TOWARDS AN ENVIRONMENT CANADA STRATEGY

FOR COASTAL AND MARINE PROTECTED AREAS

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on behalf of the CWS Marine Habitat Working Group

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The Canadian Wildlife Service

The Canadian Wildlife Service of Environment Canada handles wildlife matters that are the responsibility of the Canadian government. These include protection and management of migratory birds as well as nationally significant wildlife habitat. Other responsibilities are endangered species, control of international trade in endangered species, and research on wildlife issues of national importance. The Service cooperates with the provinces, territories, Parks Canada and other federal agencies in wildlife research and management.

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Executive summary

The Canadian Wildlife Service (CWS) of Environment Canada is charged with developing and implementing a marine habitat conservation program with a focus on habitat for migratory birds. CWS has set up a Marine Habitat Working Group to define the department's role in marine habitat conservation, and in particular the establishment of marine protected areas (MPAs). The working group is also responsible for charting a future direction for the marine habitat conservation program. This document was prepared to provide context for the development of an Environment Canada strategy for marine habitat conservation and MPAs.

Part 1 introduces MPAs as a conservation tool and then focuses on various aspects of the current Environment Canada program and activities regarding MPAs. It describes the three legal designations—national wildlife area, marine wildlife area and migratory bird sanctuary—that CWS can use to protect marine areas. To June 1996, 13 out of the country's 49 national wildlife areas and 56 of the 98 migratory bird sanctuaries have coastal, estuarine or marine components. The total amount of coastal, estuarine and marine wildlife habitat protected in these 69 sites is about 3.8 million hectares. Several proposed national wildlife areas will include a significant marine component; the proportion is expected to increase. The marine wildlife area designation is a new mechanism added to the *Canada Wildlife Act* by amendment in 1994 to provide for MPAs in the 12 to 200 nautical mile zone, where a different regulatory regime is required. The origins and nature of this amendment are reviewed.

Part 1 then envisions, for discussion purposes, some potential characteristics for marine wildlife areas. These attributes might include a focus on critical habitats for marine birds and associated wildlife, cooperative management arrangements and a flexible management regime tailored to the needs of each site. Part 1 then proposes vision and mission statements for the marine wildlife habitat conservation program.

Part 1 concludes with a brief progress report on some recent CWS activities regarding MPAs, and proposes a path forward. The proposed actions include (a) the development of guiding documents for program accountability (e.g., strategy, operational policy, criteria for marine wildlife areas, and action plan); (b) the development of a regulation for marine wildlife areas ("protected marine areas") under the *Canada Wildlife Act* through an actual site designation; and (c) implementation of the MPA program through designation and management of sites. The program should include the necessary tools to explain CWS activities to others and to pursue cooperative and collaborative mechanisms.

Part 2 looks at the broader context in which the Environment Canada MPA program will be developing. It outlines federal and provincial programs that have established, or plan to establish, marine protected areas in Canada, recognizing that aboriginal and coastal communities can be important partners. Second, it looks at the international legal context and international designations. A listing is provided of international mechanisms that advocate MPA establishment or provide for the designation of significant sites as MPAs. Third, Part 2 looks at MPAs in the context of overall marine conservation and identifies jurisdictional issues in the oceans that might limit the establishment of MPAs. Shared responsibilities among many jurisdictions will necessitate integration of efforts. Some existing committees are mentioned that bring partners together on MPA issues.

A solid MPA program will equip Environment Canada towards meeting its responsibilities for the conservation of habitat for migratory birds and biodiversity in marine areas.

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Introduction

The Canadian Wildlife Service (CWS) of Environment Canada is now in the process of defining the department's role in the conservation of habitat for marine wildlife, in particular its role in the establishment of marine protected areas (MPAs). The goal is to define program activities in this area separate from the terrestrial habitat conservation program, with which it was formerly included as a minor component. As a first step, participants at a CWS habitat workshop in September 1994 requested that a background paper be prepared to clarify the jurisdictional context of protection of oceanic habitat and to identify the important considerations in a specifically marine program. This paper follows the outline suggested at the workshop. It will be useful to all those interested in the development of an Environment Canada MPA and marine habitat conservation strategy and program.

Part 1 of this paper provides background information on MPAs in general and on the current Environment Canada MPA program. It also reports some recent achievements and proposes next steps for CWS in developing and implementing an MPA strategy and program. Part 2 examines the context for MPA programs in Canada, and internationally, as well as the broader context for MPAs as a part of marine conservation efforts. The appendices include a contact list for the CWS Marine Habitat Working Group, and tables that list the 13 national wildlife areas and 56 migratory bird sanctuaries that have a marine component, as well as tables of Canada's Ramsar sites and shorebird reserves indicating presence/absence of a marine habitat component.

Background

Important Wildlife Habitats

Coastal, estuarine and marine areas provide a variety of productive habitats, supporting diverse assemblages and an enormous abundance of marine birds and other wildlife. These habitats include coastal islands, wetlands, salt marshes, estuaries, seagrass beds, and intertidal mudflats; further offshore, they include polynyas, sea mounts, shelf breaks, banks, and upwellings of nutrients in the ocean. These areas are critical to marine birds and other wildlife for such activities as breeding, feeding, moulting, migratory stop-overs and over-wintering; several areas may be used to support different life cycle stages. Wildlife conservation issues include habitat destruction and degradation, pollution, over-exploitation of resources, and disturbance of wildlife (for further discussion relative to seabirds, see Gaston 1996).

CWS habitat conservation efforts have long focused on protecting significant terrestrial, wetland, estuarine, and coastal habitats for migratory birds and other wildlife. However, the offshore marine ecosystem and its associated biodiversity remains largely unprotected. International conventions now oblige national governments to take actions to protect their marine environments. In Canada, efforts have been increasing in recent years to address marine environmental issues, including the protection of marine habitats.

CWS contributes to marine conservation efforts through the protection and management of marine birds as well as nationally significant wildlife habitat, for example, by establishing coastal, estuarine, and marine protected areas. In 1994, the *Canada Wildlife Act* was amended to extend the provisions for national wildlife areas beyond the 12-nautical mile territorial sea out to the 200-nautical mile limit, so as to better address both coastal and offshore marine conservation issues. However, the extended responsibility came with no new funding, so partnerships with others will be important to delivering protection to these marine areas for wildlife. The definition of "wildlife" in

the act was also amended, to include all wild organisms. CWS focuses its efforts on the conservation of migratory birds because of its federal and international responsibilities arising from the Migratory Birds Convention with the United States and its associated act.

1.0. Marine Protected Areas (MPA) in general and Environment Canada's MPAs

The terms "marine protected area" and "protected marine area"

In this paper two terms, "marine protected area" and "protected marine area" are used. "Marine protected area" is the generic term that is commonly used in the literature (see below) to refer to any protected area on the ocean coast or at sea, whereas "protected marine area" refers to a specific category of protected area—to be called a marine wildlife area—that was provided for under the *Canada Wildlife Act* through amendment of the act in 1994.

MPA definition and types

The internationally used definition of an MPA is "any area of intertidal or subtidal terrain, together with its overlying water and associated flora, fauna, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment" (IUCN 1988, in Kelleher and Kenchington 1991). However, both Canada and the United States include the Great Lakes as well as the oceans in their MPA systems plans. Note that, in Canada, under the *Canada Wildlife Act* and *National Parks Act*, MPAs may be established in the Great Lakes as well as the oceans, whereas MPAs proposed under the draft *Canada Oceans Act* pertain only to the oceans.

In Canada, types of MPAs may include national wildlife areas, marine wildlife areas, migratory bird sanctuaries, national marine parks, national marine conservation areas (federal legislation to be developed), MPAs proposed under the draft Canada Oceans Act, provincial ecological reserves and parks, wildlife management areas, fisheries reserves, and so on. The management regimes may vary from strict "no-take areas" to large multiple-use zones.

The role of coastal and marine protected areas

Broadly speaking, coastal and marine protected areas are a practical way of conserving marine biodiversity, maintaining the productivity of marine ecosystems, and contributing to the economic and social welfare of human communities. Realizing these complementary goals will require commitment and the development of our capacity to manage these sites effectively. The recommended approach is integrated coastal zone management, of which coastal and marine protected areas are a key component (Kelleher et al. 1995, p.v).

Consistent with the Convention on Biological Diversity, individual MPAs can serve one or more conservation-related goals, such as:

a) to protect critical habitat (e.g. feeding, spawning or nursery grounds)
b) to protect an ecological feature or process (e.g. upwelling zone, estuary)
c) to protect a special or unique site or feature (e.g. migratory bottleneck)
d) to protect ecologically representative or typical habitats
e) to establish a "control" area for research and monitoring, and
f) to support the rehabilitation of populations, species and habitats.

All of the above, except (d), appear to be consistent with reasons for which Environment Canada would establish MPAs. For example, the CWS selection criteria for national wildlife areas

include critical habitat for migratory birds, habitats for unique wildlife assemblages or rare and endangered wildlife, and unique habitat types.

Networks of coastal and marine protected areas are needed

For migratory wildlife species such as birds, fish and whales, networks of protected sites are needed to safeguard the critical habitats that are used in different locations throughout the life cycle. This may include coastal, estuarine and offshore habitats, international waters (i.e., high seas), and also habitats in other countries. To illustrate this using seabirds as examples, Cassin's Auklets and Fork-tailed and Leach's Storm-Petrels nest on coastal islands, but routinely travel 50 to 100s of kilometres to their preferred foraging areas to capture food for their young. Many species of seabirds that nest in the northern hemisphere spend the boreal winter in southern oceans (e.g., phalaropes, jaegers, terns). Conversely, there are several species of shearwaters and albatrosses that breed in either the south Pacific or on the Hawaiian Islands, and spend the boreal summer in the northeast Pacific (including Canadian waters). All these habitats used throughout the species' life cycle must be protected if the populations are to remain viable. Thus an MPA system must look at the linkages between various habitats, both within and beyond Canada's borders, in order to safeguard all the habitats that are critical to the survival of species.

Current status of Environment Canada's MPAs

Environment Canada has three mechanisms available for establishing MPAs: national wildlife areas, marine wildlife areas, and migratory bird sanctuaries. By establishing these protected areas, the department contributes to the conservation of wildlife and habitats nationally—on water and on land. Where migratory birds are the species of interest, these areas also contribute to the conservation of the international migratory bird resource.

National wildlife areas (NWA), established under the *Canada Wildlife Act*, protect nationally significant habitats for the purpose of wildlife conservation, research, and interpretation. They can be established on Canada's lands, inland waters and territorial sea, and may include any habitat type, including uplands, wetlands, aquatic areas, estuaries, and intertidal and marine areas.

Table B-1 in Appendix B lists thirteen NWAs—out of Canada's 49 NWAs—that have a marine (including coastal and estuarine) component, totalling about 174,673 ha of marine habitat protected. These areas are located along the coastlines of the Atlantic, Arctic and Pacific oceans and the St. Lawrence River and Great Lakes.

The first NWA to have a large offshore component, called Nirjutiqavvik NWA, was established in 1995 in the Northwest Territories at Coburg Island. It comprises the island and a 10-km radius marine buffer area surrounding the island. It protects significant seabird breeding colonies and some of the birds' marine foraging areas. Another NWA that will have an extensive offshore component is the proposed Igalirtuuq NWA, scheduled for designation in 1996–97 at Isabella Bay on Baffin Island. The NWA, when established, will extend from the coast out to the 12-nautical mile limit—corresponding roughly to the critical habitat used by bowhead whales that is being protected by the NWA designation.

Marine wildlife area is the name that CWS proposes to call any areas established according to the new "protected marine area" provisions of the *Canada Wildlife Act* as amended in 1994. The name "marine wildlife area" is chosen to reflect their close similarity to national wildlife areas in concept and purpose—both can be established under the *Canada Wildlife Act* for the purposes of wildlife research, conservation and interpretation; both propose flexible management regimes. They differ in that the regulatory regime for marine wildlife areas will be tailored specifically to the marine environment. Marine wildlife areas can be established in Canada's fishing zones, i.e. the area from 12–200-nautical miles; therefore, they require a somewhat different regulatory regime from NWAs

because different laws apply to areas beyond Canada's 12-nautical mile territorial sea. A new regulation to enable the designation of marine wildlife areas must be developed. Studies of marine birds are ongoing to identify sites requiring protection, such as significant breeding, feeding, moulting, wintering, and migratory stop-over areas. Discussions are underway about the need for protection for several sites.

Migratory bird sanctuaries (MBS), established under the *Migratory Birds Convention Act*, seek to conserve the diversity of migratory birds by controlling human activities within important areas that are managed to protect birds. Fifty-six (56) of Canada's 98 MBSs have a marine component and some are wholly marine (see Table B-2 in Appendix B). MBSs protect habitats that are heavily used by birds for breeding, feeding, migration, and overwintering. Marine habitats protected include shallow coastal waters, bays, inlets, mudflats, deltas, estuaries, and marine waters surrounding islands. The total area of marine habitat protected in MBSs is about 2,911,967 ha (Table B-2).

Prohibitions, permits, and partnerships

The regulations for MBSs and NWAs offer protection to wildlife by prohibiting human activities that would be harmful to the wildlife and, in the case of the Wildlife Area Regulations, to the environment. Permits can be issued to allow activities that are compatible with wildlife conservation. Similarly, the intent in establishing marine wildlife areas is to have the flexibility to allow activities that are compatible with wildlife conservation. As Environment Canada considers the development of a regulation for marine wildlife areas (“protected marine areas") under the *Canada Wildlife Act*, it must decide if a system of prohibitions and permits—similar to the Wildlife Area Regulations—is the best way to offer protection to wildlife and habitats in offshore areas. It must also determine if the legal basis exists for doing this beyond Canada's territorial sea.

An important provision of the *Canada Wildlife Act* is that it enables Environment Canada to enter into partnership agreements with all levels of government, communities including aboriginal groups, and individuals both for the establishment of NWAs and marine wildlife areas ("protected marine areas") and for their subsequent cooperative management. For example, there will be a cooperative agreement(s) towards the establishment of the proposed Igalirtuuq NWA, since a number of parties have been involved. To provide an idea of what items might be included in a cooperative agreement, see the text box below.

Coastal communities have made it clear to governments that they want to be consulted as partners in any MPA initiatives affecting their community (see, for example, Salasan Associates Inc. 1995), and beyond consultation, to be involved in management (Graham et al. 1992). Given the logistical difficulties in enforcing regulations in offshore areas, the support of the people using those ocean areas will be critical if MPAs are to meet their conservation goals.

Generic outline for an agreement for the cooperative management of a (marine) national wildlife area.

The purpose of an agreement is to state broad areas of cooperation between agencies directly involved in the establishment and management of the national wildlife area (NWA). The agreement should relate each agency's mandate to the NWA, and address issues such as financing, enforcement, and monitoring, where one act supersedes the authority of another, and management and administration of the NWA. The agreement should consider the scale at which each partner is involved in the NWA. (see Canada Wildlife Act s. 5, 6 and 7 regarding agreements)

Preamble: *"Whereas" statements ... (general principles and statements of relevant mandated responsibilities of each partner, legislation, etc.)*

Section 1: *Definitions of terms used in the agreement*

Section 2: *Management and administration*

Section 3: *Roles and responsibilities*

Section 4: *Financial (who bears which costs)*

Section 5: *General (includes contact names for any notice regarding the agreement)*

Signatures page

What were the origin and nature of the amendments to the Canada Wildlife Act regarding "protected marine areas"?

Until recently, the need for offshore protection of wildlife and habitat had not been urgent. Many marine habitats had offered "natural sanctuaries" to wildlife—owing to their relative inaccessibility to people—but they are now being threatened as technology enables their exploitation and over-exploitation. Conservation action is required. International initiatives such as the Convention on Biological Diversity and the Convention on the Law of the Sea influence nations to take steps to protect their marine ecosystems and resources.

In 1994, the *Canada Wildlife Act* was amended to extend the national wildlife area provisions beyond the 12-nautical mile territorial sea out to the 200-nautical mile limit. It became the first Canadian legislation to allow for MPAs out to the 200-nautical mile limit. In seeking the amendment, the department recognized that it had lacked an appropriate mechanism—and had not taken measures—for protecting offshore habitats that are important for marine wildlife, particularly marine birds. With the amendment of the act, a mechanism now exists to protect important coastal and offshore marine habitats that support significant seasonal concentrations of marine birds and other wildlife.

The changes to the *Canada Wildlife Act* for protecting marine areas were as follows. Authority was added to allow the Governor in Council to establish "protected marine areas" in Canada's fishing zones, and the Minister to carry out measures for the conservation of wildlife in those areas and provide advice relating to any wildlife research, conservation, and interpretation carried out in

"protected marine areas." Regulation-making authority was added to the *Canada Wildlife Act* for (a) the establishment of "protected marine areas," and (b) carrying out works for wildlife research, conservation, and interpretation in these areas. A regulation to enable the establishment and management of these "protected marine areas" (or marine wildlife areas, as it is proposed that they be called) must still be developed.

The changes to the act were necesssary because of the different legal regime for Canada beyond the territorial sea, where Canada has sovereign rights but not sovereignty. This means that national wildlife areas cannot legally be established beyond the territorial sea because, for their establishment, the *Canada Wildlife Act* assigns "administration and control" of public lands to the Minister; however, these powers cannot be bestowed with respect to an area beyond Canada's territorial sea. The amended *Canada Wildlife Act* enables the Governor in Council to establish "protected marine areas" beyond the territorial sea, but "administration and control" is not assigned.

In summary, the *Canada Wildlife Act* now provides for the establishment of NWAs on Canada's lands, internal waters and territorial sea; and for marine wildlife areas in any fishing zones (beyond 12-nautical miles). Upon passage of the *Canada Oceans Act*, marine wildlife areas ("protected marine areas") may be established in the internal waters, territorial sea or exclusive economic zone of Canada

> *Upon passage of the proposed* Canada Oceans Act, *the* Canada Wildlife Act *will be amended: "s. 4.1 (1) The Governor in Council may establish protected marine areas in any area of the sea that forms part of the internal waters of Canada, the territorial sea of Canada or the exclusive economic zone of Canada." (Bill C-98 s.107.)*

The 1994 amendments to the *Canada Wildlife Act* also clarified the definition of "public lands" as specifically including the internal waters and territorial sea. This had not been clearly stated previously. In the late 1980s a legal opinion determined that the definition of "public lands" in the *National Parks Act* could include marine waters. Subsequently, in about 1991, this interpretation was applied to the *Canada Wildlife Act*, which has the same definition of "public lands". Thus, national parks and national wildlife areas can include marine components, even wholly marine areas with no land component. Prior to obtaining the above-mentioned legal opinion, Environment Canada had limited the marine components of its NWAs to near-coastal areas.

Another consideration when establishing federal protected areas in coastal areas is ownership. The provinces generally own the foreshore and intertidal areas, although in some cases provincial ownership extends offshore past the low water mark. Federal ownership (see defininition of "public lands" in the *Canada Wildlife Act*), is required for the establishment of a national wildlife area but not for a migratory bird sanctuary. Thus, the Migratory Bird Sanctuary Regulations have been used extensively to protect birds using marine areas belonging to the provincial crown or that are not deeded (to either the federal or provincial crown). For example, George C. Reifel MBS protects the provincially-owned coastal mudflats associated with Alaksen NWA in British Columbia, and Terra Nova MBS protects the shallow tidal embayments—which are not deeded—associated with Terra Nova National Park in Newfoundland.

Envisioning marine wildlife areas

The following list is intended to stimulate consideration of the potential characteristics of a marine wildlife area—that is, an area established under the "protected marine area" provisions of the *Canada Wildlife Act* and a yet-to-be-developed regulation. The list is based in part on discussions of the CWS Marine Habitat Working Group.

We know the purpose for these areas, as set out in the *Canada Wildlife Act*:

- the purpose is wildlife research, conservation, and/or interpretation

We can envision or contemplate other characteristics of marine wildlife areas that might include:

- the selection criteria would emphasize the importance of the area to marine birds
- the goal of management would be to promote ecosystem integrity and conservation of all wild organisms within the area; management planning would focus on regulating human actions so that they will not compromise the integrity of the wildlife area
- the level of protection would be determined on a site-by-site basis through a management plan
- the management regime would be achieved through a suite of regulations under various existing pieces of legislation
- the enforcement strategy would rely more on public education and communication than on physical inspections by wildlife officers
- the regulations would set out general prohibitions of inappropriate human uses (within limits set by the UN Law of the Sea Convention), and allow other activities compatible with wildlife conservation only under permit
- the department would adopt a cooperative approach to establishment, enforcement, and management, wherever and whenever appropriate
- the sites established to protect seabird habitats would contribute to a world network of sites protecting seabirds
- the site boundaries would be determined scientifically; methodology would depend on needs of the species being protected and site characteristics
- the area would be large enough for effective conservation
- the marine wildlife area would comprise the air, water surface, water column, and seabed (but not subsoil—unless subsurface rights are obtained).

Draft vision, goal, strategies and mission for marine habitat conservation

The following preliminary statements are proposed for the overall Environment Canada marine habitat conservation program, of which MPAs are one strategy. Final vision, goal, and mission statements will be developed through discussion within CWS as part of the development of a strategy and program for marine habitat conservation. The vision, goal and mission statements were proposed by the CWS Marine Habitat Working Group(Big Creek workshop, April 24–26, 1996), and the strategies were proposed at a CWS workshop (Sackville, New Brunswick, August 13, 1995).

- The **vision** of the marine habitat conservation program is proposed as the maintenance of "a complete self-sustaining diversity of marine wildlife and habitats in naturally functioning ecosystems."

- The **goal** for the marine habitat conservation program is proposed as "Canada's marine ecosystems should be maintained, enhanced or restored to sustain all marine species indigenous to these ecosystems".

- There are three main **strategies** by which CWS works towards the above-stated goal. These are (a) to secure key habitats (e.g., protected areas); (b) to conduct and promote habitat science; and (c) to influence decisions affecting habitat conservation.

- The **mission** of the marine habitat conservation program is proposed as the "conservation of marine wildlife, with an emphasis on marine migratory birds, through maintenance and restoration of their supporting habitats." The mission statement recognizes the specific national and international obligations of Environment Canada for migratory bird conservation, including marine birds.

Short-term action plan (from habitat workshop 09/94) and progress report

At a CWS habitat workshop in 1994, participants agreed to a short term action plan covering the period 1995–97. The following chart outlines those action items and presents a brief update on progress.

Proposed actions for 1995–97	*Progress achieved to May 1996*
• Designation of Igalirtuuq NWA	• Igalirtuuq NWA is scheduled for designation in 1996–97. The four government signatories have agreed-in-principle to sign the cooperative agreement and are awaiting the agreement of the fifth party. A management plan has been drafted.
• Development of regional marine bird/habitat conservation strategies	• Pacific and Yukon Region developed a draft marine bird conservation strategy in 1994–95 which is being redesigned for 1996–97 to identify areas of interest to marine birds. • A 1993 CWS strategy for the Northwest Territories included proposed marine sites, mainly coastal. • Atlantic Region deferred development of a marine bird strategy while focusing on site-specific strategies for Sable Island and The Gully.
• Compilation of seabird/marine ecosystem information/data, by ocean (Pacific, Arctic, Atlantic) and Great Lakes	· Publication of a *Gazetteer of Marine Birds in Atlantic Canada* (bird vulnerability to oil pollution) (Lock et al. 1994), an *Atlas of Pelagic Birds of Western Canada* (Morgan et al. 1991), and volume 3 of an *Atlas of Colonial Waterbirds Nesting on the Canadian Great Lakes* (Blokpoel and Tessier 1996). · Arctic seabird colony data is being entered into databases; a draft document of key arctic seabird habitats needs updating. A catalogue of important bird areas of British Columbia is being prepared.

Proposed actions for 1995–97	*Progress achieved to May 1996*
• Legal review of jurisdictional mandates, by ocean	• Legal review is postponed due to other priorities in Legal Services.
• Complete preparation of a national/international marine bird reserve designation program	• International seabird reserve initiative was deferred due to other priorities. The seabird reserve concept may be captured by the new North American initiative for Important Bird Areas.

Proposed path forward

While CWS has considerable experience in habitat conservation in the coastal, estuarine and nearshore marine environment, the offshore marine zone is a new area with new partners and challenges. CWS needs to determine (a) if it intends to pursue a "system" of offshore MPAs or alternatively just a few "model" sites, and (b) how it should proceed with planning, management and operation of coastal and offshore MPAs. To facilitate its focus on the marine environment, CWS would be wise to move quickly to develop a vision, guidelines, strategy, action plan, and policy for MPAs, articulated separately from the terrestrial program components. Published versions of these would support communications with other departments and potential partners in MPA programs.

Development of “stand-alone” marine habitat conservation and MPA components would build on existing experience and program materials which cover both terrestrial and marine habitat conservation, but were not designed to specifically address a system of MPAs. For example, the planning components for the overall CWS habitat conservation program—the action plan (Canadian Wildlife Service 1992a), strategies (Canadian Wildlife Service 1990), NWA selection criteria, etc.—include a marine component. Furthermore, there is a Canadian Wildlife Service Strategy for Marine Environmental Quality (Canadian Wildlife Service 1991) which addresses marine habitat issues and needed actions. The department has the legislative and regulatory components to support MPA establishment—two acts and two regulations, and a third regulation is still to be developed. CWS databases on marine bird distributions span decades; however, little of this information covers marine bird distributions beyond the territorial sea. CWS has considerable practical experience in coastal habitat management through its existing 69 coastal MBSs and NWAs that have marine components. CWS has gained experience regarding cooperative agreements through the ongoing process to create the Igalirtuuq NWA; and for community co-management of a marine NWA from the Nirjutiqavvik NWA process.

Considerable work remains to be done to identify and catalogue important marine bird habitats, and to prioritize the sites that require protection. An over-arching constraint continues to be the financial resource limitations within CWS, recognizing that work in the oceans environment is expensive.

Three areas or groups of items requiring action can be identified as next steps for an MPA program. They are (a) development of guiding documents for program accountability; (b) development of a regulation for "protected marine areas" through a pilot project—i.e., an actual site designation beyond 12-nautical miles; and (c) implementation of the MPA program (designation and management of sites). Detailed actions which would fall under these three groups are outlined below. Senior management support for any increased effort in this area is imperative.

a) Develop guiding documents for program accountability

The following actions by a CWS marine working group are required.

- development of a vision and framework for marine habitat conservation, in particular the MPA component, by building on the vision and framework for the overall CWS habitat conservation program

- development of a policy statement (e.g., Will CWS aggressively pursue an MPA network—particularly beyond 12-nautical miles—or just protect individual sites on an opportunistic basis?)

- preparation of a strategy and action plan that outline how CWS will meet its mission and mandate regarding marine wildlife and habitat conservation

- development of operational guidelines (e.g., How should CWS proceed with MPAs? Who must be consulted? What is the CWS management approach to MPAs?)

- updating of criteria for "protected marine areas" (same as for NWAs?) and for prioritizing action, etc.; consideration of adding a socio-cultural criterion

- development of a communications/education plan (How can CWS build support for MPAs? How will CWS get partners to participate in MPA establishment and management?).

Note that the CWS Seabird Committee may initiate the development of a national seabird conservation strategy in 1997. The establishment of MPAs should contribute to a seabird conservation strategy.

b) Develop a regulation for "protected marine areas" under the Canada Wildlife Act

The following actions are required by a CWS regional office, in cooperation with CWS headquarters and Legal Services.

- initiation of a pilot project—a "first-case" designation—for a site beyond 12-nautical miles. The premise is that Environment Canada can better determine what should go in a regulation for a marine wildlife area ("protected marine area") under the *Canada Wildlife Act* if it has an example in progress. There may be an opportunity for a pilot project on the Pacific coast, as part of a cooperative initiative of the British Columbia Marine Protected Areas Working Group.

- drafting of a new regulation under the *Canada Wildlife Act* for marine wildlife areas (CWS in cooperation with Legal Services, Department of Justice).

c) Program implementation

The following actions are required by regional offices with support from headquarters.

- development of an action plan and schedule for site designations, incorporating CWS's four steps of MPA establishment, which are (1) identification, selection, and prioritization of sites; (2) feasibility consultations; (3) negotiation of agreements and approvals, and policy environmental assessment; and (4) site designation under regulations. Once the MPA is established, a management plan must be developed, and protection and management of the area continued on an ongoing basis.

- implementation of the action plan and tracking of implementation against the four steps of MPA establishment

- development of communications that ensure broad-based support for MPAs

- management of sites, with partners if appropriate, and monitoring the effectiveness of MPAs once established.

By undertaking the steps listed above, CWS should have a solid MPA program, well positioned to meet its habitat responsibilities relating to the conservation of migratory birds and biodiversity. The program should also provide the necessary tools to establish some accountability for, and linkages between, program goals and accomplishments; to facilitate cooperation with other jurisdictions; and to explain CWS marine activities to others.

2.0 The Context: Shared responsibilities in MPAs and marine conservation

Canadian jurisdictions involved in MPA programs

Canada is only beginning to contemplate networks of MPAs. Protection efforts to date have focused on the coastal areas. Protection initiatives may come from all levels of government, First Nations, local communities, and various other interested parties. Given that many jurisdictions are involved, overall coordination of efforts will be important to avoid overlap and to create efficiencies by building on each others' strengths. Environmental nongovernment organizations are strong advocates of MPA systems in Canada.

> ***The Canadian Biodiversity Strategy***
>
> *...recommends that Canada establish marine reserves "to conserve aquatic biodiversity and contribute to networks of national and international protected areas." Further, the strategy recommends that Canada "enhance efforts to conserve aquatic biodiversity by protecting: species and ecosystems at risk, endemic species, vulnerable spawning areas and* ***unique*** *and* ***representative*** *habitats." (Federal-Provincial-Territorial Working Group 1995)*

The following outlines some of the federal and provincial MPA programs that exist or are being planned.

a) Federal:

The departments of Environment and Canadian Heritage currently have MPA programs, and Fisheries and Oceans plans to establish MPAs once the draft *Canada Oceans Act* becomes law. These MPA programs will contribute to the Canadian goal of a healthy marine environment. The existing programs complement each other well. Environment Canada (CWS) seeks to protect "unique" habitats and features, such as biodiversity hotspots and critical wildlife habitats, and frequently focuses on habitats for migratory birds. Canadian Heritage (Parks Canada) pursues a "representative" approach, selecting an area to represent the common or typical features of a marine natural region. Fisheries and Oceans has not specified an approach but would likely include uniqueness and a species-specific focus (fish, marine mammals, and other species). Thus, the overall federal MPA program will have a good basis for contributing to marine biodiversity protection.

• **Environment Canada, Canadian Wildlife Service**: Since 1994, the department has had authority under the *Canada Wildlife Act* to develop regulations for the establishment of marine wildlife areas ("protected marine areas") out to 200-nautical miles. The *Canada Wildlife Act* also provides for the establishment of national wildlife areas in the internal waters and territorial sea. The *Migratory Birds Convention Act* allows for the establishment of migratory bird sanctuaries, which have been used extensively to protect coastal marine waters. To date, 69 migratory bird sanctuaries and national wildlife areas have a coastal marine component, including habitat types such as saltmarsh, eelgrass bed, or intertidal flat.

• **Department of Canadian Heritage, Parks Canada**: To date, three national marine conservation areas (NMCAs) have been established under the *National Parks Act*. New legislation is planned to enable the establishment of NMCAs both in the Great Lakes and in the oceans out to the 200-nautical mile limit. Parks Canada envisions an NMCA system that will represent each of the 29 marine natural regions. Various national parks also have coastal marine components. Parks Canada tabled its policy for national marine conservation areas in 1994 and a system plan for these areas in 1995 (Department of Canadian Heritage 1994, 1995).

• **Department of Fisheries and Oceans** (DFO): DFO drafted legislation in 1995—the proposed *Canada Oceans Act*—that, when passed, will provide authority for the establishment of MPAs for the protection of marine species and habitats. The act gives DFO overall responsibility for developing an Oceans Management Strategy that will include a national planning framework for MPAs in Canada. Under the *Fisheries Act*, DFO can establish no-take areas for fish by issuing "variant orders" on a species-by-species basis. Section 35(1) of the *Fisheries Act* prohibits actions (such as fisheries practices) that alter, disrupt, or destroy fish habitat. This section could potentially be used to protect offshore marine habitats (Shackell and Lien 1994). DFO has established three Right Whale Conservation Areas on the Atlantic coast to try and reduce ship–whale collisions. These areas are delineated in the Canada Coast Guard's *Notices to Mariners* and in a brochure called *Caution Mariners.*

b) Provincial:

The provinces and territories may also establish MPAs in coastal waters, although the seaward extent of their jurisdiction is often uncertain. They have a wide range of laws and policies that can be applied to protect special marine areas. Many provincial protected areas, including provincial ecological reserves, parks, recreation areas, and wildlife conservation/management areas, may include marine components. Provincial ecological reserves protect a number of seabird breeding colonies—particularly in British Columbia and Newfoundland. Environment Canada is encouraging the provinces to add marine components, as appropriate, to ecological reserves to protect important habitats used by seabirds (e.g., for foraging) and to provide a buffer zone seaward of nesting areas.

• **British Columbia** is further advanced than the other provinces in developing a provincial strategy for MPAs. British Columbia manages 69 provincial parks, 2 recreation areas, and 16 ecological reserves that have a marine water component, collectively encompassing approximately 165,160 ha of British Columbia's marine environment (B.C. Parks Branch, 1995). The province's wildlife management areas may also have a marine component, for example Boundary Bay Wildlife Management Area.

• **Nova Scotia** initiated a strategy, Coastal 2000 in 1994, which identified the establishment of MPAs as a priority. The current status of this initiative is not known. The 1980 *Special Places Protection Act* could be used to protect marine areas in that province.

• In **Newfoundland and Labrador**, the Protected Areas Association produced a preliminary report on the potential for establishing marine conservation areas (Bryant et al. 1995). Some areas established under the *Wilderness and Ecological Reserves Act* (1980) have marine components, and the most commonly protected marine feature is seabird colonies.

• **Quebec** and **New Brunswick** also have ecological reserve acts in place. Quebec is working with Parks Canada toward the joint establishment of the Saguenay-St. Lawrence Marine Park.

c) Local:

Local governments may contribute to small MPAs, for example the 4 ha Whytecliffe Marine Park in West Vancouver, which is associated with a land-based municipal park.

d) Aboriginal:

Land claims may include marine components and the establishment of MPAs. For example, the Nirjutiqavvik National Wildlife Area, which is 80% marine, was the first NWA to be established under the Nunavut Final Agreement. Other claims will also have a marine component. This provides the opportunities for co-management initiatives and joint conservation projects between aboriginals and government.

Global efforts and international designations for MPAs

Globally, MPAs are a well-established mechanism for protecting marine species habitats and ecosystems. Areas have been established to protect sea turtles, fish, mangroves, coral reefs, seamounts, and banks, among others. Kelleher et al. (1995) identified approximately 1,306 MPAs around the world, and the number is increasing. Most MPAs are located close to shore within territorial waters or even in internal waters and may include land areas. The number of MPAs exclusively in open waters within the territorial sea is limited; the number of such areas beyond territorial waters is even smaller (IMO 1991, p.5).

The United States has a number of federal and state mechanisms for protecting coastal and marine areas. Of note is the National Marine Sanctuary Program, through which some 13 national marine sanctuaries have been designated to protect historical, aesthetic, and/or ecological values.

There are a number of international initiatives that provide formal designations for regionally or globally important marine sites. These international designations can "stand alone," or be added on to existing designations: for example, some national wildlife areas and national parks are also Ramsar sites. Designations can be made under the following international initiatives:

- Western Hemisphere Shorebird Reserve Network (1985). This initiative provides international recognition to critical shorebird habitats (e.g., intertidal mud flats, wetlands). There are four such reserves designated in Canada, of a total network of 32 reserves spanning North and South America. Table C-2 in Appendix C lists Canada's four shorebird reserves, one of which has a coastal marine component.

- Ramsar Convention (1971). This international agreement protects wetlands of international importance. It includes as "wetlands" ocean areas up to 6 m deep at low tide (e.g., coastal wetlands, coral reefs). Table C-1 in Appendix C lists Canada's 33 Ramsar sites, of which 20 have a coastal marine component.

- UNESCO Man and the Biosphere Programme (1971). The Biosphere Reserve Programme includes the establishment of marine biosphere reserves that represent the marine ecosystems of the world. Canada's first marine biosphere reserve is proposed for the Isabella Bay area, when the Igalirtuuq National Wildlife Area is designated.

- World Heritage Convention (1972). Sites are selected to protect outstanding natural features (e.g., Great Barrier Reef).

- International Maritime Organization (IMO). This agency can designate special areas, areas to be avoided, and particularly sensitive sea areas—based on criteria for an area's sensitivity to ship pollution or maritime activities (IMO Resolution A.720(17) 1992). There are no IMO designated areas within Canadian waters.

Other international initiatives that encourage nations to establish MPAs include:

- United Nations Convention on the Law of the Sea (UNCLOS)(1982). The convention does not, of itself, provide for the designation of MPAs. The convention does allow for nations to establish "special areas" regarding ship pollution and traffic (Article 211.6a) and to submit proposed area-specific measures to the IMO for consideration. It provides an international basis upon which to pursue establishment of MPAs and conservation of marine resources beyond the 12-nautical mile

territorial seas of coastal nations. UNCLOS came into force in 1994. Canada will ratify UNCLOS upon passage of enabling legislation.

- Bonn Convention (1979). Signatory nations agree to conserve or restore habitats of endangered migratory species according to various objectives. Canada is not a signatory to this convention.

- Conservation of Arctic Flora and Fauna (CAFF)(1991): Part of this agreement among the eight circumpolar countries focuses on a Circumpolar Protected Areas Network that includes MPAs. Under CAFF, shared species strategies are being devised; the International Murre Conservation Strategy and Action Plan was published in 1996 (CAFF 1966). Canada is an active participant in the CAFF initiative and the circumpolar seabird working group.

- Agenda 21 (UNCED, 1992). Chapter 17 (Oceans) recommends that states should, among other measures, establish and manage protected areas to maintain biological diversity and productivity of marine species and habitats (s.17.7). Efforts within Canada to establish MPAs and protect critical habitat will contribute to the implementation of Agenda 21.

- Convention on Biological Diversity (1992). This international agreement includes marine species and recognizes the importance of protected areas as part of sustainable development. Canada is a signatory, and has developed a Canadian Biodiversity Strategy (1995) which recommends the establishment of a system of representative and unique MPAs.

- *The World Conservation Strategy* (IUCN, UNEP, and WWF1980) and its 1991 update under the title *Caring for the Earth* (IUCN, UNEP, and WWF1991) include concerns for marine biodiversity and protected areas.

- The World Conservation Union (IUCN). The IUCN's Commission on National Parks and Protected Areas has provided world leadership in promoting the establishment and management of MPAs around the world. In 1995, IUCN with the World Bank and Great Barrier Reef Marine Park Authority produced a four-volume document outlining global status and plans for MPAs, entitled *A Global Representative System of Marine Protected Areas* (Kelleher et al. 1995).

- The World Wide Fund for Nature (WWF) continues to actively promote MPAs in countries around the world. WWF (Canada) plays a strong advocacy role for action on a network of MPAs for Canada, and works to improve public support for MPA establishment.

For further discussion of international approaches to MPAs and species, see Graham *et al*. (1992), Kelleher *et al*. (1995), and Oceans Institute of Canada (1990), among others.

MPA efforts in the context of marine protection and conservation

> *"The primary goal of marine conservation and management is to provide for the protection, restoration, wise use, understanding and enjoyment of the marine heritage of the world in perpetuity through the creation of a global, representative system of marine protected areas and through management, in accordance with the World Conservation Strategy, of human activities that use or affect the marine environment." (IUCN Resolution 17.38, 1988)*

Because MPAs can only be as "healthy" as the marine systems of which they are a part, marine protection and conservation efforts are important to MPA efforts. By undertaking a variety of

programs for marine conservation, protection and management, the quality of the marine environment will be maintained or enhanced, which benefits MPAs. In return, MPAs can contribute to marine environmental quality by creating areas in which human activities are controlled to prevent ecological harm, areas where ecological processes and the services they provide are sustained.

Canada is a signatory to many of the regional and international conservation and protection agreements (see, for example, conservation initiatives listed above and environmental protection initiatives listed in Côté 1992). One recent program which should benefit MPAs is the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, adopted by over 110 nations (UNEP 1995). A discussion paper is being developed for the implementation of this program in Canada (Environment Canada, Department of Fisheries and Oceans, and others 1996). MPAs are considered to contribute to the goals and commitments of the Global Programme of Action.

The goal in establishing MPAs is not to create a system of MPAs for the sake of having a system; rather it is one of a suite of actions that can contribute to comprehensive marine conservation.

What are some of the legal limitations to establishing MPAs?

This section briefly notes that, regarding marine protected areas, there are different considerations and limitations regarding what activities can be controlled in the oceans, as opposed to the strict controls possible for protected areas on land. In particular, these limitations pertain beyond Canada's territorial sea. The following is drawn from the report of the Oceans Institute of Canada (1990, pp. 16–21) and Graham *et al.* (1992).

The international common law regarding rights and jurisdictions in the oceans is codified in the 1982 Law of the Sea Convention. The convention provides for coastal nations to declare an exclusive economic zone and a contiguous zone. Under the convention, foreign states have rights within Canada's **exclusive economic zone** (EEZ) (when declared) of navigation and overflight and of laying submarine cables and pipelines; thus there may be limitations on the extent to which these activities could be prohibited or controlled in MPAs in the EEZ. Canada may also be obligated to tolerate fishing by foreign vessels in this zone. The convention does give Canada sovereign rights to the seabed, which would give it the authority to take measures to protect the seafloor habitat in areas that are designated as marine parks or reserves. The draft *Canada Oceans Act* (Bill C-98, s.14) describes Canada's sovereign rights and jurisdiction for an exclusive economic zone. There may be limits placed on Canada's powers of inspection and enforcement in this zone.

"In the exclusive economic zone, the coastal State has sovereign rights for the purpose of exploring and exploiting, conserving and managing the natural resources, whether living or non-living ...; jurisdiction ... with regard to ... marine scientific research, the protection and preservation of the marine environment;" although this jurisdiction has to be exercised with due regard to the rights and duties of other States. (Convention on the Law of the Sea, Article 56; Bill C-98 s.14)

In the **territorial sea,** the main right that foreign states can exercise is that of innocent passage—however, the coastal state can make laws and regulations applying to innocent passage in its territorial sea, for example laws relating to navigation (*Canada Shipping Act)* and the preservation of the environment (*Arctic Waters Pollution Prevention Act*). Fairly strict controls could be imposed for MPAs via these laws. Environment Canada might look to regulations under these and other acts, as appropriate, to achieve desired levels of control in an MPA. Similarly, if controls on fishing were needed, Environment Canada could look to the *Fisheries Act* for these controls.

In the **internal waters**, the coastal state has sovereignty and is free to impose any requirements it sees fit as a pre-condition for the entry of foreign vessels into its ports or internal waters, allowing the potential to impose strict controls for MPAs.

> *The coastal state has the obligation to institute pollution control measures 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"—so long as measures would not represent 'unjustifiable interference' with the rights of other States. (Convention on the Law of the Sea, Article 194.5*)

Canadian agencies having jurisdiction in the oceans

In Canada there are at least 36 federal acts and 20 provincial and territorial acts relating to the protection and use of aquatic environments and resources. Some of the agencies that administer these acts may be potential partners in, or stakeholders affected by, aspects of MPA establishment and management, depending on the circumstances. CWS needs to be aware of these interests to ensure broad consultation when contemplating MPA establishment, as well as to take advantage of all possible partnerships.

Federal: Nineteen or so federal departments and agencies are involved in the oceans sector through policies, programs, services, regulations and/or procurements. The federal presence in the oceans sector is substantial and diversified: e.g., aquaculture, marine commercial fisheries, offshore oil and gas, offshore mining, marine shipping, shipbuilding and repair, oceans manufacturing and services, and defence. The Department of Fisheries and Oceans has, under statute, the lead oceans role which includes protection and management of marine fisheries and marine mammals (DFO 1995).

Provincial/territorial: In general, provincial jurisdiction addresses lands, wildlife, forests, minerals, inland waters and lands covered by inland waters, and matters of a local or private nature. This may include regulation of coastal land uses impacting on MPAs and establishing and managing coastal parks and recreation areas. Provincial agencies may have authority over land tenures for coastal waters, with resulting authority for foreshore leases, aquaculture, and other shoreline uses. Provincial agencies have limited marine regulatory and enforcement capability due to the federal responsibility for these areas. They also depend on federal agencies for marine information.

The seaward extent of provincial jurisdiction is often uncertain (see discussion in Oceans Institute of Canada 1990, pp. 36–38). The general rule is that the territory of a province includes the intertidal zone, however, there is a common law exception as some provincial boundaries may extend 1–3 miles past the low water mark. There are further exceptions, for example the seabeds of the Bay of Fundy and Strait of Georgia are considered to be within the adjacent provinces. Jurisdiction would have to be determined before a federal MPA could be established.

Local: Local governments may have responsibility for regulating urban development, land use, and waste management. They may contribute to MPAs, for example the 4 ha Whytecliffe Marine Park in West Vancouver, which is associated with a land-based municipal park.

Aboriginal peoples: Land claims may include marine components. The Inuvialuit Final Agreement, for example, included institutions for the management of coastal renewable marine resources (Turpel 1992). The Nunavut Final Agreement extends to the 12-nautical mile limit and pertains to surface resources (marine wildlife, waters, and sea ice), but not to the seabed or subsoil resources. Other claims may also have a marine component.

Integrating federal roles and establishing cooperative mechanisms

> *"MPAs are successful only if they are managed as part of broader programs that provide for management of all uses of the sea and adjacent land." (Kelleher et al. 1995, vol. 1, p.4)*

It is generally agreed that a comprehensive approach to MPA planning, establishment and management is required. MPAs should be part of an overall strategy for coastal and marine conservation, to ensure that uses are sustainable. The proposed *Canada Oceans Act* (Bill C-98) identifies the Department of Fisheries and Oceans as the lead agency for integrated coastal zone and marine management. The proposed act requires the Minister of Fisheries and Oceans to develop a national strategy for the management of estuarine, coastal, and marine ecosystems—an oceans management strategy. Planning for a national system of MPAs would be part of this strategy. Cooperative mechanisms are proposed in the draft act: the Minister of Fisheries and Oceans can create boards and agencies as necessary to ensure there is broad consultation in planning. Agencies interested in MPA planning await the passage of the *Canada Oceans Act* so that leadership and planning infrastructure can be put in place—mechanisms that will enable and require jurisdictions to work together towards MPA creation.

Mechanisms characterized by shared management arrangements with communities (aboriginal and non-aboriginal) associated with marine and coastal areas should be pursued. Working together can potentially produce benefits of greater efficiency and effectiveness (i.e., the best conservation decisions are made), and lower costs to the public.

> ***Sea use planning***
>
> *Principles of sea use planning would recommend that, prior to any change in existing sea use, we review the use attributes of an area including "current and projected mineral and energy-related programs and projects; biological resources and fisheries interaction patterns; waste disposal and marine environment issues which often include sea surface, water column, sea-bed, extent of development, and use of the adjacent coastal zone; and the general state of the ecosystem." (Graham et al. 1992, p. 385)*

Two integrative mechanisms—in this case, committees—for MPA programs which involve Environment Canada (CWS) are currently in place. One is a federal interdepartmental MPA committee, and the other is a federal–provincial committee.

• **National Capital Region**: An interdepartmental MPA Steering Committee composed of senior managers, and backed by an MPA Working Group, was initiated in 1995. Membership consists of Environment Canada (CWS), Parks Canada, Fisheries and Oceans, and Natural Resources Canada. The working group has developed a draft discussion paper (Marine Protected Areas Working Group 1996) on MPAs to describe the programs of the three federal departments as they now exist or are envisaged and to identify opportunities for collaborative efforts.

• **British Columbia**: There is an interdepartmental/intergovernmental MPA Steering Committee (senior managers) and an MPA Working Group. These include Environment Canada, Parks Canada, Fisheries and Oceans, and several provincial departments. The MPA Working Group members are proposing to jointly identify and support the establishment of an MPA for each agency. Each agency will describe the nature, purpose and operational strategies for their respective MPAs. Ideally, MPA steering committees and working groups similar to those in the National Capital Region and British

Columbia would be established in other regions to facilitate interagency cooperation in MPA programs.

In addition to broad MPA planning initiatives, some site-specific working groups have been created to coordinate protection efforts for specific marine sites. Examples of note include:

• **Nova Scotia**: An ad-hoc group, chaired by Environment Canada's CWS, met several times to discuss conservation options for The Gully, a candidate MPA adjacent to Sable Island in the Atlantic Ocean. The lead for this initiative has since been transferred from Environment Canada to Fisheries and Oceans in recognition of the fact that the main issue is conservation of whales. For Sable Island itself, a broad group of agencies formed the Sable Island Transition Team to consider long term conservation options for this fragile, sand-based ecosystem (one option would be to include a marine component in the conservation strategy for the island). Following the 1994 conference of the Science and Management of Protected Areas Association in Halifax, a MPA working committee involving multiple jurisdictions in the Atlantic Region was suggested, but little action resulted.

• **Northwest Territories**: Two site-specific committees have been active on marine NWA initiatives. The management committee for the newly established Nirjutiqavvik NWA is now operational, and is cooperating in the co-management of this area. A second committee, composed of representatives of three federal government departments (Environment, Fisheries and Oceans, Indian Affairs and Northern Development), the territorial government and Inuit agencies is actively working towards the designation of the Igalirtuuq NWA.

For integration to be effective, cooperative mechanisms need to be explored towards the establishment, management, and enforcement of MPAs. Memoranda of understanding are frequently used between governments or departments to set out the roles of partner agencies in an area of shared interest. Cooperative agreements can be used when non-government agencies are involved (see Appendix D for outline of an agreement).

CWS, for its part, will be looking to partnerships and agreements with other sectors active in the marine environment, including communities. CWS will likely seek help with monitoring and enforcement of marine protected areas, particularly areas far offshore. In return, CWS will need to consider what it might contribute to any potential partnerships. For example, CWS could offer its scientific expertise in marine bird and habitat conservation, its ability to facilitate conservation initiatives and its international connections through shared species management. Of importance to the partnership process will be the ability of individual partners—CWS included—to openly and willingly explore new relationships in a manner that is constructive, cooperative and appropriate to the needs of particular marine ecosystems.

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APPENDIX A:

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APPENDIX B

Coastal, estuarine and marine protected areas established and managed by Environment Canada.

(Only sites having a coastal, estuarine or marine component are listed in the tables.)

Table B-1: National wildlife areas

Table B-2: Migratory bird sanctuaries

Table B-1. National Wildlife Areas having a coastal, estuarine, or marine component.

Marine area was calculated from the high water mark seaward. Note that numbers are approximate; for exact information, contact the CWS regional staff member responsible for that area (see Appendix A for list of names and phone numbers).

NWA name	Prov	Marine (ha)	Total (ha)	% marine	Date est'd	Key values
Qualicum	BC	40	83	48	1974	coastal estuarine ecosystems, migratory use, wetland vegetation
Polar Bear Pass	NT	26,200	262,400	10	1985	estuarine; marine species are polar wetland (multi-species)
Nirjutiqavvik	NT	143,500	178,000	81	1995	marine Thick-billed Murre, Northern Fulmar
Long Point - Big Creek complex	ON	2,440	4,023	61	1980 1978	wetland multi-species
Cap Tourmente	QC	620	2,391	26	1978	tidal marsh, coastal wetland agricultural land, forest
Îles de l'estuaire	QC	316	409	77	1978	island and riparian ecosystems waterfowl, Beluga
Portage Island	NB	230	439	52	1979	beach, dunes, saltmarsh
Cape Jourimain	NB	375	589	64	1980	saltmarsh, brackish impoundments, dunes
Shepody	NB	30	979	3	1980	beach, dunes, saltmarsh, rocky reefs
Wallace Bay	NS	195	585	33	1980	saltmarsh, tidal channels, brackish marsh
Boot Island	NS	122	144	85	1979	saltmarsh
Margaree Island	NS	5	54	9	1982	cliff faces, rocky intertidal shoreline
Chignecto	NS	600	1,095	55	1978	saltmarsh, tidal channels
TOTAL (approximate)		**174,673**				

Table B-2. Migratory Bird Sanctuaries with coastal, estuarine or marine components.

Marine area was calculated from the high water mark seaward. Note that numbers are approximate; for exact information, contact the CWS regional staff member responsible for that area (see Appendix A for list of names and phone numbers).

MBS name	Loc'n	Upland (ha)	Marine	Total (ha)	% marine	Date est'd	Key values
George C. Reifel	BC	102	300	402	75	1967	migratory birds wintering, resting, stop-over
Shoal Harbour	BC	0	150	150	100	1931	coastal; waterfowl wintering habitat (disturbed)
Victoria Harbour	BC	0	1,700	1,700	100	1923	coastal; waterbirds wintering and resting
Esquimalt Lagoon	BC	13	117	130	90	1931	wintering migratory birds
Bylot Island	NT	717,000	1,792,000	1,792,000	60	1965	marine; Greater Snow Goose, Thick-billed Murre
Dewey-Soper	NT	693,600	122,400	816,000	15	1957	marine; Brant, Lesser Snow Goose
Queen Maud Gulf	NT	4,932,000	1,233,000	6,165,000	20	1961	marine, wet sedge; Ross' Goose, Lesser Snow Goose
McConnell River	NT	8,300	12,000	20,300	40	1960	tidal flats, salt marsh Lesser Snow Goose
Harry Gibbons	NT	101,600	25,400	127,000	20	1959	tidal flats, estuarine Lesser Snow Goose
East Bay	NT	68,600	45,600	114,200	40	1959	marine; Lesser Snow Goose
Cape Dorset	NT	5,200	20,700	25,900	80	1958	marine; Common Eider
Akimiski Island	NT, ON	166,400	166,400	332,800	50	1941	tidal flats, coastal marsh; ducks, geese

MBS name	Loc'n	Upland (ha)	Marine	Total (ha)	% marine	Date est'd	Key values
Hannah Bay	NT, ON	20,700	8,800	29,500	30	1939	tidal flats, coastal marsh; ducks, geese
Boatswain Bay	NT, QC	635	700	1,400 ?	50	1941	tidal flats; coastal marsh ducks, geese
Kendall Island	NT	45,500	15,100	60,600	25	1961	deltaic; shorebirds, Lesser Snow Goose
Anderson River Delta	NT	92,300	16,000	108,300	15	1961	estuarine, marine, deltaic; Brant, Lesser Snow Goose
Banks Island #1	NT	1,949,200	102,500	2,051,700	5	1961	marine; Lesser Snow Goose, King Eider
Banks Island #2	NT	11,400	2,800	14,200	20	1961	estuarine; Lesser Snow Goose, Brant
Seymour Island	NT	800	2,000	2,800	71	1975	marine; Ivory Gull
Prince Leopold Island	NT	6,300	24,000	30,300	79	1992	marine; Thick-billed Murre, Northern Fulmar, Black Guillemot, Black-legged Kittiwake
Cape Parry	NT	110	120	230	52	1961	marine; Thick-billed Murre
Moose River	ON	yes	yes	1,457	?	1958	island, creek, river and James Bay coastal, tidal flats
Green Island	NF	30	120	150	80+	1991	shallow coastal water
Shepherd Island	NF	4	10	16	62+	1991	shallow coastal water
Terra Nova	NF	0	870	870	100	1967	shallow tidal embayments

MBS name	Loc'n	Upland (ha)	Marine	Total (ha)	% marine	Date est'd	Key values
Sable Island	NS	1,350	1,000	2,350	42+	1977	shallow salt water lake and beaches
Big Glace Bay Lake	NS	67	173	240	72	1939	salt marsh, eelgrass flats, coast
Port Joli	NS	30	250	280	89	1941	flats, salt marshes, shallow estuary
Port Hebert	NS	0	350	350	100	1941	shallow intertidal flats
Sable River	NS	0	260	260	100	1941	shallow estuary, salt marsh
Kentville	NS	180	20	200	10	1939	tidal river
Machias Seal Island	NB	10	*see Key Values	10*	*	1944	* oceanic island (10 ha) and coastline plus all waters within 1 statutory mile of high water mark (marine area not calculated)
Grand Manan	NB	200	50	250	20+	1931	beach, coastal water
Black Pond	PEI	90	40	130	31+	1936	beach and dunes
Baie de Brador	QC	78	460	538	86	1925	Atlantic Puffin
Baie des Loups	QC	210	3,340	3,550	94	1925	Atlantic Puffin, Common Eider
Betchouane	QC	65	397	462	86	1925	Common Eider, Arctic and Common Tern
Cap Saint-Ignace	QC	0	133	133	100	1986	Snow Goose
Île à la Brume	QC	553	3,767	4,320	87	1925	Caspian Tern, Common Eider
Ïle aux Basques	QC	67	866	933	93	1927	Great Blue Heron
Île aux Hérons	QC	129	493	622	79	1937	Great Blue Heron, Black-crowned Night Heron
Île Bonaventure & Rocher Percé	QC	498	862	1,360	63	1919	Northern Gannet, Black-legged Kittiwake

MBS name	Loc'n	Upland (ha)	Marine	Total (ha)	% marine	Date est'd	Key values
Île de Carillon	QC	375	97	472	20	1949	Great Blue Heron, Black-crowned Night Heron
Île du Corossol	QC	57	356	413	86	1937	Leach’s Storm Petrel, Black-legged Kittiwake
Île Saint-Ours	QC	94	216	310	70	1986	Gadwall
Îles de la Paix	QC	121	994	1,115	89	1973	Mallard
Îles Sainte-Marie	QC	525	3,575	4,100	87	1925	Razorbill, Common Murre, Atlantic Puffin
L'Isle-Verte	QC	92	211	303	70	1986	Black Duck, Snow Goose
L'Islet	QC	0	64	64	100	1986	Snow Goose
Montmagny	QC	0	110	110	100	1986	Snow Goose, shorebirds
Nicolet	QC	1,772	1,063	2,835	37	1982	Snow Goose, Canada Goose, Mallard, Black Duck
Rochers-aux-Oiseaux	QC	4	621	625	99	1919	Northern Gannet, Thick-billed Murre
Saint-Augustin	QC	741	4,829	5,570	87	1925	Common and Arctic Tern
Saint-Omer	QC	5	61	66	92	1986	Common Tern, gulls
Saint-Vallier	QC	0	405	405	100	1986	Snow Goose
Watshishou	QC	204	11,116	11,320	98	1925	Common Eider, Arctic and Common Terns
TOTAL (approximate)			**3,628,966**				

APPENDIX C

Canadian sites protected under international designations, indicating presence of marine components and key habitats.

Table C-1: Ramsar sites (designated under the Ramsar Convention)

Table C-2: Western Hemisphere Shorebird Reserve Network sites

Table C-1. Ramsar sites of Canada indicating presence of a marine component and key habitats.

Sizes are approximate. Data are taken from an unpublished Ramsar data file maintained by the CWS Habitat Conservation Division.

Ramsar Name	Type	Location	Marine (ha)	Total (ha)	Date of Ramsar desig'n	Key habitats
Tabusintac Lagoon	Ramsar	NB	4,087	4,382	1993	estuarine and intertidal flats, marshes, freshwater lagoon, sand dunes and beaches
Shepody Bay	Ramsar	NB	12,200	12,200	1987	mudflats, open marine water, salt marsh, beach
Mary's Point	Ramsar	NB	1,120	1,200	1982	intertidal mudflats, salt marsh (dunes, forested upland)
Chignecto NWA	Ramsar, NWA	NS	587	1,020	1985	salt marsh (also impoundments, bogs, forest)
Southern Bight - Minas Basin	Ramsar	NS	26,700	26,800	1987	mudflats, tidal waters, salt marshes (100 ha upland island)
Musquodoboit Harbour Outer Estuary	Ramsar	NS	1,520	1,925	1987	eel grass flats, salt marsh, sand beach & mudflats, beach grass, intertidal waters, (upland island 21%)
Malpeque Bay	Ramsar	PEI	22,200	24,400	1988	salt marsh, shallow estuarine water, open water, saline pond, sand dunes, sand beach, islands
Grand Codroy Estuary	Ramsar	NF	925	925	1987	intertidal river estuary, sand bars
Lac Saint-François NWA	Ramsar, NWA	QC	no	2,214	1987	freshwater marsh 690 ha; flooded swamp forest 540 ha; dry upland 984 ha
Cap Tourmente NWA	Ramsar, NWA	QC	yes	2,398	1981	400 ha tidal marsh 100 ha coastal meadow 700 ha agric. land 1,198 ha forest
Baie de l'Isle Verte NWA	Ramsar, NWA	QC	yes	2,028	1987	Spartina marsh, rock, and forest

Ramsar Name	Type	Location	Marine (ha)	Total (ha)	Date of Ramsar desig'n	Key habitats
Southern James Bay	Ramsar, Moose River MBS, Hannah Bay MBS	ON, NWT	yes	25,290	1987	intertidal marsh, mud flat and interior forested plain and organic bogs
St. Clair NWA	Ramsar, NWA	ON	no (behind dyke)	244	1985	emergent lakeshore marsh and shallow water lake (95% wetland) behind barrier dyke
Polar Bear Provincial Park	Ramsar, Prov. Park	ON	yes	2,408,700	1987	inland bogs, fens, forest beach ridges, shallow water coastal flats (75% organic wetlands)
Point Pelee National Park	Ramsar, Nat'l Park	ON	yes (Great Lakes)	1,564	1987	1,113 ha marsh 451 ha upland
Mer Bleue	Ramsar, NCC Conservation Area	ON	no	3,100	1995	50% bog 30% marsh (estimate) 20% other/water
Long Point NWA	Ramsar, NWA	ON	yes (Great Lakes)	13,730	1982	sand flats, forests, shallow beach zone (NWA is 50% wetland, 50% upland)
Oak Hammock Marsh	Ramsar	MB	no	3,600	1987	1,400 marsh 2,200 upland
Delta Marsh	Ramsar	MB	no	23,000	1982	wetlands, ridges 16,600 wildlife habitat 7,700 shooting grounds 2,000 bird refuge 1,600 wetlands
Quill Lakes	Ramsar	SK	no	63,500	1987	saline lakes and farmland
Last Mountain Lake NWA & MBS	Ramsar	SK	no	15,602	1982	wetlands and agric. lands, wetlands 21%, 68% open water
Whooping Crane Summer Range	Ramsar, NP	AB, NWT	no	1,689,500	1982	86% in Wood Buffalo National Park
Peace-Athabasca Delta	Ramsar, NP	AB, SK	no	321,200	1982	aspen, emergent vegetation, mud flat, fern, sedges, grass meadow, tall shrubs, trees, rock
Hay Zama	Ramsar	AB	no	50,000	1982	lakes & forested floodplain

Ramsar Name	Type	Location	Marine (ha)	Total (ha)	Date of Ramsar desig'n	Key habitats
Beaverhill Lake	Ramsar	AB	no	18,050	1987	6,070 ha forested land, 11,980 ha water
Rasmussen Lowlands	Ramsar	NWT	yes	300,000	1982	level plain & cobble beach coast
Queen Maud Gulf MBS	Ramsar, MBS	NWT	yes	6,278,200	1982	coastal & inland wetlands - 50%; upland - 50%
Polar Bear Pass NWA	Ramsar, NWA	NWT	yes	262,400	1982	coastal shores
McConnell River MBS	Ramsar, MBS	NWT	yes	32,800	1982	low lying plain & intertidal beach, coastal zone, tidal flat/open water 25% sedge lowland 75%
Dewey Soper MBS	Ramsar, MBS	NWT	yes	815,900	1982	wide tidal low relief zone & beach system + inland water bodies, rock and peatlands. 10% tidal mudflat/open water; 85% sedge low
Old Crow Flats	Ramsar, SMA	YK	no	617,000	1982	2,000 freshwater lakes & wooded plain
Creston Valley Wildlife Management Area	Ramsar, WMA	BC	no	6,970	1994	wetlands, freshwater area and forest
Alaksen NWA	Ramsar, NWA, MBS	BC	yes	586	1982	70% farmland, 15% freshwater & tidal marsh; 5% woodland; 5% built-up or shore flat

Table C-2. Western Hemisphere Shorebird Reserves in Canada, indicating presence of a marine component and key habitats.

There are four classes of shorebird reserve under the WHSRN program—international, hemispheric, regional and endangered species reserves. The latter category has not been included in the table below; Canada has 8 endangered species shorebird reserves.

Reserve name	Type of Reserve	Location	Marine component	Total (ha)	Date est'd	Key habitats
Bay of Fundy	hemispheric	NB, NS	yes	62,000	1988	tidal flats, salt marsh 34 species of shorebirds, about 1 million Semipalmated Sandpipers during late summer migration
Last Mountain Lake	regional	SK	no	15,600	1994	mixed grassland habitat, potholes, springs, fen bogs, inland saline wetland complexes, shallow marshy bays, freshwater lake; important migratory stopover, over 250 bird species
Quill Lakes	international	SK	no	40,000	1994	inland saline lakes in a mixed grassland ecosystem, mudflats, open marsh; migratory stopover
Beaverhill Lake	regional	AB	no	14,310	1996	13,900 ha water area, 410 ha upland habitat; large, inland lake with open water, muddy shorelines, reed-choked bays, rocky points, willow and poplar shrubs, open rough pastures; variable water levels, grazing