocean management planning framework and creating linkages to transboundary, international, and terrestrial protected area networks."[119] The acknowledgement that MPA networks should be established within a "sustainable ocean management planning framework" reinforces Canada's policy commitment to a spatial approach to ocean planning and management.

The strategy defines an MPA network as "a set of complementary and ecologically linked marine protected areas, consisting of a broad spectrum of marine protected areas, established and managed within a sustainable ocean management planning framework and linked to transboundary, global, and terrestrial protected area networks."

The MPA Strategy also recognizes Canada's political commitments toward the creation of a network of MPAs under a number of international forums, including the UN Convention on Biological Diversity (CBD) Conference of the Parties, and the World Summit on Sustainable Development.[120]

The key principles of the MPA Strategy are the following:

(i) Integrated management

(ii) Ecosystem approach

(iii) Precautionary principle[121]

(iv) Respecting Aboriginal peoples[122]

(v) Knowledge based

(vi) Consultation and collaboration

(vii) Public awareness

(viii) Management effectiveness

(ix) Adaptive management

D) National Framework for Canada's Network of Marine Protected Areas

The National Framework for Canada's Network of Marine Protected Areas[123] (the Framework) provides guidance for establishing MPA networks in Canada's 13 bioregions:[124] Strait of Georgia, Southern Shelf, offshore Pacific, Northern Shelf, Arctic Basin, Western Arctic, Arctic Archipelago, Eastern Arctic, Hudson Bay Complex, NL-Labrador Shelves, Scotian Shelf, Gulf of St. Lawrence, and Great Lakes.

The Framework establishes, *inter alia*, an overarching vision and network goals; defines MPAs and MPA networks; and provides guidance on network design and on the bioregional network planning process. Ultimately, the Framework

[117] Ibid., at 3.
[118] *MPA Strategy*, at 4.
[119] *MPA Strategy*, at 7.
[120] See Section 2 of this paper for analysis of key elements of these international instruments and agreements applicable to Canada.
[121] The strategy defines the precautionary principle in the context of MPAs as "(…) where the threat or risk can be inferred, this could mean that lack of scientific certainty regarding performance measures, targets, and benefits will not be used as a reason not to precede with a designation." (*MPA Strategy*, at 11).
[122] Recognizing the constitutional and treaty rights of Aboriginal peoples in Canada, as well as rights derived from land claims agreements, the *MPA Strategy* emphasizes the federal government's commitment to work collaboratively with affected Aboriginal peoples toward the planning,establishment, and management of MPAs. (*MPA Strategy*, at 11).
[123] Government of Canada, *National Framework for Canada's Network of Marine Protected Area*s (Ottawa: Fisheries and Oceans Canada, 2011)
[124] See Annex II for a map of the 13 bioregions.

provides consistent guidance for the implementation of Canada's political commitment at the 2002 World Summit on Sustainable Development to establish an ecologically representative network of MPAs by 2012.[125]

The vision of the Framework conforms with the recent decisions at the CBD Conference of the Parties' with respect to MPA networks, as it refers to "an ecologically comprehensive, resilient, and representative national network of marine protected areas that protects the biological diversity and health of the marine environment for present and future generations."[126]

Three overarching goals are defined under Section 3 of the Framework:

1. To provide long-term protection of marine biodiversity, ecosystem function, and special natural features.
2. To support the conservation and management of Canada's living marine resources and their habitats, and the socio-economic values and ecosystem services they provide.
3. To enhance public awareness and appreciation of Canada's marine environments and rich maritime history and culture.[127]

It is important to note that the long-term protection of marine biodiversity, ecosystem function, and special natural features is the primary goal of the network, and the other two goals are secondary.

The definition of MPA conforms with the IUCN definition as follows: "A clearly defined geographical space recognized, dedicated, and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values."[128] It makes reference to the IUCN categories of protected areas,[129] but it does not establish minimum standards for MPAs, minimum targets,[130] and timelines for the actual implementation of the MPA networks. Nonetheless, the *Framework* recognizes that ecologically meaningful targets and timelines can be established as part of the bioregional network planning process.[131]

It is noteworthy that under the CBD Conference of the Parties (COP) 10 in 2010, Canada has committed to conserve at least 10 per cent of marine areas, "especially areas of particular importance for biodiversity and ecosystem services, (…) through effectively and equitably managed, ecologically representative, and well-connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscape and seascapes"[132] by 2020.

Apart from the formally established MPAs (as described under Section 1 of this report), other conservation mechanisms can be considered as contributory sites to the MPA network goals. These instruments include *Fisheries Act* closures and critical habitats under SARA, but these should not count towards the 10% target.[133]

The *Framework* defines MPA networks in accordance with the IUCN/WCPA (2007) definition as follows: "A collection of individual marine protected areas that operates cooperatively and synergistically, at various spatial scales, and with a range of protection levels, in order fulfill ecological aims more effectively and comprehensively than individual sites could alone."[134]

To be integrated into the network, an MPA must have the following characteristics:

1. Meets Canada's network definition of a marine protected area, including each of the key terms as described by the IUCN (see IUCN Section 4 and Annex 2.2);

[125] World Summit on Sustainable Development, *Johannesburg Plan of Implementation* (2002), para. 32(c).
[126] Government of Canada, National Framework, at 6.
[127] Ibid., at 6.
[128] Ibid., at 7.
[129] Ibid., Annex 2.2.
[130] For example, the *Framework* does not set minimum numerical targets for the percentage of the bioregions to be protected through MPAs or zones within MPAs that fall into IUCN categories I-III (strictly protected or no-take areas), as recommended by a number of scientific studies. The minimum percentages recommended vary from 10% to 50% according to studies such as Bohnsack JA, Causey B, Crosby MT, et al. 2000. *A Rationale for Minimum 20–30% No- Take Protection.* Proceedings of the 9th International Coral Reef Symposium; 23–27 Oct 2000; Bali, Indonesia. Penang, Malaysia: The World Fish Center. Airame S, Dugan JE, Lafferty KD, et al. 2003. *Applying Ecological Criteria to Marine Reserve Design: A case study from the California Channel Islands*. Ecol Appl 13: S170–84; Fernandes L, Day J, Lewis A, et al. 2005. *Establishing Representative No-Take Areas in the Great Barrier Reef: Large-Scale Implementation of Theory on Marine Protected Areas*. Conserv Biol 19: 1733–44; Green AL, Lokani P, Sheppard S, et al. 2007. *Scientific Design of a Resilient Network of Marine Protected Areas*. Kimbe Bay, Papua New Guinea: The Nature Conservancy. Pacific Island Countries Rep No 2/07; *Royal Commission of Environmental Pollution's Turning the Tide Report* (2004); Roberts, CM, Mason, LC and Hawkins, JP. 2006. *Roadmap to Recovery: A Global Network of Marine Reserves*. (Greenpeace International, Amsterdam).
[131] Government of Canada (2011), *National Framework* (Ottawa: Fisheries and Oceans Canada, 31 pp.), at 19.
[132] CBD, COP 10, Decision X/2, Target 11 of *the Strategic Plan for Biodiversity 2011-2020*.
[133] See Day J., Dudley N., Hockings M., Holmes G., Laffoley D., Stolton S. & S. Wells, 2012. *Guidelines for applying the IUCN Protected Area Management Categories to Marine Protected Areas*. Gland, Switzerland: IUCN. 36pp.
[134] Government of Canada (2011), *National Framework* (Ottawa: Fisheries and Oceans Canada, 31 pp.), at 08.

2. contributes to MPA network goal #1; and
3. has a management plan, or protection guidance explicitly specified in supporting legislation or regulations, and is being effectively managed to achieve the MPA network goal(s).[135]

With respect to the network design, the *Framework* adopts the criteria agreed on during the CBD COP 9 (2008); namely,

1. Ecologically and Biologically Significant Areas (EBSAs);[136]
2. Representativity – an MPA network bioregion should include a number of habitat types and many species that will not be encompassed within a single large-scale representative MPA.

   "Establishing a network of MPAs that captures examples of all habitat types within the bioregion will ensure that the finer-scale elements of biodiversity (e.g., species, communities) and physical characteristics (e.g., oceanographic conditions, bathymetry, geology) are also protected. The different habitat types in a bioregion can be identified and delineated using habitat classification schemes based on the best available physical and biological information";[137]
3. "Connectivity – ensuring that individual MPAs can benefit from each other, for example, by establishing functional linkages between larval production areas and other geographically separate areas required for subsequent life stages;
4. Replication – ensuring that more than one example of each ecological feature (i.e., species such as whales, fish, seabirds, invertebrates; habitats such as seamounts, banks, basins, canyons; ecological processes such as upwelling) is protected to safeguard against unexpected loss from natural events or human disturbance; and
5. Adequacy/viability – ensuring that all MPAs in the network have the size and protection necessary for ecological viability and integrity. MPAs need to be large enough and sited appropriately to protect and maintain ecological processes that help to maintain biodiversity (such as nutrient flows, disturbance regimes, and food-web interactions)."[138]

Culturally important areas could also be added to the MPA network if they are compatible with the national network goals and eligibility criteria discussed above. The criteria selecting these culturally important areas include:

1. Special importance for cultural heritage: an area where use of the marine environment and living marine resources are or have been of particular cultural or historical importance (e.g., for the support of traditional subsistence activities for food, social, or ceremonial use; significant historical and archaeological sites, heritage wrecks);
2. Public use and enjoyment: an area that offers outstanding recreational opportunities and aesthetic and/or spiritual values (e.g., sport fishing, boating, sea kayaking, diving, wildlife viewing); and
3. Education: an area that offers an exceptional opportunity to inform the public about the value of protecting the marine environment or to enhance awareness of particular natural and cultural features or phenomena (e.g., through outreach programs, visitor centres).[139]

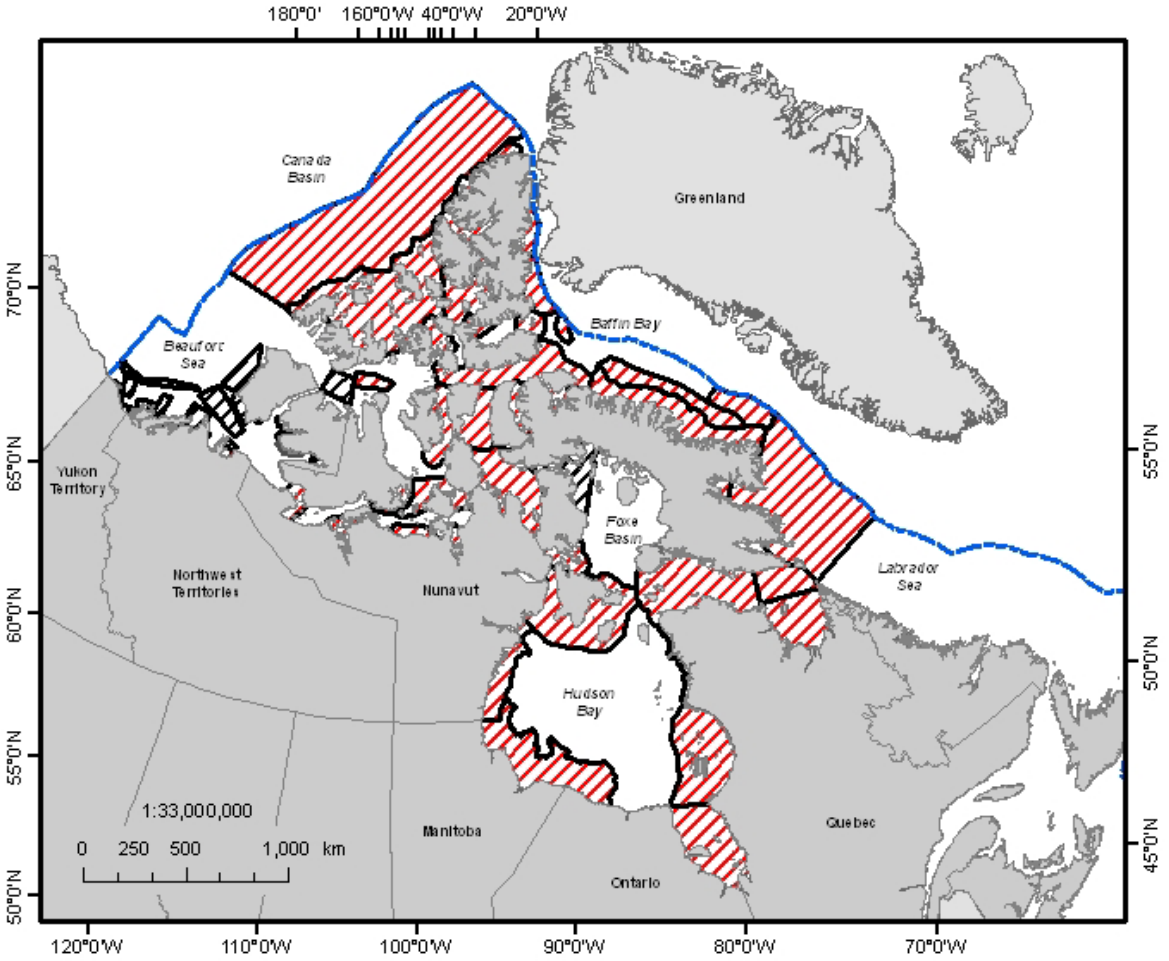
The *Framework* also describes the planning process for establishing bioregional MPA networks as follows:[140]

1. Identify and involve stakeholders and others. It is important to note that other federal, provincial, and territorial agencies will also participate in this process, including Parks Canada and Environment Canada.
2. Compile, analyze, and geo-reference available scientific, traditional, and economic information for the bioregion.
3. Set clear, measurable network objectives and conservation targets for each bioregion (i.e., how much of each ecological feature, function, or value needs to be protected within the network).
4. Apply network design features and properties, identify areas of high conservation value, and perform gap analysis to determine where existing MPAs and other protective measures overlap and where new MPAs and other measures are needed.

[135] Ibid.
[136] See Section 4(B) of this report.
[137] Government of Canada (2011), *National Framework* (Ottawa: Fisheries and Oceans Canada, 31 pp.), at 16.
[138] Ibid.
[139] Ibid., at 16.
[140] Ibid., at 18-19.

5. Consider potential economic and social impacts, and finalize network design. "In the determination of where MPAs and other conservation tools are needed, seek to understand and minimize potential economic and social consequences. However, flexibility in placement of an MPA will not always be possible (e.g., unique habitats such as underwater canyon or hydrothermal vent). Conservation planning software may be employed again at this stage to support discussions with stakeholders and the public and inform decision-making. The software can produce different MPA network scenarios (e.g., by altering targets) that allow people to visualize possible network designs. Design of the network is finalized."[141]
6. "Finalize a bioregional network action plan that includes the network sites, appropriate conservation measures, and responsible authorities. The network action plan should include estimated budget and resource requirements. The action plan could also identify ecologically meaningful targets for the percent of a bioregion to be protected by a specific date."[142]
7. Undertake site-specific planning and implementation with public involvement.
8. Manage and monitor the MPA network.

EBSAs have been identified in the 5 Canadian Arctic bioregions,[143] and in a number of other bioregions.



Source: *'DFO. 2011. Identification of Ecologically and Biologically Significant Areas (EBSA) in the Canadian Arctic. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2011/055.'* For more information on how this data was created please contact Katie Lilly (katie.lilly@uk.rsagroup.com)

[141] Ibid., at 19.
[142] Ibid.
[143] DFO, CSAs, Identification of Ecologically and Biologically Significant Areas (EBSA) in the Canadian Arctic, Science Advisory Report 2011/055.

E) Policy for Managing the Impacts of Fishing on Sensitive Benthic Areas

DFO's *Policy for Managing the Impacts of Fishing on Sensitive Benthic Areas*[144] makes use of the Canadian EBSA criteria (i.e., uniqueness, aggregation, fitness consequences, resilience, and naturalness) among others to identify sensitive benthic habitats.

This policy establishes that specific conservation measures may be granted to those significant benthic features when there is risk of serious or irreversible harm from an existing or new fishing activity. Fisheries closures, gear modification, and other mitigation techniques could be interpreted as a necessary conservation measure to protect these features. In order to determine whether these features are at risk, the policy requires a risk analysis to be undertaken. Results of the ecological risk analysis are to be considered along with socio-economic factors in order to determine the appropriate management and mitigation measures to be adopted.

To guide the development of the risk analysis, DFO has recently adopted the *Ecological Risk Assessment Framework (ERAF) for Coldwater Corals and Sponge Dominated Communities*.

The *Policy for Managing the Impacts of Fishing on Sensitive Benthic Areas* applies to all commercial, recreational, and Aboriginal fisheries both inside and outside Canadian EEZs, and establishes separate processes for historically fished areas and frontier areas where data is often poor.

Section 4: International Policy and Legal Framework Applicable in Canadian Waters

This section will analyze relevant existing international policy and legal instruments.

A) The United Nations Convention on the Law of the Sea

The United Nations Convention on the Law of the Sea[145] (UNCLOS), which Canada became a party to in 2003, is the main treaty that regulates activities at sea and the protection of the marine environment.

UNCLOS also establishes the legal regime under which sovereignty, sovereign rights, and jurisdiction must be exercised by States over their maritime zones (i.e., internal waters, territorial sea, contiguous zone, EEZ, and continental shelf). It also highlights the special condition of ice-covered areas, establishing that:

Coastal States have the right to adopt and enforce non-discriminatory laws and regulations for the prevention, reduction, and control of marine pollution from vessels in ice-covered areas within the limits of the exclusive economic zone, where particularly severe climatic conditions and the presence of ice covering such areas for most of the year create obstructions or exceptional hazards to navigation, and pollution of the marine environment could cause major harm to or irreversible disturbance of the ecological balance. Such laws and regulations shall have due regard to navigation and the protection and preservation of the marine environment based on the best available scientific evidence.[146]

Within this context, it is important to consider some international processes that can ultimately influence the establishment of protected areas in the Canadian Arctic. At the international level, a number of soft-law instruments have started to address adaptation measures to climate change, including in the Arctic, through the establishment of a network of MPAs. The United Nations General Assembly (UNGA) Resolution A/RES/62/215 (2008) expresses its "serious concern over the current and projected adverse effects of anthropogenic and natural climate change on the marine environment and marine biodiversity,"[147] as well as "over the vulnerability of the environment and the fragile ecosystems of the polar regions, including the Arctic Ocean and the Arctic ice cap, particularly affected by the projected adverse effects of climate change."[148] In view of this, the resolution "encourages States individually or in collaboration with relevant international organizations and bodies, to enhance their scientific activity to better understand the effects of climate change on the marine environment and marine biodiversity and develop ways and means of adaptation."[149] One of the most effective

[144] DFO *Policy for Managing the Impacts of Fishing on Sensitive Benthic Areas* (2009).
[145] United Nations Convention on the Law of the Sea, 10 December 1982, 1883 U.N.T.S. 397 [UNCLOS].
[146] UNCLOS, Art. 234.
[147] UNGA Resolution A/RES/62/215, preambular para.
[148] Ibid.
[149] Ibid., para. 82.

climate change adaptation strategies is the creation of a network of protected areas to protect ecosystems' structure and function, and enhance ecosystem resilience to climate change. In 2009, the UNGA Resolution A/RES/63/111 reiterated its "serious concern over the current and projected adverse effects of climate change on the marine environment and marine biodiversity, and [emphasizes] the urgency of addressing this issue."[150] The resolution also reiterates its "deep concern" over vulnerable ecosystems of the polar regions.

It is noteworthy that even though UNGA resolutions are considered non-binding instruments, they do have a role in the interpretation of UNCLOS. First, UNGA resolutions on Oceans and the Law of the Sea are adopted by consensus, and in some cases can be interpreted as an expression of *opinio juris* of States. As noted by Diz Pereira Pinto:

> (…) As an expression of *opinio juris*, Fitzpatrick states that "Resolutions of the General Assembly [GA] can have an effect on international law either by serving as the basis for the development of customary law (state practice accepted as law), or through the subsequent incorporation of the principles contained in the resolution into a legally binding instrument."
>
> In the case of the GA Resolutions on the Law of the Sea, it is important to emphasise that they have the role of reviewing the developments of ocean affairs since the adoption of UNCLOS.
>
> Having said that, in accordance [with] the VCLT [Vienna Convention on the Law of Treaties] Art. 31(3)(a), the *opinio juris* of States reflected in such instruments should be viewed as an interpretation of UNCLOS in the light of new developments of oceans affairs. It is not a matter of modifying UNCLOS. However, reaching consensus on a Resolution [that does not include recommendations contrary to UNCLOS provisions and principles] should be considered an expression of *opinio juris* that ultimately leads to a systemic and evolutionary interpretation of UNCLOS.[151]

UNCLOS also establishes the obligation of States to protect and preserve the marine environment.[152] In this light, States must take measures to prevent, reduce, and control pollution of the marine environment, including "those necessary to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened, or endangered species and other forms of marine life."[153] In preventing, reducing, and controlling pollution from vessels, the International Maritime Organization (IMO) has a significant role to play under the regime established by UNCLOS. For example, Article 211 of UNCLOS establishes that States shall adopt laws and regulations for the prevention, reduction, and control of pollution of the marine environment from vessels flying its flag or of its registry, and that such laws and regulations shall *at least* have the same effect as that of generally accepted international rules and standards established by IMO.[154] These standards include soft-law standards, such as protocols and guidelines. As for foreign vessels, Coastal States may adopt laws and regulations for the prevention, reduction, and control of marine pollution in their territorial seas as long as it does not hinder the right to innocent passage of the foreign vessel.[155] In the EEZ, Coastal States may adopt laws and regulations for the prevention, reduction, and control of pollution from vessels conforming and giving effect to generally accepted international rules and standards established by IMO. Article 211(6)(a) also provides for the appropriate procedures for adopting special laws and regulations to prevent pollution in special areas located within a coastal state EEZ.

i) IMO Revised Guidelines for the Identification and Designation of Particular Sensitive Sea Areas

IMO Resolution A.982(24) adopted the *Revised Guidelines for the Identification and Designation of Particular Sensitive Sea Areas* (PSSAs). PSSAs can be designated in sea areas that require enhanced protection from pollution from shipping activities due to ecological, socioeconomic, or scientific attributes.

IMO is the only international body responsible for designating areas as PSSAs and adopting associated protective measures. An application to IMO for designation of a PSSA and the adoption of associated protective measures are to be submitted only by an IMO member government. In Canada, Transport Canada is the agency responsible for submitting an application. Where two or more governments have a common interest in a particular area, they should formulate a coordinated proposal.[156]

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[150] UNGA Resolution A/RES/63/111, preambular para.
[151] D. Diz Pereira Pinto, *Fisheries Management in Areas Beyond National Jurisdiction: The Impact of Ecosystem Based Law-Making (Legal Aspects of Sustainable Development),* (Boston/Netherlands: Brill/Martinus Nijhoff, 2012), at 49.
[152] UNCLOS, Art. 192.
[153] Ibid., Art 194(5).
[154] Ibid., Art. 211(2).
[155] Ibid., Art. 211(4).
[156] IMO, *Revised Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas*, IMO Resolution A. 982(24), at para. 3.1.

The application must be submitted to the IMO Marine Environment Protection Committee (MEPC) based on the criteria outlined in Section 4 (i.e., ecological criteria, socio-economic criteria, or scientific and educational criteria) of the guidelines A.982(24), and provide:

a) information pertaining to the vulnerability of this area to damage from international shipping activities (as outlined in Section 5 of the guidelines); and

b) the proposed associated protective measures (as outlined in Section 6 of the guidelines) to prevent, reduce, or eliminate the identified vulnerability.

Applications should be submitted in accordance with the procedures set forth in Section 7 of the guidelines and the rules adopted by IMO for submission of documents. The designation process can be quite fast. For example, the Papahanaumokuakea PSSA took less than one year for its final designation after the submission of the application.

In order to be identified as a PSSA, the area should meet at least one of the criteria[157] listed below:

(a) Ecological criteria

Uniqueness or rarity – An area or ecosystem is unique if it is "the only one of its kind."

Habitats of rare, threatened, or endangered species that occur only in one area are an example. An area or ecosystem is rare if it only occurs in a few locations or has been seriously depleted across its range. An ecosystem may extend beyond country borders, assuming regional or international significance. Nurseries or certain feeding, breeding, or spawning areas may also be rare or unique. Critical habitat – A sea area that may be essential for the survival, function, or recovery of fish stocks or rare or endangered marine species, or for the support of large marine ecosystems.

Dependency – An area where ecological processes are highly dependent on biotically structured systems (e.g., coral reefs, kelp forests, mangrove forests, seagrass beds).

Dependency also embraces the migratory routes of fish, reptiles, birds, mammals, and invertebrates.

Representativeness – An area that is an outstanding and illustrative example of specific biodiversity, ecosystems, ecological or physiographic processes, or community or habitat types, or other natural characteristics.

Diversity – An area that may have an exceptional variety of species or genetic diversity, or includes highly varied ecosystems, habitats, and communities.

Productivity – An area that has a particularly high rate of natural biological production.

Such productivity is the net result of biological and physical processes that result in an increase in biomass in areas such as oceanic fronts, upwelling areas, and some gyres.

Spawning or breeding grounds – An area that may be a critical spawning or breeding ground or nursery area for marine species that may spend the rest of their life cycle elsewhere, or is recognized as migratory routes for fish, reptiles, birds, mammals, or invertebrates.

Naturalness – An area that has experienced a relative lack of human-induced disturbance or degradation.

Integrity – An area that is a biologically functional unit, an effective, self-sustaining ecological entity.

Fragility – An area that is highly susceptible to degradation by natural events or by the activities of people. Biotic communities associated with coastal habitats may have a low tolerance to changes in environmental conditions, or they may exist close to the limits of their tolerance (e.g., water temperature, salinity, turbidity, or depth). Such communities may suffer natural stresses such as storms or other natural conditions (e.g., circulation patterns) that concentrate harmful substances in water or sediments, low flushing rates, and/or oxygen depletion. Additional stress may be caused by human influences such as pollution and changes in salinity. Thus, an area already subject to stress from natural and/or human factors may be in need of special protection from further stress, including that arising from international shipping activities.

Biogeographic importance – An area that either contains rare biogeographic qualities or is representative of a biogeographic type(s), or contains unique or unusual biological, chemical, physical, or geological features.

(b) Social, cultural, and economic criteria

[157] Ibid., s. 4.

Social or economic dependency – An area where the environmental quality and the use of living marine resources are of particular social or economic importance, including fishing, recreation, tourism, and the livelihoods of people who depend on access to the area.

Human dependency – An area that is of particular importance for the support of traditional subsistence or food production activities, or for the protection of the cultural resources of the local human populations.

Cultural heritage – An area that is of particular importance because of the presence of significant historical and archaeological sites.

(c) Scientific and educational criteria

Research – An area that has high scientific interest.

Baseline for monitoring studies – An area that provides suitable baseline conditions with regard to biota or environmental characteristics, because it has not had substantial perturbations or has been in such a state for a long period of time such that it is considered to be in a natural or near-natural condition.

Education – An area that offers an exceptional opportunity to demonstrate particular natural phenomena.

Other factors that must be taken into account in the designation of a PSSA are vessel traffic characteristics, such as operational factors, vessel types, volume of traffic, harmful substances carried; natural factors, such as hydrographical, meteorological, and oceanographic characteristics of the area in question.

Protective measures for PSSAs include the following:[158]

Designation of an area as a Special Area under MARPOL Annexes I, II, or V, or an SOx emission control area under MARPOL Annex VI, or application of special discharge restrictions to vessels operating in a PSSA.

Adoption of ships' routeing and reporting systems near or in the area, under the International Convention for the Safety of Life at Sea and in accordance with the *General Provisions on Ships' Routeing* and the *Guidelines and Criteria for Ship Reporting Systems*. For example, a PSSA may be designated as an area to be avoided, or it may be protected by other ships' routeing or reporting systems.

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.

Strict application of MARPOL discharge and equipment requirements for ships, such as oil tankers; and installation of Vessel Traffic Services.

ii) MARPOL's Special Areas

Special Areas under the 1973 International Convention for the Prevention of Pollution from Ships, modified by the 1978 Protocol relating thereto (MARPOL 73/78), can be designated in order to prevent pollution from ships (by oil, noxious liquid substances, garbage, or air pollution) in a particular area due to technical reasons relating to its oceanographic and ecological conditions, and to traffic characteristics.

IMO Resolution A.927(22) adopted the guidelines for the designation of Special Areas under MARPOL 73/78.

Special Areas are conferred with enhanced protection since discharges of oily waste and some chemical residues are prohibited. Improved enforcement mechanisms, including stricter port state control under MARPOL, also promotes further compliance by flag states.

One of the challenges associated with the designation of Special Areas relates to the requirement that a Special Area designation can only become effective when adequate reception facilities are provided for ships in accordance with the provisions of MARPOL 73/78.

[158] IMO, *Revised Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas*, IMO Resolution A.982(24), at s. 6.

B) The United Nations Convention on Biological Diversity

The CBD was adopted in 1992 with the objectives to conserve biological diversity and promote the sustainable use of biodiversity components. In order to reach these objectives, it provides for the establishment of a system of protected areas for the conservation of biological diversity by its *contracting parties*.[159]

During the CBD's tenth Conference of the Parties (COP 10) in 2010, States Parties (which includes Canada) were invited to implement a set of actions to increase adaptive capacity of species and the resilience of ecosystems in the face of climate change, including:

i. reducing non-climatic stresses, such as pollution, over-exploitation, habitat loss and fragmentation, and invasive alien species;

ii. reducing climate-related stresses, where possible, such as through enhanced adaptive and integrated water resource and marine and coastal management;

iii. strengthening protected area networks, including through the use of connectivity measures such as the development of ecological networks and ecological corridors, and the restoration of degraded habitats and landscapes in accordance with Decision IX/18 on protected areas and the program of work on protected areas (goal 1.2, activity 1.2.3);

iv. integrating biodiversity into wider seascape and landscape management;

v. restoring degraded ecosystems and ecosystem functions; and

vi. facilitating adaptive management by strengthening monitoring and evaluation systems.[160]

The CBD COP 10 decision on biodiversity and climate change also invited States to "[d]evelop a strategy for biodiversity conservation and sustainable use, including landscape and seascape management in those areas that are becoming accessible to new uses as a consequence of climate change."[161] This decision is obviously applicable to the Arctic.

Also important in this context is CBD COP 9 Decision IX/20, which adopted recommendations concerning MPA network design. The design criteria recommended by COP 9 include the following elements: EBSAs, representativity, connectivity, replicated ecological features, and adequate and viable sites.[162] EBSAs should be identified and incorporated into the MPA network design,[163] along with enduring features that will serve as refuges for relocated species.[164] The criteria for identifying EBSAs was adopted by CBD[165] Decision IX/20, and includes the following characteristics: uniqueness or rarity; special importance for life-history stages of species; importance for threatened, endangered, or declining species and/or habitats; vulnerability, fragility, sensitivity, or slow recovery; biological productivity; biological diversity; and naturalness.[166]

The *National Framework for Canada's Network of Marine Protected Areas* (discussed above) recognizes the CBD criteria. The next step in creating a national network of MPAs in Canada is to develop bioregional MPA network plans.

The *Framework* recognizes five bioregions in the Arctic: The Hudson Bay Complex, the Arctic Archipelago, the Arctic Basin, the Eastern Arctic, and the Western Arctic.

C) FAO Guidelines for the Management of Deep-Sea Fisheries in the High Seas

The objective of the FAO Guidelines for the Management of Deep-Sea Fisheries in the High Seas is to provide tools and guidance to States and Regional Fisheries Management Organizations on the sustainable use of marine living resources exploited by deep-sea fisheries and the prevention of significant adverse impacts on vulnerable marine ecosystems

[159] CBD, Art. 8.
[160] CBD COP 10, "Biodiversity and Climate Change," Decision as adopted (Advance unedited version), para. 8(d).
[161] Ibid., para. 8(f).
[162] CBD COP 9, Decision IX/20, Annex II (i.e., [a] ecologically and biologically significant areas; representativity; connectivity; replicated ecological features; and adequate and viable sites).
[163] Ibid.
[164] C.J. Lemieux, T.J. Beechey, D.J. Scott and P.A. Gray. 2010. *Protected Areas and Climate Change in Canada: Challenges and Opportunities for Adaptation*. Canadian Council on Ecological Areas (CCEA) Occasional Paper No. 19. CCEA Secretariat, Ottawa, Ontario, Canada. xii + 170 pp. 160 CBD, 5 June 1992, 170 U.N.T.S. 79.
[165] CBD, 5 June 1992, 170 U.N.T.S. 79.
[166] CBD COP 9, Decision IX/20, Annex I (2008).

(VMEs), such as corals, sponges, spawning grounds, and the protection of marine biodiversity that these ecosystems contain.

Even though the FAO Guidelines are aimed at the high seas, paragraph 10 establishes that Coastal States may apply these guidelines within their national jurisdictions, as appropriate. It is interesting to note that these guidelines and previous UN General Assembly resolutions on VMEs have triggered DFO to adopt the Policy for Managing the Impacts of Fishing on Sensitive Benthic Areas, which is to be applied in Canadian waters.

The FAO Guidelines refers to fisheries closures and impact assessments prior to bottom fishing activities as some of the conservation measures that should be adopted to protect VMEs. The following list of characteristics should be used as criteria in their identification:[167]

i. Uniqueness or rarity – an area or ecosystem that is unique or that contains rare species whose loss could not be compensated for by similar areas or ecosystems. These include:

   • habitats that contain endemic species

   • habitats of rare, threatened, or endangered species that occur only in discrete areas

   • nurseries or discrete feeding, breeding, or spawning areas

ii. Functional significance of the habitat – discrete areas or habitats that are necessary for the survival, function, spawning/reproduction or recovery of fish stocks, particular life-history stages (e.g., nursery grounds or rearing areas), or of rare, threatened, or endangered marine species.

iii. Fragility – an ecosystem that is highly susceptible to degradation by anthropogenic activities.

iv. Life-history traits of component species that make recovery difficult – ecosystems that are characterized by populations or assemblages of species with one or more of the following characteristics:

   • slow growth rates

   • late age of maturity

   • low or unpredictable recruitment

   • long-lived

v. Structural complexity – an ecosystem that is characterized by complex physical structures created by significant concentrations of biotic and abiotic features. In these ecosystems, ecological processes are usually highly dependent on these structured systems. Further, such ecosystems often have high diversity, which is dependent on the structuring organisms.[168]

Examples of VMEs in accordance with the FAO Guidelines are, *inter alia*, cold-water corals; sponges; topographical and geological features such as canyons and trenches, hydrothermal vents, and seamounts.

This is important, because corals and sponges are known to occur throughout the Canadian EEZ, including in the Arctic. In the Eastern Arctic, for example, significant aggregations of corals and sponges that qualify as VMEs were identified by research vessel surveys.[169] The *Policy for Managing the Impacts of Fishing on Sensitive Benthic Areas* and its *Risk Assessment Framework* also apply in this case.

D) World Heritage Site Convention

The objective of World Heritage Sites is the identification, protection, conservation, presentation, and transmission to future generations of cultural and natural heritage of outstanding universal value.

World Heritage Sites can be designated by States Parties to the UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage, of which Canada is a party.

[167] *FAO Guidelines for the Management of Deep-Sea Fisheries in the High Seas*, (2009), para. 42.
[168] Ibid.
[169] DFO, Canadian Science Advisory Secretariat (CSAS), *Science Advisory Report 2010/041: Occurrence, Sensitivity to Fishing, and Ecological Function of Corals, Sponges, and Hydrothermal Vents in Canadian Waters* (September 2010). See also DFO, CSAS, Science Advisory Report 2012/003: *Arctic Marine Biodiversity: Indicators for Monitoring Coral and Sponge Megafauna in the Eastern Arctic* (2012).

The first step of the nomination process is to make an inventory of Canada's important natural and cultural heritage sites. This inventory is denominated as "tentative list" and can be updated at any time. The tentative list provides a forecast of the properties that the State may decide to submit for inscription to the World Heritage Committee (WHC) for the next five to 10 years. The next step is to present a nomination file, with respective maps and necessary documentation. The World Heritage Centre offers advice and assistance to the Parties in preparing this file. The final decision is provided by the WHC after the nominated property is independently evaluated by advisory bodies of the Convention. The WHC meets yearly and decides which sites will be inscribed on the World Heritage List. Criteria for a site to be incorporated into the World Heritage List include:

a) contains superlative natural phenomena or is of exceptional natural beauty and aesthetic importance

b) is an outstanding example representing major stages of Earth's history, including the record of life, significant ongoing geological processes in the development of landforms, or significant geomorphic or physiographic features

c) is an outstanding example representing significant ongoing ecological and biological processes in the evolution and development of terrestrial, freshwater, coastal, and marine ecosystems, and communities of plants and animals

d) contains the most important and significant natural habitats for in situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation

To date, Canada does not have any marine World Heritage Sites. The following are areas that have been designated as World Heritage Sites in Canada to date:[170]

L'Anse aux Meadows National Historic Site

Nahanni National Park

Dinosaur Provincial Park

Kluane / Wrangell-St Elias / Glacier Bay / Tatshenshini-Alsek

Head-Smashed-In Buffalo Jump

SGang Gwaay

Wood Buffalo National Park

Canadian Rocky Mountain Parks

Historic District of Old Québec

Gros Morne National Park

Old Town Lunenburg

Waterton Glacier International Peace Park

Miguasha National Park

Rideau Canal

Joggins Fossil Cliffs

Landiscape of Grand Pré

Canada's tentative list includes the following sites:

Áísínai'pi (Writing-On-Stone)

Pimachiowin Aki

Gwaii Haanas

Ivvavik / Vuntut / Herschel Island (Qikiqtaruk)

[170] UNESCO, World Heritage List. Online: http://whc.unesco.org/en/list/

The Klondike

Mistaken Point

Quttinirpaaq

Red Bay

Strengths of WHC sites include:

a) Deliberate measures that might damage directly or indirectly the heritage site are prohibited by the Convention (Article 6[3]).

b) Access to the World Heritage Fund is provided to assist with studies, capacity building, provisions of experts, technicians, etc. for protection, conservation, presentation, and rehabilitation of natural and cultural heritage sites.

c) States Parties to the Convention are encouraged to ensure the participation of a wide variety of stakeholders, including site managers, local and regional governments, local communities, non-governmental organizations, and other interested parties and partners in the identification, nomination, and protection of World Heritage properties.

d) Boundaries should reflect the spatial requirements of habitats, species, processes, or phenomena that provide the basis for their inscription on the World Heritage List. The boundaries should include sufficient areas immediately adjacent to the area of outstanding universal value in order to protect the property's heritage values from direct effect of human encroachments and impacts of resource use outside of the nominated area.

e) Buffer zones are encouraged.

f) Although buffer zones are not normally part of the nominated property, any modifications to the buffer zone subsequent to inscription of a property on the World Heritage List should be approved by the WHC.

g) Each nominated site should have an appropriate management plan or other documented management system that should specify how the outstanding universal value of a property should be preserved, preferably through participatory means.

h) Minor modification of the boundaries can be adopted without the need to resubmit an application for nomination of the site.

i) Transboundary Marine World Heritage Sites can be established when natural sites of outstanding universal value extend across the marine boundaries of two or more States.

One of the limitations of WHC sites is the following:

> Nominations shall demonstrate the full commitment of the State Party to preserve the heritage concerned, through appropriate policy, legal, scientific, technical, administrative, and financial measures adopted and proposed to protect the property and its outstanding universal value. The process can take a long time in areas that are not currently protected.

E) RAMSAR Convention

The objective of the RAMSAR Convention is the conservation and wise use of all wetlands through local and national actions, and international cooperation, as a contribution toward achieving sustainable development throughout the world.

Wetlands are defined under the Convention as "areas of marsh, fen, peatland, or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish, or salt, including areas of marine waters the depth of which at low tide does not exceed six metres."[171]

"Wise use" was defined by RAMSAR COP 9 (2005) as "the maintenance of their [wetlands] ecological character, achieved through the implementation of ecosystem approaches, within the context of sustainable development."

[171] RAMSAR Convention, Art. 1.1.

Environment Canada, through the Canadian Wildlife Service, is the lead federal department responsible for the Convention. To date, 37 sites have been designated as RAMSAR sites in Canada.

Some of the strengths of RAMSAR sites are, *inter alia*:

a) Transboundary RAMSAR sites can be established when an ecological coherent wetland extends across national borders, and the RAMSAR site government of the respective States formally agree to collaborate in its management.

b) Contracting Parties are expected to manage their RAMSAR sites so as to maintain the ecological character of each site and, in so doing, retain those essential ecological and hydrological functions, which ultimately provide its "benefits/services."

c) Management plans are required for each RAMSAR site.

d) Sites can be protected under national legislation before or after listing them under the Convention, "but listing them (…) becomes a means of raising their profile and securing national action when they are threatened."[172]

Some of the limitations of RAMSAR sites include:

a) The Convention permits "wise use"[173] of sites recorded on a list maintained by its Secretariat, and neither prohibits nor regulates the taking of species for any purpose, although such use must not affect the ecological characteristics of the wetland.[174]

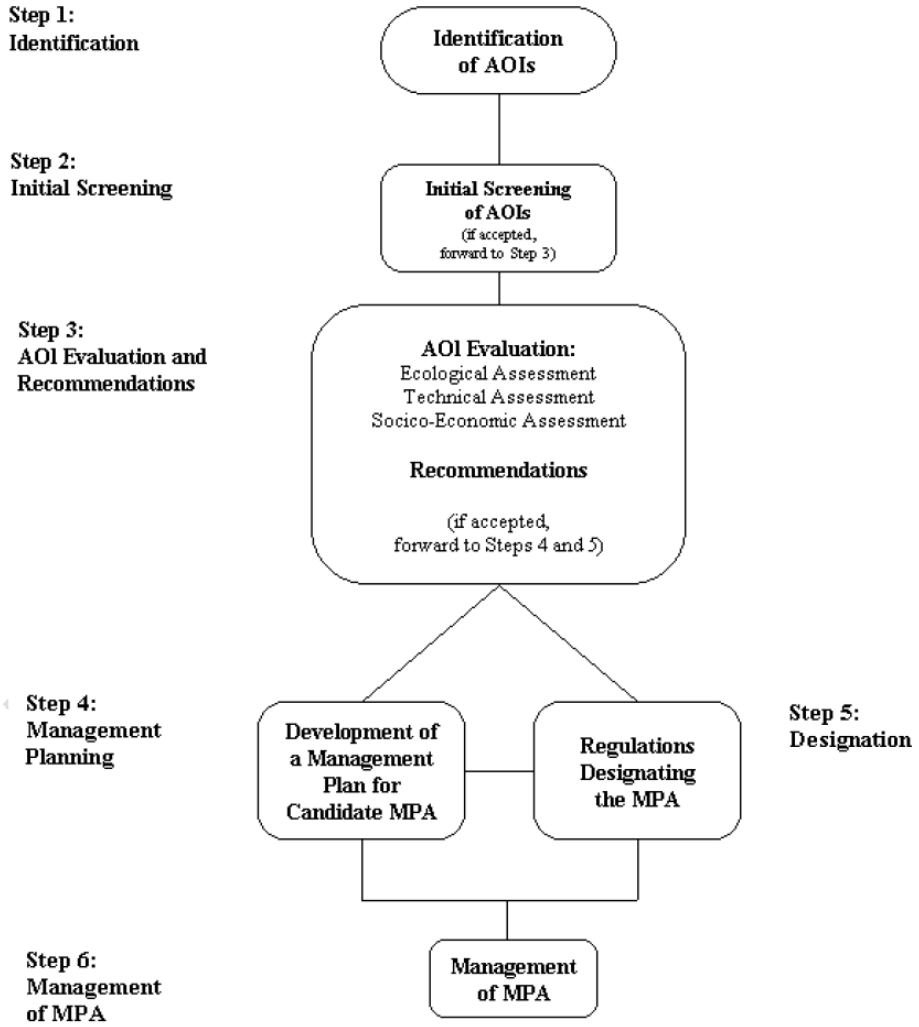
b) Slow development of management plans, a number of which have included only generic conservation objectives, with only a few identifying performance indicators..[175]

[172] P. Birnie, A. Boyle, C. Redgwell, *International Law and the Environment*, Third Ed. (Oxford: Oxford University Press, 2009), at 675.
[173] Ibid.
[174] Ibid., at 673.
[175] Office of the Auditor General of Canada, *2004 October Report of the Commissioner of the Environment and Sustainable Development*., c. 1., at 24.

Annex I – FRAMEWORK FOR ESTABLISHING AND MANAGING MPAs UNDER THE OCEANS ACT

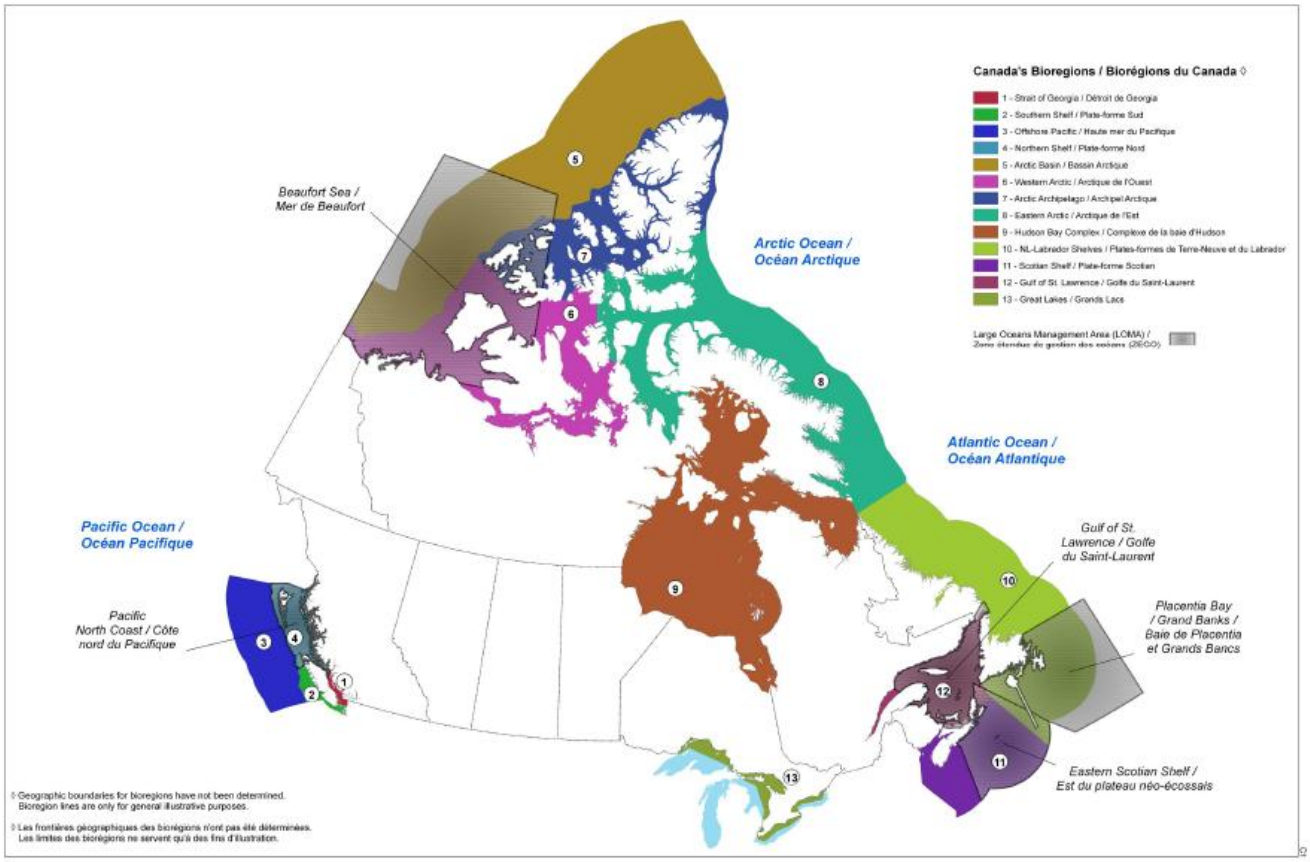
Oceans Act MPA establishment process (in accordance with the *National Framework for Establishing and Managing MPAs, 1997*)

Figure 1: Framework for Establishing and Managing MPAs under the Oceans Act



Annex II – CANADA'S 13 BIOREGIONS

Canada's 13 bioregions



Source: DFO-Oceans; Source of 12 marine bioregions: Canadian Science Advisory Secretariat, *Science Advisory Report 2009/056*; source of 13th bioregion (Great Lakes): *National Framework for Canada's Network of Marine Protected Areas*

Annex III – MPA examples

Oceans Act MPAs

To date, the following eight MPAs have been established through regulations under the *Oceans Act*:

Basin Head MPA

Bowie Seamount MPA

Eastport MPA

Endeavour Hydrothermal Vents MPA

Gilbert Bay MPA

Gully MPA

Musquash Estuary MPA

Tarium Niryutait MPA

DFO's current Areas of Interest:

Race Rocks

St. Lawrence Estuary

Hecate Strait/Queen Charlotte Sound Glass Sponge Reefs

Laurentian Channel

St Anns Bank

Shediac Valley

American Bank

Anuniaqvia niqiqyuam (Darnley Bay)

The regulations that establish MPAs under the *Oceans Act* usually follow the same pattern. They prohibit a number of activities and impacts within the MPAs' boundaries, but then provide for exceptions. For all the MPAs listed above, the regulations prohibit activities that disturb, damage, or destroy the area, or remove any living marine organism or part of its habitat. However, as mentioned above, all regulations allow exceptions to these prohibitions, including commercial fisheries (apart from Eastport MPA) carried out in accordance with the *Fisheries Ac*t. In the case of Basin Head, Gilbert, the Gully, and Musquash MPAs, the regulation restricts the fishing activity to specific zones and target species. In the other cases, zoning is addressed by the respective management plans, which is easier to change/review (usually every five years) and does not have the force of law. In the Tarium Niryutait MPA, for example, oil and gas exploitation through pre-existing SDLs (significant discovery licenses) is allowed within the MPA boundary.

National Marine Conservation Areas (NMCAs):

The Lake Superior National Marine Conservation Area was the first NMCA created since the *Canada National Marine Conservation Areas Act (CNMCA Act)* was adopted in 2002. The process of establishment has taken more than 10 years and is near completion. In 2007, an agreement was signed between the federal government and the provincial government, and a Memorandum of Understanding was signed between Parks Canada and the Lake Superior First Nations.

The most notable NMCA created to date is the Gwaii Haanas National Marine Conservation Area Reserve and Haida Heritage Site. The Gwaii Haanas NMCA Reserve was established in June 2010 under Schedule 2 of the *CNMCA Act*, after a long establishment process. An interim management plan was submitted to Parliament at the time of establishment and will be replaced by a comprehensive management plan in 2015. The Gwaii Haanas NMCA Reserve is cooperatively managed by Parks Canada and the Haida Nation.

Even though mining, and oil and gas development are not allowed within the boundaries of the NMCA, commercial fisheries currently take place in the area. In this respect, the interim management plan states that

> Conservation work will integrate with existing Fisheries and Oceans Canada policies and initiatives including the precautionary approach, offsetting fishing impacts to sensitive benthic habitats and ecosystem considerations of managing forage fish. Protecting select areas, implementing priority management measures, and developing a longer-term protection plan and monitoring framework will be lead priorities. The development of a full suite of ecosystem objectives will be an initial focus of the Archipelago Management Board, as this will serve to guide planning and decision-making.[176]

The interim management plan states that zoning will be put in place to identify areas that need to be strictly protected and areas where sustainable use (i.e., commercial and recreational fishing, ecotourism, public visitation, research and educational activities) will be allowed. In light of this, an interim zoning plan was put into place as part of the *CNMCA Act* zoning requirement. The interim zoning plan reserves six areas, amounting to three per cent of the Gwaii Haanas marine area, for strict protection (i.e., commercial and recreational extraction are not allowed in these areas). The interim zoning plan will also be replaced by a more comprehensive zoning plan in 2015.

National Wildlife Areas:

To date, no marine National Wildlife Areas (NWAs) have been established, even though about 13 terrestrial National Wildlife Areas (NWAs) with marine components have been created, and 51 Migratory Bird Sanctuaries with marine components have been established. Among those, five NWAs were established in Nunavut, including the Niginganiq NWA located on the east coast of Baffin Island. The process of establishment of the Niginganiq NWA took about 20 years.[177]

[176] Gwaii Haanas NMCA Reserve, *Interim Management Plan* (2010).

[177] T. Daoust, W. Haider, S. Jessen, (2010) "Institutional Arrangements Governing Marine Conservation Planning in the Canadian Arctic: The Case of Nunavut, Canada", 37 (3) *Environments Journal* 73-93.

Summary Table Endnotes

i Office of the Auditor General of Canada, *Status Report of the Commissioner of the Environment and Sustainable Development to the House of Commons*, Ecosystems, Chapter 4: Federal Protected Areas for Wildlife (March 2008), at 2.

ii *David Suzuki Foundation et al. v. Canada*, [2010] F.C. 1233, [*Resident Killer Whale* case], at para. 175.

iii Ibid.; *Environmental Defence v. Canada*, [2009] F.C. 878, [*Environmental Defence*], para. 337.

iv Office of the Auditor General of Canada, *Status Report of the Commissioner of the Environment and Sustainable Development to the House of Commons*, Ecosystems, Chapter 5, Protection of Species at Risk (2008), at 2.

v The identification of an EBSA is not a conservation measure per se, but it indicates the need for further protection of that particular site due to its ecological or biological characteristics (*Oceans Act*/CBD, COP 9, Decision IX/20). The DFO's/CBD's criteria to identify EBSAs are the following:

a) Uniqueness or rarity / CBD equivalent: uniqueness or rarity, importance for threatened, endangered, or declining species and/or habitats, biological diversity;

b) Aggregation (density/concentration) / CBD equivalent: special importance for life-history stages of species, biological productivity;

c) Fitness consequences (importance to reproduction/survival) / CBD equivalent: special importance for life history stages of species, biological productivity;

d) Sensitivity (resilience to disturbance) / CBD equivalent: vulnerability, fragility, sensitivity, or slow recovery;

e) Naturalness (undisturbed state of habitat) / CBD equivalent: naturalness.

vi The international policy initiatives on the protection of vulnerable marine ecosystems have influenced Canada's recent policies, such as DFO's *Policy for Managing the Impacts of Fishing on Sensitive Benthic Areas*.

vii Under the United Nations Educational, Scientific and Cultural Organization (UNESCO) Convention Concerning the Protection of the World Cultural and Natural Heritage (1972) [WHC]

viii Natural heritage is defined as "natural features consisting of physical and biological formations or groups of such formations, which are of outstanding universal value from the aesthetic or scientific point of view; geological and physiographical formations and precisely delineated areas which constitute the habitat of threatened species of animals and plants of outstanding universal value from the point of view of science or conservation; natural sites or precisely delineated natural areas of outstanding universal value from the point of view of science, conservation, or natural beauty." (WHC, Art. 2)

ix WHC, Art. 6(3).

x Wetlands are defined under the Convention as "areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres.""(Article 1.1). RAMSAR sites "may incorporate riparian and coastal zones adjacent to the wetlands, and islands or bodies of marine water deeper than six metres at low tide lying within the wetlands." (Article 2.1)

xi "Wise use" was defined by RAMSAR COP 9 (2005) as "the maintenance of their ecological character, achieved through the implementation of ecosystem approaches, within the context of sustainable development."

xii P. Birnie, A. Boyle, C. Redgwell, *International Law and the Environment*, Third Ed. (Oxford: Oxford University Press, 2009), at 673.

xiii The revised guidelines for the identification and designation of Particularly Sensitive Sea Areas, adopted by IMO Resolution A.982(24), provide for the criteria to allow areas to be designated a PSSA, including ecological criteria, such as unique or rare ecosystem, diversity of the ecosystem, or vulnerability to degradation by natural events or human activities; social, cultural, and economic criteria, such as significance of the area for recreation or tourism; and scientific and educational criteria, such as biological research or historical value.

[xiv] The guidelines for the designation of special areas under MARPOL 73/78 was adopted by IMO Resolution A.927(22).