

**Conserving Wildlife on a Shoestring Budget –  
Opportunities and Challenges for Canada’s National Wildlife Areas,  
Migratory Bird Sanctuaries and Marine Wildlife Areas**



G. Lelièvre, CWS

**prepared by the Canadian Nature Federation  
September 2002**



# **Conserving Wildlife on a Shoestring Budget – Opportunities and Challenges for Canada’s National Wildlife Areas, Migratory Bird Sanctuaries and Marine Wildlife Areas**

## **Executive Summary and Recommendations**

Environment Canada’s national wildlife areas (NWAs) and federally-regulated migratory bird sanctuaries (MBSs) provide protection for some of Canada’s most important wildlife habitat. The Canadian Nature Federation, as co-sponsor of the Canadian Important Bird Areas Program, has prepared this report to assess the status of these areas and the current capacity of Environment Canada to effectively conserve wildlife within them.

Environment Canada’s Canadian Wildlife Service (CWS) manages 49 national wildlife areas and 94 migratory bird sanctuaries, together conserving an area twice the size of Nova Scotia. These sites serve as essential wildlife habitat for migratory birds and species at risk, particularly in some of Canada’s most threatened and degraded southern landscapes, in coastal regions, in prairie wetlands, and in the Arctic.

CWS’ 143 protected areas are currently being managed on an annual budget of \$1.7 million, or 15 cents per hectare, which is a mere fraction of what is needed to ensure their ecological integrity. The current lack of capacity and resources within CWS is seriously impeding its ability to effectively protect this network. Most sites are not actively being managed, enforcement activity is sporadic, there are significant public and employee health and safety liabilities, and the ecological integrity of many sites is at risk.

On and off-site threats to the network are numerous, imminent, and widespread:

- Exotic species are present at over half of the sites, altering the habitat and crowding out native species
- Unregulated poaching, boating, and active disturbance is seriously disturbing wildlife
- Agricultural and urban encroachment threaten the ecological integrity of many sites
- Resource exploration and development adjacent to and within many sites threaten their conservation value
- Climate change and toxic pollutants are impacting a variety of wildlife

These threats are for the most part being left unattended due to lack of funds. Many NWAs and MBSs stand in need of management plans, regulatory enforcement, and habitat enhancement. Staff are left to make decisions without adequate scientific data. Non-government research links are being lost, volunteers are declining, and conservation partnerships are in jeopardy. On-site buildings, roads, and trails are left in degraded and often dangerous condition.

There are important opportunities to expand the network to include dozens of new critical wildlife areas. Many of these opportunities are unfortunately being lost, as no dedicated funds are available for site acquisition. While other federal government departments are interested in transferring ecologically significant lands to CWS to form part of the network, existing government land transfer policies impose significant barriers and costs.

Canada's vast seascape is about 60% larger than our landscape, yet federal efforts to establish marine protected areas have to date been slow. There are a large variety of marine sites that are in critical need of protection. And while CWS has had the legal ability to establish a series of marine wildlife areas (MWAs) for over ten years, they have yet to create their first one.

National wildlife areas and migratory bird sanctuaries play a crucial role in conserving the nation's wildlife. The conservation value of these sites is in jeopardy. The Canadian Nature Federation offers the following 14 recommendations in four areas aimed at ensuring that Environment Canada's protected areas program meets its full potential:

### **Resource Allocation**

1. *That the Government of Canada allocate to Environment Canada a minimum annual budget of \$35 million for staff, operations and maintenance, expansion, and capital costs for the NWA-MBS-MWA network*

### **Vision and Strategy**

2. *That Environment Canada establish a clear vision for its protected areas network*

### **Enhancement of Current Network**

*That Environment Canada:*

3. *Assess the ecological values of sites in the NWA-MBS network*
4. *Modify the boundaries of existing sites to best conserve their ecological values*
5. *Prepare and update management plans for NWA-MBS sites in consultation with key stakeholders*
6. *Assess off-site threats to the network and implement strategies to minimize them*
7. *Increase on-site staff to enforce regulations and undertake conservation and research*
8. *Launch a public relations campaign aimed at enhancing the profile of the NWA-MBS network*
9. *Assess and deliver an array of public education opportunities within suitable NWAs*
10. *Establish partnerships with various sectors of society to help fulfill their protected areas functions*

## **Expansion of Network**

*That Environment Canada:*

- 11. Expand its system of national wildlife areas from 49 to 100 by the year 2006*
- 12. Develop an action plan for marine wildlife areas, and establish Scott Islands NWA (BC), and Igaliqtuuq NWA (NU) by the end of 2003*
- 13. Work with other departments to review and eliminate legislative, policy, and fiscal obstacles to site acquisition and management*
- 14. Increase their emphasis on the establishment of NWAs to include habitat for species-at-risk and significant habitats for rare and unique wildlife*

## **ACKNOWLEDGEMENTS**

The CNF would like to thank CWS for allowing us the opportunity to access their in-house reports and site management plans during research for this paper. Maya Brevan tirelessly conducted the initial research and development of this document, followed by additional research and revision by Catherine Austen. We gratefully acknowledge the George Cedric Metcalf Charitable Foundation for its support of this initiative. Thanks also go out to the many people who contributed their knowledge and expertise, and to those who reviewed the many, many drafts of this document.

# TABLE OF CONTENTS

<b>1.</b>	<b>INTRODUCTION</b>	<b>1</b>
<b>2.</b>	<b>ENVIRONMENT CANADA’S PROTECTED AREAS</b>	<b>2</b>
<b>2.1</b>	<i>History of the NWA-MBS Network</i>	2
<b>2.2</b>	<i>Components of the NWA-MBS Network</i>	4
2.2.1.	National Wildlife Areas	4
2.2.2.	Migratory Bird Sanctuaries	6
2.2.3.	Marine Wildlife Areas	8
<b>2.3</b>	<i>The NWA-MBS Network and the IBA Program</i>	8
<b>2.4</b>	<i>The NWA-MBS Network and Protected Areas in Canada</i>	9
2.4.1.	A Unique Purpose	9
2.4.2.	A Neglected Potential	10
<b>3.</b>	<b>THREATS TO IBAS IN THE NWA-MBS NETWORK</b>	<b>12</b>
<b>3.1</b>	<i>Off-Site Threats</i>	12
<b>3.2</b>	<i>On-Site Threats</i>	18
<b>4.</b>	<b>THE MARINE CONTEXT</b>	<b>23</b>
<b>4.1</b>	<i>Protected Marine Habitats in the NWA-MBS-MWA Network</i>	23
<b>4.2</b>	<i>National Cooperation on a Marine Protected Areas Network</i>	24
<b>4.3</b>	<i>Future Strategy for CWS</i>	26
<b>5.</b>	<b>CHALLENGES TO CONSERVATION IN THE NWA-MBS NETWORK</b>	<b>27</b>
<b>5.1</b>	<i>Unmet Legal and Policy Obligations</i>	27
<b>5.2</b>	<i>Legislative and Policy Obstacles to Site Acquisition and Management</i>	27
<b>5.3</b>	<i>Lack of Standards and Accountability</i>	29
<b>5.4</b>	<i>Limited Network Coverage</i>	29

5.5	<i>Information Gaps and Ecological Challenges</i>	31
5.6	<i>Insufficient Management Planning</i>	31
5.7	<i>Lack of On-Site Staff</i>	32
5.8	<i>Social Challenges</i>	33
5.9	<i>Financial Challenges</i>	35
<b>6.</b>	<b>RECOMMENDATIONS</b>	37
	<b>SELECTED BIBLIOGRAPHY</b>	42
	<b>CASE STUDIES,</b>	
1 -	Logging and cranberry production threaten Atlantic Canada's largest wetland	13
2 -	Turning up the heat on Canada's northern wilderness	16
3 -	Boater disturbance of waterbird nesting colonies in Canada's great lakes	19
4 -	Exotic species in Canada's most threatened landscapes	21
5 -	Protecting one of Canada's most important seabird breeding colonies	25
6 -	Lighthouses and birds: threats to a common Canadian heritage	28
7 -	Canada's military on guard for Canada's grasslands	30
8 -	Cap Tourmente: blending nature, heritage & education	34
	<b>APPENDICES</b>	
	<b>I The IBA Program</b>	46
	<b>II IBA sites in the NWA-MBS Network</b>	47
	<b>III Site selection criteria for NWAs and MBSs</b>	49
	<b>IV Status of NWA and MBS management plans</b>	52

## 1. **INTRODUCTION**

The Important Bird Areas (IBA) Program is a global effort of BirdLife International to identify and protect the most critical habitats for the world's birds. The Canadian IBA Program is being delivered by the Canadian Nature Federation (CNF) and Bird Studies Canada (BSC). 597 Important Bird Areas have been identified in Canada of global, continental or national significance. Of these 597 IBAs, 80 are located partially or wholly within Environment Canada's national wildlife areas (NWAs) and migratory bird sanctuaries (MBSs).

This report has been prepared primarily to help the Canadian Nature Federation determine the current and potential role that Environment Canada's protected areas play in conserving wildlife across Canada, and in particular within the country's Important Bird Areas.

Environment Canada's protected areas network serves a vital role in Canada's efforts to conserve our biodiversity. It includes some of the country's most important terrestrial and aquatic bird habitat, and has the potential to play a key role in preserving our marine environment and provide essential habitat for species-at-risk. However, Environment Canada lacks the necessary staff and resources to effectively manage their existing network of NWAs and MBSs, much less look to expand this network in a meaningful way.

Through an expanded and effective network of marine and terrestrial protected areas, Environment Canada has the ability to effectively conserve a diverse array of wildlife, including up to one fifth of Canada's IBAs. This document explores the threats, conservation needs and opportunities for Environment Canada's network of national wildlife areas and migratory bird sanctuaries (hereafter referred to as the NWA-MBS network) as well as for future marine wildlife areas. It then offers a series of important recommendations aimed at ensuring that Environment Canada fulfils its essential role in conserving wildlife habitat. Case studies throughout the document outline the threats, challenges, opportunities, and successes at specific sites within the network.

### **Lac Saint-François NWA, QC**



## 2. ENVIRONMENT CANADA'S PROTECTED AREAS

Environment Canada's Canadian Wildlife Service (CWS) manages a network of 49 national wildlife areas (NWAs) covering almost 500,000 hectares, and, in cooperation with the provinces, territories and private landowners<sup>1</sup>, 94 migratory bird sanctuaries (MBSs) encompassing over 11,000,000 ha, of lands and waters. It has the authority to expand this network by establishing new NWAs, MBSs or marine wildlife areas (MWAs). The goal for CWS in designating these sites is not to achieve representation of ecosystems, but to protect native wildlife populations, particularly migratory birds and species-at-risk, in their critical habitats.

**National Wildlife Areas** conserve essential habitat for migratory birds and other wildlife. Harmful activities are prohibited at NWAs at all times. NWA lands are owned by the federal government.

**Migratory Bird Sanctuaries** protect migratory birds against physical disturbance and hunting, however many other activities are allowed which can adversely affect migratory birds and their habitat. MBSs include a mix of privately owned, provincial, territorial, and federal lands.

**Marine Wildlife Areas** can be established by Environment Canada, although none has been created to date. The degree of protection that an MWA designation would afford is not yet known, as regulations have not been developed. Some of Canada's marine environment is included within existing NWAs and MBSs.

### 2.1 *History of the NWA-MBS Network*

The *Migratory Birds Convention Act (MBCA)*, passed by the federal Parliament in 1916 authorized the federal government to designate MBSs with a goal of protecting migratory birds against physical disturbance and hunting—the main threats to bird populations at the time. Over half of today's MBSs were established in the first half of the twentieth century, and a full 78% of them were designated prior to 1966.<sup>2</sup>

By the late 1960s, it was clear that the biggest threat to migratory birds—and to other wildlife species—was the loss and degradation of habitat, which MBS Regulations at the time did not adequately address. CWS then initiated the National Wildlife Areas Program to preserve important lands for wildlife, which in practice was applied to wetlands for waterfowl.<sup>3</sup>

*Lands at Last Mountain Lake, SK (IBA SK001), were first reserved as North America's first bird sanctuary in 1887 by then Prime Minister John A. MacDonald. In 1917, the site was formally designated an MBS, with the passage of the MBCA, and has since also been established as an NWA.*

*Last Mountain Lake is one of the prairie provinces' most important refueling stations for waterfowl and shorebirds on their way from the Arctic to the southern U.S.*

<sup>1</sup> Many MBSs are owned privately or by provincial or territorial governments

<sup>2</sup> Today's 94 MBSs were designated in the following decades: 1910s: 3; '20s: 19; '30s: 10; '40s: 16; '50s: 14; '60s: 14 (11 from 1960-65; 3 from 1966-69); '70s: 4; '80s: 9; '90s: 5.

<sup>3</sup> Land acquisitions from 1966 to 1976 reflected this narrow focus, with 18,700 ha of wetlands acquired at a cost of \$8.7 million (Source: Smith, 2000).

In 1973, the *Canada Wildlife Act* was passed, authorizing the establishment of NWAs to conserve essential habitat for migratory birds and other wildlife in the national interest. By 1976, CWS was working to broaden the focus of the NWA network to conserve habitat for non-game birds and other wildlife, including species at risk. However, in the mid-1980s, budget cuts ground site acquisition activities to a near halt.<sup>4</sup>

In 1994, the *Canada Wildlife Act* was amended to authorize Environment Canada to designate marine wildlife areas (MWAs), which extend beyond the territorial sea to the 200-mile limit. No MWAs have yet been designated, though potential sites have been identified in Environment Canada's Pacific and Yukon region.

Today's NWA-MBS network was largely established prior to the mid-1980s. The network's expansion has been limited since then, reflecting its funding. However despite extremely low budgets, CWS has designated three NWAs and five MBSs in the past decade—six of which contain IBAs—and initiated consultations for further proposed sites. Proposals for at least 20 new NWAs are currently under consideration.

---

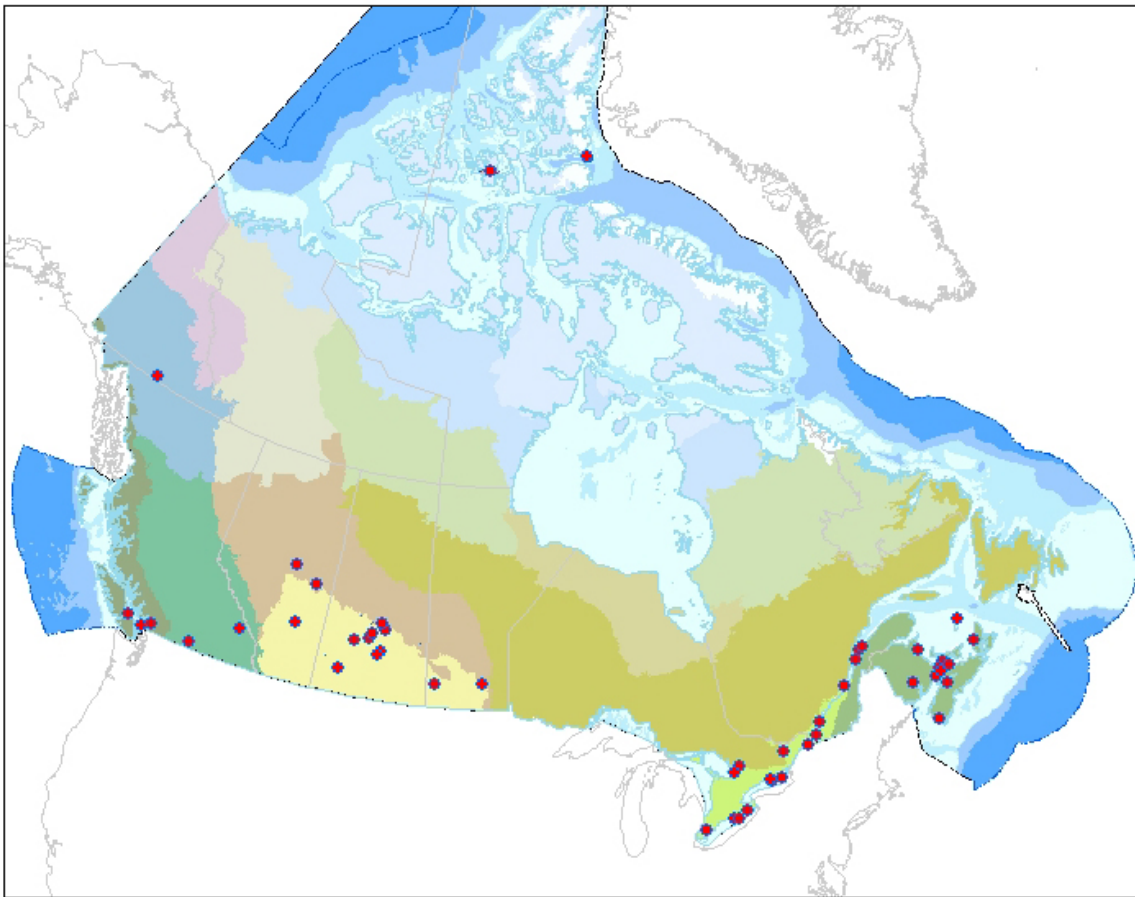
<sup>4</sup> Of today's 49 NWAs, 42 were designated from 1966-1985.

## 2.2 Components of the NWA-MBS-MWA Network

### 2.2.1. National Wildlife Areas (NWAs)

Canada's NWA network comprises 49 sites totaling approximately 490,000 ha, including over 170,000 ha of marine ecosystems. It spans all provinces and territories except Newfoundland and Labrador and Prince Edward Island. The vast majority of NWA lands and waters—over 445,000 ha—is held in just three sites in the northern territories, all of which are IBAs. NWAs range in size from the 262,400 ha Polar Bear Pass, NU (IBA NU048) to a mere 0.6 ha on Eleanor Island, ON.

**Canada's 49 National Wildlife Areas**



The *Canada Wildlife Act* authorizes NWAs to be designated for the purposes of conservation, research, and education. Their primary goal is to conserve essential habitat for migratory birds and—if in the national interest and with the support of provinces—other wildlife species, especially species at risk (refer to Appendix 3 for NWA selection criteria).

NWA designation provides the strongest form of habitat protection available to Environment Canada. Once an NWA is designated, regulations prohibit harmful activities on the site at all times, with protection extending to the full habitat. Without a permit, it is unambiguously prohibited to hunt or fish, carry arms or tackle, possess or molest animals, damage plants, let pets run, conduct any agricultural, commercial, industrial, or recreational activity, light fires, operate

conveyances, damage any objects, disturb soil, or deposit waste on a NWA. Enforcement of NWA Regulations is by Wildlife Area Officers in cooperation with provincial conservation officers and the RCMP.

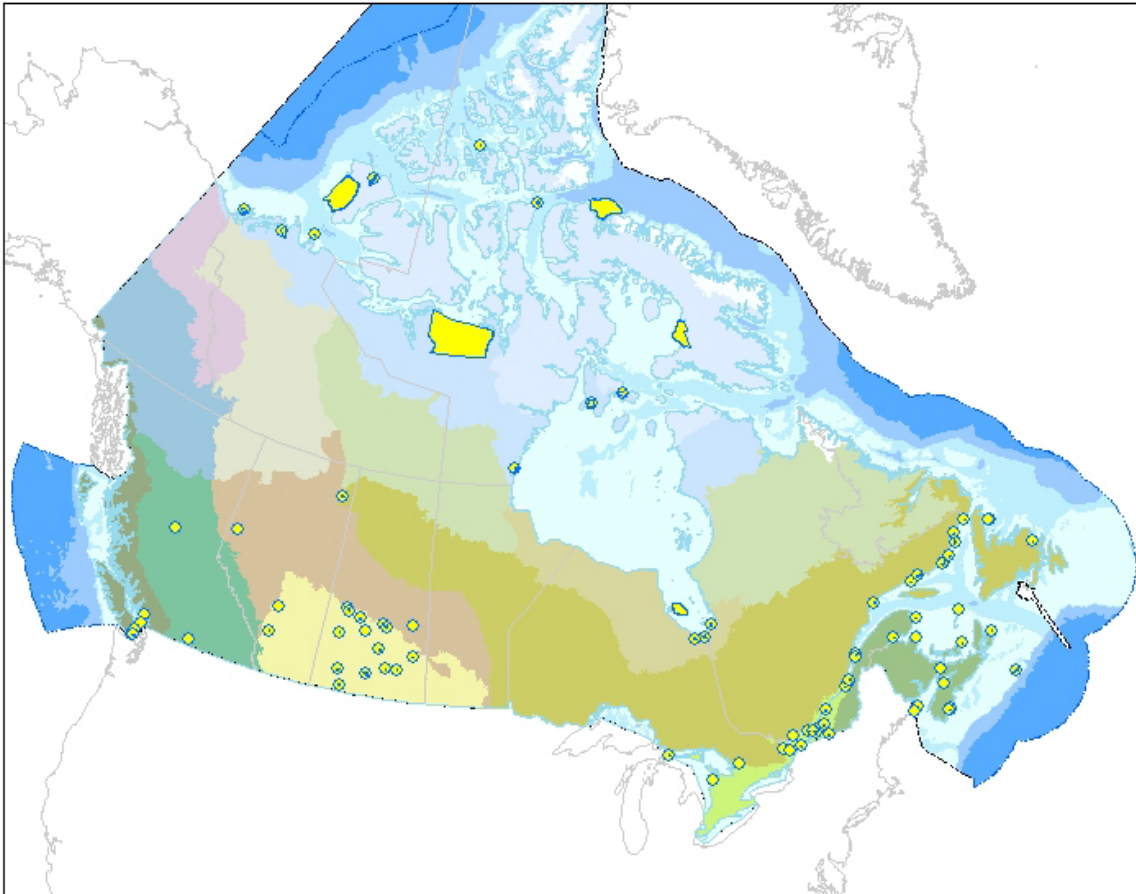
All but one NWA can be classified as “Habitat and Wildlife Management Areas” in Category IV of the IUCN “Framework for the Classification of Terrestrial and Marine Protected Areas”. The protection of nature and survival of species is the primary purpose of sites in this category, but human use, including the harvest of renewable resources, may play a management role. Sub-surface rights (e.g. right and access to lands and minerals beneath the ground’s surface) are not included within the NWAs, with the exception of Polar Bear Pass, Nirjutiqavviq NWA (IBA NU10), and the proposed Igaliqtuuq NWA, which are classified as IUCN Category I sites. NWA designation, while providing clear habitat protection, still allows for flexible site management. Carefully regulated on-site activities, including waterfowl hunting, may be permitted if compatible with conservation of the NWA’s wildlife and habitats. There is an unwritten policy that site management plans should be prepared and regularly updated for each NWA. On-site activities to be allowed under permit are specified in a management plan.

NWAs are usually owned, though occasionally leased over the long-term, by Environment Canada. Potential sites must be acquired by Environment Canada prior to NWA designation—an often difficult task made more arduous by lack of funds. The proposed *Species at Risk Act* may ease this in some cases by authorizing Environment Canada to designate NWAs on federal lands not owned by the department, and to regulate for the protection of habitat without a land transfer.

### 2.2.2. Migratory Bird Sanctuaries (MBSs)

Canada's 94 MBSs cover just over 11,000,000 ha, including 2,700,000 ha of marine ecosystems. They are established in all provinces and territories except MB and YT, and range in size from 6,278,200 ha at Queen Maud Gulf (IBA NU009), to 0.6 ha at Eleanor Island, ON. The vast majority of MBS lands and waters—over 10,000,000 ha—is held in 15 sites in the northern territories, all of which are IBAs.

**Canada's 94 Migratory Bird Sanctuaries**



The purpose of a migratory bird sanctuary is to provide a safe haven for birds, with site selection based on bird populations (refer to Appendix 3 for MBS selection criteria). Historically, the MBS designation has protected birds—most often shorebirds, waterfowl and seabirds—from hunting and other sources of disturbance at critical breeding grounds and migratory stopovers. Other activities are nonetheless allowed.

MBS land ownership may be federal, provincial, or private, and many MBSs are in fact co-managed or under the jurisdiction of other governments or agencies. In practice, this makes MBSs more easily established than NWAs, but more difficult to protect.

MBS site management can include site inspections and wildlife surveys, enforcement of regulations and hunting bans, maintaining signs and educational facilities, and undertaking habitat enhancement or research. MBS designation does not require the development of a site management plan, though a plan may be required under other mechanisms such as land claims. MBS site reviews should be conducted every 5 years and the MBS de-listed if site selection criteria are no longer met. Six MBSs have in fact been de-listed since 1996.

The extent to which MBS designation protects habitat is a matter of dispute. Habitat was not specifically protected by the *MBCA* until a 1974 amendment to the MBS Regulations. However, MBSs are designated because they are important habitat for migratory birds, and the MBS system has always been intended to maintain these safe havens. Hunting of migratory birds is regulated throughout Canada, however regulations are more stringent in MBSs.

MBS Regulations unambiguously prohibit hunting or possessing migratory birds or their eggs, disturbing nests, carrying weapons, or letting pets run on the site. Since 1974, the Regulations have also stated, in Section 10 (1): “No person shall, in a migratory bird sanctuary, carry on any activity that is harmful to migratory birds or the eggs, nests or habitat of migratory birds, except under authority of a permit.”

This prohibition against harm to habitat is unfortunately vague (e.g., which elements of the MBS constitute the habitat of migratory birds?), especially when compared to the precise actions prohibited anywhere on site in NWA Regulations. Furthermore, Section 10 of the MBS Regulations follows a section on permitting and is removed from the earlier, more longstanding prohibitions against hunting and possession. Application of Section 10(1) to privately owned MBSs is unclear, as government authority to permit under the MBS Regulations applies only on government lands.

Clearly, Section 10(1) allows EC to regulate activities affecting habitat on government-owned lands via a permitting system, and to take action to protect habitat on a case-by-case basis. In the northern region, for example, EC succeeded in deterring mining in Queen Maud Gulf MBS (IBA NU009) on the basis of threat to migratory birds *and their habitat*.

Unfortunately, it is Environment Canada itself that most often belittles the protective capacity of the MBS designation. This cannot be reconciled with Environment Canada’s inclusion of MBSs in its network of protected areas at all—and MBSs constitute 95% of that network. In today’s environment, where habitat loss is the greatest threat to wildlife, “areas where wildlife is protected” are not at all the same as “areas protected for wildlife”. MBSs have the potential to be the latter, at least on government-owned lands, but they will not fulfill this potential until Environment Canada acknowledges their mandate for habitat protection under the *MBCA* and enforce the *Act* accordingly.

### 2.2.3. Marine Wildlife Areas (MWAs)

Environment Canada can establish marine protected areas through the NWA and MBS designations, which cover inland waters and the territorial sea, or through marine wildlife areas (MWAs), which may extend from 12-200 miles offshore. MWA designation could be applied to marine areas with significant concentrations of seabirds, or to the critical habitats of other wildlife.

Progress in identifying potential MWAs has been slow due to a number of factors, including lack of funding, lack of expertise, and legislative ambiguity over MWA control.<sup>5</sup> No marine area is yet protected under MWA designation, and no regulations have been developed for Environment Canada MWAs. Hence it is difficult to judge the potential of such sites in conserving bird habitat. This issue is further discussed in Section 4.

### 2.3 *The NWA-MBA-MWA Network and the IBA Program*

Close to two thirds of Environment Canada's protected areas overlap with IBA sites<sup>6</sup>, including 25 NWAs (holding 28 IBAs) and 57 MBSs (holding 59 IBAs)<sup>7</sup>. Seven sites share all three designations: NWA, MBS and IBA. In terms of land area, the overlap of the NWA-MBS network with IBAs is closer to 95%.<sup>8</sup> Refer to Appendix 2 for a list of IBAs that fall within NWAs or MBSs.

This high level of overlap is expected to increase in the future. Priority sites for future CWS protected areas overlap heavily with identified IBAs. Further, there are similar evaluation criteria for identification of IBAs and NWAs, both of which require the presence of at least 1% of the national population of a bird species. There is therefore the long-term possibility for many of the 597 IBAs that are located on federal lands to be established as NWAs. In short, the NWA-MBS network has the potential to conserve a significant number of Canada's most Important Bird Areas, in addition to many other conservation values.

---

<sup>5</sup> While the *Canada Wildlife Act* authorizes Environment Canada to establish MWAs out to the 200-mile limit, its authority to "administer and control" marine areas remains restricted to the territorial sea until appropriate regulations are developed.

<sup>6</sup> While in some cases only a portion of the identified IBA falls within an NWA or MBS, more often one or several entire IBAs are contained by the NWA or MBS.

<sup>7</sup> All NWAs and MBSs were considered for IBA status, though only about 60% merited it. Several NWAs and MBSs have suffered habitat degradation since their original designation and so do not meet IBA criteria as they may have done in former days. However, lack of IBA designation does not in itself indicate lack of ecological integrity. While both NWAs and MBSs have been designated to protect significant populations of migratory birds, site criteria for NWA and MBS status differ from that for IBA status. An NWA, for example, can be designated to protect non-bird species, or a MBS can protect regionally significant bird populations.

<sup>8</sup> The 25 NWAs that overlap with IBA sites comprise over 475,000 ha of land while the 24 NWAs that are not within the IBA network hold just under 12,000 ha. Likewise, the 57 MBSs that overlap with IBA sites comprise almost 10,500,000 ha of land while the 37 MBSs that are outside of the IBA network hold just over 30,000 ha.

## 2.4 *The NWA-MBS Network and Protected Areas in Canada*

### 2.4.1. A Unique Purpose

NWAs and MBSs complement other federal and provincial protected areas such as parks and reserves, and voluntary stewardship measures promoted through the Habitat Stewardship Program, the Western Hemisphere Shorebird Reserve Network (WHSRN), Ramsar wetlands of international importance, the North American Waterfowl Management Plan, and other programs. Yet they hold a unique place in this broader context—special places of outstanding significance to the conservation of birds and Important Bird Areas.

NWA and MBS designations have legal consequences and automatic protections that Ramsar, WHSRN, and IBA site designations lack. Yet, unlike most other legally protected areas, NWAs and MBSs are designated specifically to protect wildlife of national concern—especially migratory birds. CWS’ protected areas further significantly assist the federal government in meeting many of its environmental commitments, priorities, and legislated mandate, including the *Species at Risk Act*, the *Migratory Birds Convention Act*, the *Canada Wildlife Act*, the North American Bird Conservation Initiative, to name but a few.

Historically, a large number of CWS’ protected areas have been established in some of Canada’s most threatened southern landscapes, which are undergoing disturbance and fragmentation. These areas are often the largest and most important undisturbed habitats in these landscapes, providing essential core havens for a variety of threatened wildlife.

The Canadian Conservation Areas Database (CCAD), developed by Environment Canada and the Canadian Council on Ecological Areas, identifies approximately 3,500 government-owned protected areas in Canada, covering about 788,000 km<sup>2</sup><sup>9</sup>, of which the NWA-MBS system contributes 14.6% (14% for MBSs and 0.6% for NWAs). About 35% of total government-protected areas in Canada is devoted explicitly to wildlife conservation, and of that amount, a full 42% is contained in NWAs and MBSs.<sup>10</sup>

There is also significant potential to add to CWS’ network of protected areas. An additional 20 sites have been identified on a priority basis as potential new NWAs or MBSs<sup>11</sup>. Further, there are opportunities to redesignate as NWAs many current MBSs that are found on federal government owned lands, thus increasing the level of protection afforded.

Despite its unique purpose, the NWA-MBS network is little publicized and its special place in Canada’s protected areas network is little celebrated. Yet the continual loss of critical bird habitats and the growth of bird conservation initiatives like the North American Bird Conservation Initiative and the IBA Program over the last decade have intensified the need for an improved NWA-MBS network.

---

<sup>9</sup> Source: “Canadian Biodiversity Strategy” on Environment Canada’s Environmental Monitoring and Assessment Network (EMAN) web site.

<sup>10</sup> Source: *Contributing to Ecological Integrity*, CWS Draft Discussion Paper: 2001.

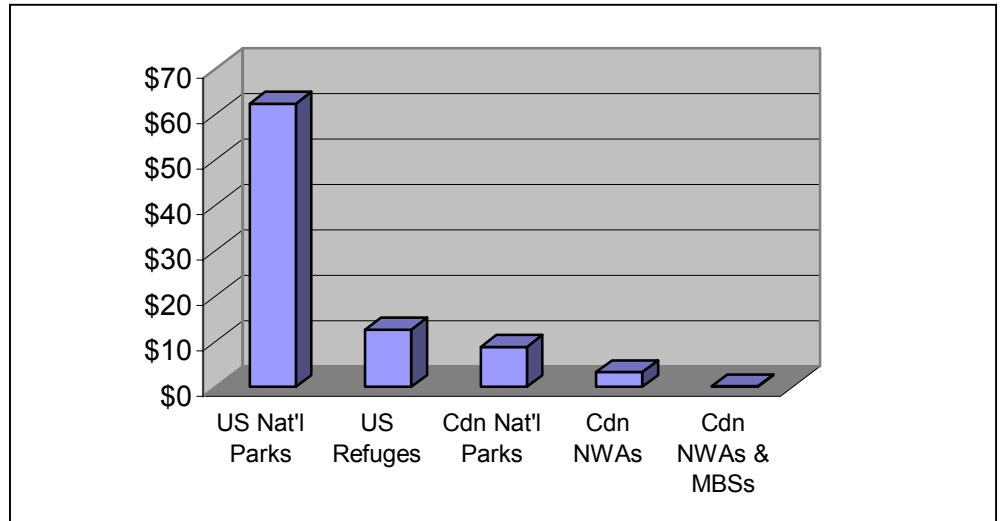
<sup>11</sup> Personal communication with CWS

### 2.4.2. A Neglected Potential

In the United States, there has been recent publicity over a funding crisis in the national wildlife refuge system. The 538 U.S. refuges threatened by pollution, invasive species, and development projects lack staff, funding, and public education facilities to combat them.<sup>12</sup> Yet a comparison of financial capacity shows that the funding crisis is much worse for Canada's NWAs and MBSs.

The US spends about \$12.61/ha on management of its Refuge system, compared with \$62.44/ha<sup>13</sup> on its national park system<sup>14</sup>. In comparison, Environment Canada spends only about \$1,744,000 per year on the entire NWA-MBS network<sup>15</sup>. If this were the annual budget for NWAs alone, it would

**Government Spending on Protected Areas**  
(per hectare Operations and Maintenance Budget (Canadian dollars))



amount to \$3.56/ha—about one quarter the funding level available to the US Refuges. But this \$1,744,000 budget is meant to maintain and enhance the entire NWA-MBS network—a tough job on only \$0.15/ha.

Canada's NWA-MBS network contains 47% as much land as our national parks system, but works on less than 1% of the budget. Indeed, the total budget of the entire NWA-MBS network of 143 sites is much less than the annual budget of many single national parks: it is about one half of Pacific Rim N.P.'s 1998-99 budget of \$3,391,400, and less than one-third of Wood Buffalo N.P.'s budget of \$5,299,600 in the same year<sup>16</sup>.

A recent report from the Panel on Ecological Integrity of Canada's National Parks has generated good publicity for the need for renewed financial resources to expand and maintain the national parks system. Parks Canada spent about \$218,330,000 in 2000-01 on its 246,926 km<sup>2</sup> (24,692,600 ha) of national park lands<sup>17</sup>, amounting to \$8.84/ha. There is overwhelming acknowledgement that this amount is insufficient to address the threats to the national parks system, yet this amounts to 60 times more resources than the NWA-MBS network.

<sup>12</sup> *Refuges in Crisis*, National Audubon Society.

<sup>13</sup> *Shortchanging America's Wildlife*, Cooperative Refuge for Refuge Enhancement. 2001

<sup>14</sup> Source: *Restoring America's Wildlife Legacy*, Cooperative Alliance for Refuge Enhancement. 1999 Update.

<sup>15</sup> Source: *Contributing to Ecological Integrity*, CWS Draft Discussion Paper: 2001.

<sup>16</sup> Source: Section 13-8, Report of the Panel on Ecological Integrity of Canada's National Parks: 2000.

<sup>17</sup> Source: 2000/01 O&M figures for all Parks Canada Agency obtained through personal comm with Mike Fay of Parks; it was estimated that 56.5% of this amount was used for National Parks (the remainder being used for Historic Sites). The 56.5% figure was obtained based on the Panel on Ecological Integrity Report for 1999/2000 spending ratios.

Although it is important to recognize that national parks necessarily require more funds than do NWAs or MBSs, in particular to manage visitation activities, the 15 cents that CWS has to address the threats to each hectare of the NWA-MBS network certainly cannot be sufficient.

*“There has been no money allocated to new land acquisition by EC under their MBS or NWA programs since 1984. The test of Canada’s commitment to protected areas is not its promises, but budgetary allocations.”*

**Sierra Club Rio Report Card, July 2001**

This comparison is not meant to dismiss the claim that American Refuges or Canadian National Parks are in a funding crisis. On the contrary, these claims are quite appropriate—funding for these sites is insufficient to address current threats. However, the comparison *is* meant to emphasize the poor status granted to Canada’s national wildlife areas and migratory bird sanctuaries.

Environment Canada’s NWA-MBS network is a sorely neglected part of the larger protected areas context. Unless Canada is willing to let these sites decline or fail in protecting Canadian birds and other wildlife, a major investment of funds and attention is required.

### 3.0 **THREATS TO IBAs IN THE NWA-MBS NETWORK**

The following is a brief overview of on-site and off-site activities currently threatening IBAs in the NWA-MBS network. This is not a thorough assessment of threats to Environment Canada's network of protected areas. While there is evidence that ecological integrity is suffering at many sites in the NWA-MBS network, no "state of the network" assessment or consistent site-by-site evaluations have yet been produced.

One of the greatest threats to Environment Canada's protected areas is the lack of real habitat protection currently afforded within migratory bird sanctuaries. The majority of off-site threats discussed below, such as urban expansion and resource extraction, are actively being undertaken within MBSs on non-federal lands, to the detriment of wildlife habitat. The distinction between on-site and off-site threats to non-federally owned MBSs is therefore often meaningless, as all these threats are also present on-site.

#### 3.1 ***Off-site Threats***

Off-site activities that threaten NWAs and MBSs are widespread and damaging. These threats include conversion of natural habitat by agricultural, urban or industrial expansion, degradation and fragmentation of habitat by resource extraction operations or the construction of dams and dykes, habitat contamination from agricultural run-off, oil spills, aquaculture and industrial operations, and climate change. Following are a few examples of off-site threatening activities:

##### **Agricultural expansion**

Canada lost a huge portion of its natural wetlands and grasslands to agricultural expansion during the 20<sup>th</sup> century. Today, agriculture continues to directly destroy natural habitat via land use conversion and can further degrade adjacent or nearby habitat through chemical contamination. For example, agricultural activities near Lac Saint-Francois NWA (IBA QC137) release damaging pesticides into the NWA's aquatic environment and cranberry production next to Portobello Creek NWA (IBA NB010) is altering the habitat.



**Soil erosion at Alaksen NWA, BC**

##### **Urban and Industrial Expansion**

*Canada's National Programme of Action for the Protection of the Marine Environment from Land-Based Activities (NPA)* notes that most loss or degradation of shoreline habitat comes from the cumulative impact of many small-scale activities by individuals, small industries or local utilities. More infrequent large-scale alterations are also significant in their impact: for example, construction of a provincial highway adjacent to Portobello Creek NWA (IBA NB010) is damaging 55 hectares of marshland.

### ***Case Study 1 - Logging and cranberry production threaten Atlantic Canada's Largest Wetland***

Portobello Creek NWA forms part of the single largest wetland complex in Atlantic Canada. Situated on the Lower Saint John River in Southcentral New Brunswick, the tidal influence and extensive spring flooding at this site have created a unique hardwood marsh complex. It is estimated that over 1% of North America's yellow rail population breeds in this area. The region supports Atlantic Canada's only breeding population of greater scaup, the largest breeding concentration of black terns in the northeast, and thousands of other waterfowl.

As with many of Canada's national wildlife areas, Portobello Creek and the surrounding wetlands are threatened by a death from a thousand cuts. The NWA is comprised of a patchwork of lands that are interspersed with adjacent private land holdings. Various competing and often incompatible uses dominate the landscape.

Large-scale commercial cranberry facilities have been sprouting up on private lands adjacent to the national wildlife area, clearing forests, changing seasonal flooding and hydrology patterns, and silting the adjacent Portobello River.

The construction of the Trans Canada Highway through the center of the wetland complex forced the CWS and the province to help develop a management plan to mitigate impacts from this major transportation corridor. Recreational access creates additional pressures and challenges.

#### **Cranberry facility adjacent to Portobello NWA**

The Canadian Wildlife Service includes in its plan the purchase of key land holdings within the wetland. But when 72,000 acres of prime land recently came up for sale, they lacked the resources for this important acquisition. Instead, the land sold to date has been purchased by forestry interests for logging, further compromising the overall ecological integrity of the area. Adding insult to injury, it may be necessary to permit heavy logging machinery to access these lands by traveling directly through the National Wildlife Area.

Canada owns one quarter of the world's wetlands, but 80% of these are already degraded. To preserve Canada's remaining wetlands, including the floodplains of the Lower Saint John River, requires the concerted effort of many. Partnerships under the North American Waterfowl Management Plan (NAWMP) have been essential to the conservation of this area and have resulted in the protection of over 5,100 ha of the wetland complex. The Canadian Wildlife Service owns over 2,100 ha of wetland area and the NB government, Ducks Unlimited, and others have purchased over 3000 additional hectares. A joint federal-provincial management plan has been developed for the area and the Grand Lakes Meadows component has been recently incorporated into the New Brunswick Protected Areas network.

### **Resource Extraction**

Nearby resource extraction can degrade protected habitat through contamination or fragmentation of wildlife corridors. For example, oil and gas exploration has long been occurring in the Mackenzie River Delta around the boundaries of Kendall Island MBS (IBA NT016). Interest has been expressed in marine mining for precious metals in Newfoundland's Baie Verte Peninsula and the Bay of Fundy. Interest in minerals extraction is increasing in the Queen Maud Gulf MBS (IBA NU009). Extraction in these areas could affect a number of IBAs within the CWS protected areas network.

### **Dam construction**

Dam construction poses an existing or potential threat to IBAs from coast to coast. For example, the major threat to aquatic habitats in Vaseux Bighorn NWA/Vaseux Lake MBS (IBA BC262) is continual alteration of water levels by a dam on the river channel south of the lake, which floods riparian zones in most years. In Nova Scotia, proposed reddyking of salt marshes in Chignecto NWA (IBA NS002) and Amherst Point MBS could seriously alter the foraging and roosting habitat of birds. If the Quebec government ever implements its 1985 proposal to dam the mouth of James Bay, the results could be catastrophic to the James Bay marine and estuarine ecosystem, including Akimiski Island NWA (IBA NU036), Hannah Bay MBS (IBA ON123), Baie de Boatswain MBS (IBA NU097), and Moose River MBS (IBA ON138).

### **Aquaculture**

The aquaculture industry can degrade nearby natural habitats via invasion of non-native species, contamination through pesticides and other pollutants, and direct coastal development. It has been difficult for Environment Canada's Atlantic region to keep abreast of new developments and exact locations of operations in this rapidly expanding industry. Jurisdictional complexities surrounding inter-tidal areas make control of this threat even more difficult. For example, a lease for clam farming in Portage Island NWA, NB was provincially approved without CWS knowledge or input, though CWS was able to press for operational changes.

### **Toxics**

Contamination is a major threat to several IBAs. For example, an abandoned dumping ground near Montmagny MBS (IBA QC104) is a possible source for high levels of zinc, chromium, and mercury in the Sanctuary's waters. In addition, many sites, especially in the north and along the St. Lawrence River, are at great risk of contamination through oil spills. Section 35 of the *MBCA* Regulations prohibits harm to migratory birds via oil spills in any Canadian waters—a legal deterrent whose potential is untapped.

The long-range transport of toxics also presents a threat to many wildlife species. Many recent reports document the impact of mercury from coal-fired power plants on loon populations on the East Coast, as well as changes in lake water chemistry because of acid rain. While many Persistent Organic Pollutants (POPs) have been banned in Canada, they continue to be a concern for wildlife in the St. Lawrence, Great Lakes and, most of all, the Arctic.

### **Habitat fragmentation through lack of connectivity**

Protected areas over 1,000 ha in size are generally thought to be reasonably resistant to off-site threats, while smaller areas are more prone to degradation by adjacent activities. Over 70% of NWAs and 60% of MBSs are less than 1,000 ha in size. Long-term conservation of these small sites will be extremely difficult without some form of site expansion or cooperative management of activities on the broader landscape to provide a buffer zone for sensitive habitats.

Several existing MBSs incorporate marine buffer zones around Sanctuary lands. For example, Prince Leopold Island (IBA NU006), Gros Mecatina (IBA QC033), and Les Rochers aux Oiseaux (IBA QC006) MBS each currently include 1 to 5 km marine buffer zones around the islands. In contrast, the boundaries of Saskatoon Lake MBS (IBA AB107) are those of the lake itself, leaving the shoreline completely unprotected. A terrestrial buffer zone would help conserve this and similar sites.

Where adjacent lands are privately owned, expansion of NWA boundaries can be difficult, as the site must first be acquired by Environment Canada. The MBS designation could be useful in such cases. For example, Terra Nova MBS covers sensitive areas adjacent to Terra Nova National Park (IBA NF017). Here, an MBS negotiated with adjacent landowners provides buffer protection for birds in existing protected areas without the landowner relinquishing the land.

Buffer zones are but one of the necessary tools to ensure that Environment Canada's protected areas maintain their ecological functions. Habitat connectivity is also essential in order that these areas don't become islands of extinction. Environment Canada will need to work at a landscape level in cooperation with varied users and owners of the land to ensure adequate mobility of migratory species throughout their needed habitat. The need for adequate connectivity is of particular importance in assisting wildlife populations to adjust to the impact of climate change on the landscape.

### **Climate change**

The impact of climate change on Environment Canada's protected areas is potentially devastating. A recent report<sup>18</sup> commissioned by the World Wide Fund for Nature notes that seven Canadian provinces and territories will have more than half of their natural habitat at risk as a result of climate change, and that even in the protected areas of the boreal forest and the Arctic, there is the potential for a 20% loss of species. The report further suggested that the migration capabilities of many wildlife species will not be able to keep pace with the anticipated warming rate.

Most climate models suggest that the strongest warming trends will occur in the Arctic and Antarctic regions of the planet. No protected areas in the Arctic will be immune. Permafrost underlying the northern tundra is already melting at an alarming rate, and changes in seasonal food availability in this area are predicted to threaten muskox, caribou, and many species of migratory birds. 15% of the world's bird species breed in the Arctic, including 55 species that breed exclusively in North America's far north. Scientists are unsure how the climatic variations will affect wildlife populations, but agree that changes will be significant.

---

<sup>18</sup> *Global warming and terrestrial biodiversity decline*, Malcolm and Markham, 2000

## Case Study 2 – Turning Up the Heat on Canada’s Northern Wilderness

Scientists widely believe that the Arctic will be one of the regions most significantly impacted by climate change, as temperatures increases will be greater in northern areas. While the impacts of climate change are still cause for much research and debate, winters in the Canadian Arctic are projected to average 5 to 8 °C warmer by 2100. More southerly wildlife species are expected to invade as the permafrost boundaries move north by as much as 500 km. A host of species that are intimately associated with Arctic ice could be negatively affected, including Arctic cod, polar bears, Peary caribou, walrus, narwhals and belugas.

Changes in vegetation patterns resulting from climate change are expected to be more extreme in tundra areas, with an estimated 44% to 57% conversion of tundra to forest<sup>19</sup>. The Queen Maud Gulf Migratory Bird Sanctuary (IBA NU009) was established to conserve the very lands that are at greatest risk from climate change. At 60,000 km<sup>2</sup>, the MBS is Canada's largest protected area and the most extensive wetland in the central Arctic. It was established in 1961 to protect what were then the only known nesting grounds of Ross' geese, and the nesting grounds for the largest variety of geese in North America. The site also encompasses part of the Bathurst caribou calving grounds, and a large population of muskox.



Climate change will have major implications for Arctic birds, and in particular the geese and sandpipers that feed almost entirely in the tundra areas of Queen Maud Gulf. A recent World Wildlife Fund report concurred with past studies that the low Arctic tundra will be one of the world’s hardest hit regions.

Increasing interest in mineral development within the MBS acts as another potential threat, demonstrating the need to protect the critical habitat in Queen Maud Gulf by redesignating it as a national wildlife area.

*"Habitat changes in the tundra over the next 100 years are projected to be drastic. This vegetation change has the potential to result in catastrophic species loss, especially if the rate of global warming exceeds the ability of species to migrate."*  
Dr Jay Malcolm

The Mackenzie River Basin is another northern region that is anticipated to be severely impacted by climate change. This 1.8-million km<sup>2</sup> area in northwestern Canada, the largest North American supplier of fresh water to the Arctic Ocean, has already experienced a 1.5 °C rise in temperature over the past 40 years. Ironically, it is North America’s pressure for more oil and gas that is driving corporate interest for development of reserves located within Kendall Island MBS, in the heart of Mackenzie River delta, as well as for construction of the widely debated Mackenzie Valley pipeline to bring these reserves to southern markets.

A five-year study in the Mackenzie River Basin suggests that most of the regional effects of climate warming scenarios are not positive. They include lower minimum water levels in the region's waterways and increased erosion from thawing permafrost, as well as a rise in the number of forest fires and landslides and a reduction in the yields of forests<sup>20</sup>. It is further estimated that caribou in the Bathurst herd, which lives north of Great Slave Lake, will probably lose weight, in part because of the heavier snow cover, and in part because of an increase in the number of insects harassing the herd - a result of warmer summer temperatures.

<sup>19</sup> Malcolm, Liu, Miller, Allnut, Hansen, Habitats at Risk – Global Warming and Species Loss in Globally Significant Terrestrial Ecosystems, WWF 2002

<sup>20</sup> Stewart J. Cohen, *Mackenzie Basin Impact Study Final Report*

The boreal forest is also believed to be a particularly vulnerable ecosystem. Models suggest a lowering in water tables and reduction in wetlands, which would potentially have serious consequences for shorebirds and waterfowl populations. The predicted increase in forest fires and resulting transition to a landscape of younger forests is of particular concern to old-growth dependent wildlife.

Off-site threats such as those listed above are difficult to combat, as CWS cannot generally legally control them through permitting. However, with greater capacity from increased budgets and enhanced partnerships, CWS could better monitor potential off-site threats, and work to mitigate them through consultations, educational efforts, the development of landscape management plans, and the expansion of protected area boundaries.

### 3.2 On-site Threats

Some of the on-site activities currently threatening IBAs within the NWA-MBS network include poaching, boater traffic, disturbance by visitors, and encroachment of adjacent activities. As described below, most of these threats are enforcement and management issues. They could be effectively addressed by increased enforcement or enhanced management of site regulations.

#### Poaching

Poaching is known to occur at a number of MBSs and NWAs. It is a significant threat in a number of the remote Quebec sites, where public education and enforcement opportunities are limited. This threat could be removed by increased on-site enforcement. For example, since 1984 increased surveillance from park wardens at Betchouane MBS (IBA QC074) has effectively curbed poaching.

*Illegal eider hunting has been identified by CWS as a highly important stressor at Brador Bay MBS (IBA QC 063) and Saint Augustin MBS (IBA QC064).*

#### Boat Traffic

NWA Regulations include an outright ban of conveyances (i.e., vehicles of any nature used to convey goods or people), allowing them only through special signage or permitting. Hence, problems with boat traffic in NWAs are strictly problems of enforcement and an inability to regulate due to incomplete ownership. MBS Regulations do not automatically ban conveyances at all MBS sites but site-specific regulations disallowing conveyances are authorized. For example, MBS Regulations disallow conveyances in Vaseux Lake MBS (IBA BC017). Boater traffic has been identified as a problem at Long Point NWA (IBA ON001), Ile de l'Estuaire NWA (IBA QC048-051), Terra Nova MBS, and Ile aux Herons MBS (IBA QC128).

#### Visitor Disturbance

Most NWAs and MBSs have a low public profile and suffer less from visitor disturbance than do more publicized protected areas like national or provincial parks. However, several IBAs in the NWA-MBS network list visitors as a major threat, and their regulation is essential to site conservation. A recent CWS inspection of Sand Pond NWA, NS identified that an all-terrain-vehicle rally was held through the middle of the site, including the construction of bridges and trails.



**Impacts from ATVs at Sand Pond NWA**

Both NWA and MBS Regulations authorize prohibition of entry to sites, or parts of sites, without a permit. Some MBSs, such as Boatswain Bay (IBA NU097) and Cap Saint Ignace (IBA QC102), have been regulated for “no activities.” Most NWAs and MBSs, however, do allow visitors but lack on-site staff or infrastructure to adequately regulate their activities. A very few sites have a seasonal resident staff member, as at Machias Seal Island MBS (IBA NB019), who monitors visitation and ecological integrity. Several NWAs (e.g. Last Mountain Lake, Cap Tourmente, Cape Jourmain) have active public areas and interpretation facilities, run in cooperation with local community support and “Friends of” organizations.

### ***Case Study 3 - Boater Disturbance of Waterbird Nesting Colonies in Canada's Great Lakes***

Public disturbance of nesting waterbird colonies is one of the most serious threats at Southwestern Ontario's NWAs and MBSs, where outdoor recreational activities are on the rise in Canada's most populated region.

Small island sites in Canada's Great Lakes and other lakes in SW Ontario provide essential habitat for a variety of fish-eating waterbirds, such as egrets, herons, and terns, that nest there in colonies. Chantry Island MBS (IBA ON154), Eleanor Island NWA, and Mohawk Island NWA are all home to colonial wading birds. They also share a similar and increasing threat – disturbance from recreational boating activities.

Motorboats, jet skis, adventure tourism, and a variety of other water-based recreational activities are all a mainstay of cottage life in Ontario's lake country. These activities can have devastating effects on birds nesting on the small island NWAs and MBSs. The number of fledglings raised in these bird colonies can be significantly lower with frequent disturbance. Disturbance of adult birds causes them to leave their eggs or fledglings unattended and vulnerable to a variety of predators. Young birds require almost continuous feeding and may become weakened and die if the adults are otherwise occupied.

At the select lucky sites where CWS has staff available to enforce disturbance laws and promote education to the boating community, such as St. Clair NWA (IBA ON012) and Long Point NWA (IBA ON001), visitor disturbance is being managed. However with current resources, most island sites are only visited by CWS staff a couple of times per year.

Chantry Island MBS, off the eastern shore of Lake Huron, is an excellent example of how active community-based partnerships can help effectively minimize visitor disturbance of nest colonies. Five years ago, a local community organization began conducting organized nature visits to the island. CWS worked closely with the community to ensure proper protocols were used to avoid disturbance. This initiative has helped to promote community tourism, while minimizing the random uncontrolled visits to the island by a wide range of boaters. Perhaps most importantly, this initiative helped to educate cottagers of the importance of the island for herons and egrets, and to recognize that precautionary measures must be taken in its vicinity.

A mixture of community-based education, targeted discussions with tourism operators, local partnerships, and effective enforcement could effectively address this important threat at similar NWAs and MBSs within the Great Lakes and more broadly across Canada. With adequate resources, visitor disturbance could be effectively managed at these critical wildlife areas. Unfortunately, today it remains a serious problem across much of Environment Canada's protected areas network.

## Encroachment

Where IBA site boundaries are in only partial correspondence with NWA/MBS boundaries, threatening activities can occur on the IBA site while not occurring within NWA/MBS boundaries. Expansion of the NWA/MBS boundaries to encompass the full IBA would effectively address these on-site threats by resultant regulation. For example, expanding Spiers Lake NWA (IBA AB026) would help control cattle grazing which currently threaten wildlife values at the site.

## Exotics

The spread of exotic species has become an issue of international importance, as recognized in the Convention on Biological Diversity. A variety of invasive species are present across North America, crowding out native species, threatening natural habitat, and in some cases causing significant economic impact. Some invasive species have spread to the extent that they have begun to threaten the existence of endangered native species. A review of literature on the presence of invasive plant species at NWAs and MBSs identified 12 exotic species of the 14 that were reviewed<sup>21</sup>.

**Occurrence of Invasive Plants in NWAs and MBSs<sup>22</sup>**

Species	Frequency	Comments
Purple loosestrife	19	mainly in Eastern Canada
Reed canary grass	17	widespread
Canada thistle	15	widespread
Smooth brome grass	12	widespread
Sweet-clovers	9	widespread
Eurasian watermilfoil	7	mainly in S Ontario, upper St. Lawrence R, and at Vaseux Lake MBS
European frog-bit	4	S Ontario and upper St Lawrence R
Flowering rush	4	S Ontario and upper St Lawrence R
Common buckthorn	3	S Ontario
Glossy buckthorn	1	S Ontario
Tartarian honeysuckle	2	Lac St Francois NWA
Leafy spurge	1	Long Point NWA

Purple loosestrife was the most reported of all invasive plants. This conspicuous wetland invader was identified almost exclusively in Eastern Canada. Smooth brome grass (*Bromus inermis*) is a serious problem throughout the prairie grasslands, being one of the most widely planted forage grasses in Western Canada<sup>23</sup>. Hay fields seeded to Smooth brome grass and alfalfa in the 1960s served to introduce this species to Last Mountain Lake NWA (IBA SK001). Its resulting proliferation in native grasslands has resulted in the decline of bird biodiversity.

<sup>21</sup> Source: *Species at risk and invasive plants of NWAs and MBSs*. Haber. 1995.

<sup>22</sup> *Ibid*

<sup>23</sup> Invasion of the Canadian prairies by an exotic perennial, Romo, J.T. & P.L. Grilz, 1990

#### ***Case Study 4 - Exotic Species in Canada's Most Threatened Landscapes***

Exotic species are having a profound impact on the ecology of Canada's natural areas, and in particular our freshwater ecosystems. Nowhere is there more evident than in the Great Lakes and St. Lawrence Basin, where 160 invasive plants and animals have been established and are bringing about irreversible damage. The impact of zebra mussels alone is estimated at over \$3 billion<sup>24</sup>.

A recent study found invasive plant species to be present in over half of Canada's national wildlife areas<sup>25</sup>. All twelve exotic plant species studied were identified in the wetlands of NWAs and MBSs in the Great Lakes – St. Lawrence corridor.

Lake St. Clair NWA exemplifies the threats and challenges that these alien species pose to our aquatic environments. The marshes of Lake St. Clair, nestled between Lake Huron and Erie, are one of Ontario's most significant waterfowl staging areas. The adjacent agricultural lands provide habitat for the largest Canadian concentration of the endangered king rail, several other threatened bird species, and significant populations of black-bellied and American golden plovers. A variety of invasive species are having direct impacts at the NWA and more broadly in the aquatic environment of Lake St. Clair:

- 9 invasive plant species have been identified within the NWA, including purple loosestrife, Eurasian watermilfoil and European frogbit, which form dense stands that choke out native wetland species important to fish and wildlife. Repeated efforts to control purple loosestrife through the introduction of the predatory *Galerucella* beetle have proven unsuccessful.
- Large populations of carp have destroyed beds of native vegetation such as wild celery and wild rice, the preferred foods of canvasback and redhead ducks, and their spawning activities stir up sediment thereby destroying the nests and eggs of marsh-nesting terns.
- The aggressive round goby has taken over the spawning sites of several native fish species
- Zebra mussels are having dramatic impacts on fish and wildlife. This incredible filter feeder has increased water clarity to an extent that rooted vegetation and bottom-dwelling algae have replaced the billions of single-celled organisms suspended in the lake. The concentrated PCBs in zebra mussels are accumulating the fatty tissues of the waterfowl that feed on them.
- The large, aggressive mute swan has established populations in many Great Lake marshes, overgrazing areas thereby causing a functional reduction in aquatic habitat.

While an estimated \$500 million spent to control invasive species in the Great Lakes, a recent report by the Auditor General of Canada on the state of the Great Lakes basin concluded “*federal efforts so far have not been coordinated and have not been adequate to manage the threat of invasive species*” and that “*the government does little to prevent the arrival of invasive species. Keeping them from entering the basin could save millions of dollars in control costs beyond the costs of damage they cause to the ecosystem*”.<sup>26</sup>

---

<sup>24</sup> 2001 Report of the Commissioner of the Environment and Sustainable Development, Chapter 1 – Great Lakes and St. Lawrence Basin

<sup>25</sup> Erich Haber, *Species at Risk and Invasive Plants of National Wildlife Areas and Migratory Bird Sanctuaries*, March 1995

<sup>26</sup> 2001 Report of the Commissioner of the Environment and Sustainable Development, Chapter 1 – Great Lakes and St. Lawrence Basin

CWS could effectively address these on-site threats to NWAs on a site-by-site-basis through effective management plans, increased enforcement of existing regulations, improved regulation of visitors or their activities, and/or enhanced education and community relations, as appropriate at each site. These management activities would also be beneficial at MBSs, however the most important measure that could be taken to address these threats at Sanctuaries would be to redesignate them as NWAs.

## 4.0 THE MARINE CONTEXT

Marine and coastal biomes are not adequately represented in the protected areas systems of Canada or the world. Barely 1% of the world's seas are protected, compared to nearly 9% of land surface.<sup>27</sup> The main threats to marine ecosystems around the globe are physical alteration of critical habitat, excessive harvest of resources, pollution, exotic species, and global climate change. The major threats to the health and biodiversity of the marine environment, including 80% of marine pollution, originate from human activities on land.<sup>28</sup>

Each of the off-site activities listed in Section 3 threatens marine and aquatic ecosystems. This bias towards water reflects not so much the nature of threats to Canada's natural habitats, but the nature of the NWA-MBS network. Historically, the majority of NWAs and MBSs were designated to protect habitats for waterfowl—wetlands, lakes, rivers, and coastal or marine areas.

### ***4.1 Protected Marine Habitats in the NWA-MBS-MWA Network***

Canada's seascape is about 60% as large as our landscape, containing 5,543,913 km<sup>2</sup> of waters<sup>29</sup> compared with 9,215,430 km<sup>2</sup> of land. Environment Canada could potentially designate NWAs or MBSs on a majority of this marine area. As offshore marine habitats in the Arctic Basin Ecozone are under more-or-less permanent ice cover, and the Hudson Bay is encompassed by territorial sea, approximately 57% of Canada's seascapes fall within the defined limits of our territorial sea. Waters within this limit can be protected by NWA or MBS designation.

A 1996 CWS report, *Towards an Environment Canada Strategy for Coastal and Marine Protected Areas*, noted that, although Environment Canada's marine program has been slow to develop, the department administers 85% of the total 3.4 million ha of marine protected areas in Canada. MBSs are comprised of 2.7 million ha of marine habitat, and NWAs contain another 172,000 ha. Over 95% of CWS's protected marine habitats fall within the Arctic Archipelago Marine Ecozone.

As of 1994, Environment Canada can designate marine wildlife areas (MWAs) beyond the territorial sea to the 200-mile limit. Regulations have not yet been developed for such areas, nor have any sites been so designated. The authority to designate MWAs has not yet been supported by a site acquisition budget or any increase in staff resources. Nor has Environment Canada yet acted to amend or clarify a legislative ambiguity regarding the MWA designation. The 1994 amendment to the *Canada Wildlife Act* authorized Environment Canada to designate protected areas from 12-200 miles offshore, but regulations have not yet been developed to allow Environment Canada to "administer and control" its designated sites beyond the territorial sea.

How Environment Canada's MWAs will be regulated is at present unknown. A 1999 CWS discussion paper notes that CWS marine protected areas (MPAs) might include foraging areas for marine birds and seamounts, and that "the minimum standards for all MPAs include the prohibition of ocean dumping, dredging and exploration for, or development of, non-renewable

---

<sup>27</sup> Source: "About Protected Areas" on the IUCN web site.

<sup>28</sup> Source: Page 1, *Canada's National Programme of Action for the Protection of the Marine Environment from Land-Based Activities (NPA): 2000*.

<sup>29</sup> Inclusive of marine waters out to the 200 nautical mile limit

resources.”<sup>30</sup> The discussion paper suggests site-by-site development of regulations with flexible application such that different zones of habitat sensitivity could have different regulations for their protection. The paper notes that CWS might develop agreements with other departments to administer their regulations in support of CWS management goals. For example, Transport Canada could proscribe shipping activities in MWAs, while DFO could proscribe fishing activities on site.

As yet, it is uncertain if CWS will pursue its own network of MWAs. Thus far, only CWS Pacific and Yukon Region has made significant progress on the development of new marine protected areas, working in cooperation with other government bodies. For example, Scott Islands (IBA BC006) is in the first level of assessment of MPA boundary definition. CWS Pacific and Yukon Region worked with provincial and federal fisheries departments on an Areas of Interest database for marine sites in the region.<sup>31</sup> An August



**Scott Islands. BC**

1998 draft *MPA Strategy for Canada's Pacific Coast* was a joint initiative of three federal departments and two provincial agencies working on a coordinated approach to identify, assess and designate MPAs on the Pacific Coast. This initiative has a target of 2010 for completion of an extensive system of MPAs based on a shared federal/provincial approach and shared decision-making with First Nations and stakeholders. An NWA has also been proposed as a bowhead whale sanctuary in Davis Strait, NU (Igaliqtuuq).

#### ***4.2 National Cooperation on a Marine Protected Areas Network***

There are three federal bodies that can establish a marine protected area (MPA) in Canada.

- The Department of Fisheries and Oceans (DFO) is the lead federal agency for oceans management, including protected areas. DFO can designate MPAs to protect specific marine mammal habitat, fishing areas or areas whose biodiversity is threatened.
- The Parks Canada Agency is pursuing the establishment of a network of Marine Conservation Areas (MCAs) to protect representative sites in Canada's 29 marine ecoregions.
- The Canadian Wildlife Service of Environment Canada can maintain and expand the NWA-MBS-MWA network of sites, with a focus on the protection of marine migratory birds and species at risk

DFO has identified nine pilot MPAs or Areas of Interest, including Bowie Seamount (IBA BC163). DFO may establish MPAs to conserve a number of environmental values including fishery resources, marine mammals or species at risk and their habitats, unique habitats, or areas of high biodiversity. No automatic regulations apply to DFO-designated MPAs. Rather, regulations will be developed on a site-specific basis. Enforcement has a low emphasis for DFO, which advocates voluntary compliance to its guidelines.

---

<sup>30</sup> Page 23, *Marine Protected Areas: Opportunities and Options for the Canadian Wildlife Service, CWS: 1999.*

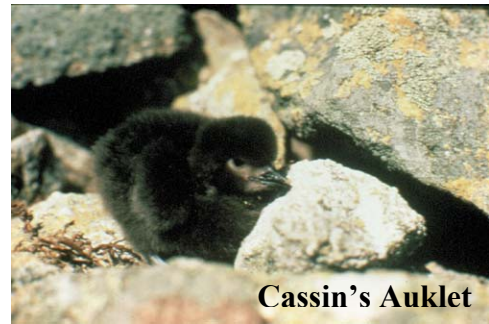
<sup>31</sup> Several of the Pacific IBA sites were taken from this database.

### ***Case Study 5 – Protecting One of Canada’s Most Important Seabird Breeding Colonies***

Off the northern tip of Vancouver Island lies one of the richest and most diverse marine ecosystems in Pacific Canada – the Scott Islands region. In this remote and rugged ocean wilderness, cold water from depths exceeding 2000 metres rises to the surface, forming an intricate food web that attracts an array of seabirds, marine mammals, fish, and fishermen.

CWS recently commenced a process for establishing the Scott Islands region as Canada’s first marine wildlife area. This presents an immediate opportunity and significant challenge: ensuring the federal and provincial governments, First Nations, local communities and resource interests work together to designate the Scott Islands MWA in a manner that respects the region’s ecological integrity.

The Scott Islands are the most important seabird breeding colonies in British Columbia. Seabirds occur here in globally significant numbers, with 55% of the world’s population of Cassin’s auklet, 7% of the world’s rhinoceros auklets, and 2% of tufted puffin. In addition, the three sea lion rookeries in the area are by far the most important along the coast.



**Cassin’s Auklet**

The Scott Islands region is used for fisheries, transportation, wildlife research and, to a limited extent, tourism. Although the islands are protected by the province, the ocean area critical to the conservation of many species is not. Recent studies by CWS and Simon Fraser University show that many seabird species forage in flocks up to 100 km offshore. The productive marine environment surrounding the islands provides a critical foraging area for the seabirds, which feed on plankton or fish in the surrounding ocean wilderness.

Bycatch of seabirds in fishing gear is a serious threat to local seabird populations. Spills from log booms, transport and cruise ships, and oil tankers that move through the area would be devastating to seabirds. A variety of petroleum companies hold rights to exploration leases in the region and although a moratorium on offshore exploration was declared in 1971, leases continue to be renewed. A provincial process is now underway to determine the possibility of opening up the coast to offshore petroleum development.

A marine wildlife area is a highly flexible regulatory tool for marine conservation, allowing for multiple uses to occur within its identified boundaries. It is important that the Scott Islands MWA not allow resource use activities that could jeopardize the long-term conservation of its natural values, but not unduly limit activities that could otherwise be undertaken in a sustainable manner

The Canadian Nature Federation and the BC chapter of the Canadian Parks and Wilderness Society have been working together to ensure an ecosystem-based approach to protecting the long-term health of this ocean wilderness through an enhanced marine protected area.

While very little of Canada's marine habitat currently receives regulatory protection, CWS, Fisheries and Oceans and Parks Canada are developing a marine protected areas strategy for Canada. The successful negotiation of Scott Islands as an MWA will lay important groundwork for further federal – BC government progress in marine conservation.

Worldwide, MPAs have helped conserve biodiversity, facilitate important research and enhance fisheries – almost all of the scientific studies published so far show increases in fish abundance, density and size within marine “reserves” relative to fishing grounds. In marine reserves in St. Lucia and Florida for example, biomass of five commercially important fish families tripled in three years.

The World Commission on Protected Areas' *Guidelines for Marine Protected Areas* warns of conflicts of interest when a department responsible for fisheries is also responsible for protected areas. As DFO is mandated to take the lead in oceans conservation, it is critical that Environment Canada and Parks Canada have the staff and resources to actively ensure that conflicts of interest do not compromise the development of Canada's marine protected areas network. For conservation of important bird habitat, in particular, it is critical that CWS play an active role in site selection and management.

#### **4.3 Future Strategy for CWS**

CWS requires a marine conservation strategy that contributes to Canada's overall MPA strategy. CWS has valuable expertise in the management of protected marine areas. Unfortunately, there is as yet no clear sense of CWS's national marine priorities, and no national framework to guide the regions that are already working with DFO on the identification and development of MPAs.<sup>32</sup> The role of MWAs is especially unclear. Though the MWA designation authority may be used, a majority of priority marine habitats within the 12 miles limit might be protected under NWA or MBS designation. NWA designation may in fact provide a stronger form of marine habitat protection.

Preliminary work has been done towards the designation of the Scott Islands off the Northwest coast of Vancouver Island as a MWA. However, CWS requires the resources to prepare a compendium of marine sites that provide critical habitat for wildlife, especially migratory birds. Sites could then be prioritized and the best designation pursued for each. Some sites may benefit most by NWA or MWA designation. In other cases, a site might be incorporated into a Parks Canada or DFO protected area, on which CWS could advise measures to conserve or enhance bird populations and other conservation values falling within CWS's sphere of expertise.

Environment Canada is a key player in a developing strategy to conserve Canada's oceans. As such, the department should develop national policies for marine protected areas. MWAs in particular cannot be designated without a clear idea of how they will be regulated.

If CWS is to play a significant role in conserving Canada's seascapes, it must have some capacity to do so. Currently, CWS has few staff and limited marine expertise, no acquisition budget, and insufficient capacity to monitor and enforce regulations on existing sites in the NWA-MBS-MWA network, let alone to effectively manage an expanded network.

---

<sup>32</sup> *Ibid.*

## 5. CHALLENGES TO CONSERVATION IN THE NWA-MBS NETWORK

The potential for effective conservation of IBAs in the NWA-MBS network is good. But the network is currently not living up to its promise. The state of ecological integrity in existing sites is an issue of concern. The following is an overview of the key challenges facing the NWA-MBS network today, with suggestions for dealing with them.

### 5.1 *Unmet Legal and Policy Obligations*

The Government of Canada is committed to maintain and/or enhance environmental values under various policies including A Wildlife Policy for Canada, the World Conservation Strategy, the 1992 Statement of Commitment from Parks, Wildlife and Environment Ministers, the Migratory Birds Convention, the Ramsar Convention, the Canadian Biodiversity Strategy, the proposed Species at Risk Act, and the North American Bird Conservation Initiative. As well, some existing NWA management plans specify Environment Canada obligations to landowners, non-government organizations, and other governments. The NWA-MBS-MWA network should be contributing fully to meeting these obligations. These commitments are not being fulfilled.

A reinvestment in the NWA-MBS-MWA network, and the development of national standards for network management, should incorporate existing legal and policy obligations and consider the network's potential to contribute to federal government environmental commitments.

**Canadian Biodiversity Strategy** – *the completion of “networks of protected areas representative of land-based natural regions and to accelerate protection of areas that are representative of marine natural regions”*

**Migratory Birds Convention** – *“The Governments of Canada and the USA... [are] committed to the long-term conservation of shared species of migratory birds... through a more comprehensive international framework that involves working together to cooperatively manage their populations, regulate their take, protect the lands and waters on which they depend, and share research and survey information.”*

**Accord for the Protection of Species at Risk** – *“We agree to... establish complementary legislation and programs that provide for effective protection of species at risk throughout Canada”*

**North American Bird Conservation Initiative** – *“Recognizing that at least 20 percent of the world’s bird species inhabit North America... acknowledging that some bird populations are in decline... we hereby approve the NABCI strategy... for the conservation of all birds of North America”*

### 5.2 *Legislative and Policy Obstacles to Site Acquisition and Management*

Each component of the NWA-MBS network suffers from legislative limitations that might be amended or sidestepped for more effective network management. In MBSs, habitat protection is hindered by the ambiguity of Section 10 of the MBS Regulations, and more particularly CWS' reluctance to effectively interpret and apply the regulations. More frequent use of site-specific regulations could better address on-site threats at these sites. Where an MBS holds significant wildlife habitat, redesignation of the site as a NWA should be pursued. As it now stands, the benefit of the MBS designation currently lies in its capacity to provide a basic level of protection for birds that reside in areas that are not owned by government.

## ***Case Study 6 - Lighthouses and Birds: Threats to a Common Canadian Heritage***

Lighthouses are a reminder of our long maritime traditions, having adorned Atlantic Canada's coastal islands, bays and peninsulas for 300 years. Many of these sites also serve as important habitat for a variety of nesting and staging bird species. Changing navigational technologies have however largely rendered these lighthouses obsolete. Now, as the federal government ponders the disposal of these sites, their ecological integrity and cultural heritage is at risk.

The Department of Fisheries and Oceans manages 2,000 individual lands across Atlantic Canada, including several hundred lighthouses. A number of these sites are known to host significant concentrations of seabirds, waterfowl, and species at risk. So when DFO announced plans to dispose of a large number of these properties, the last thing that the Canadian Wildlife Service wanted to see was ecologically sensitive lands turned into seaside resort developments.

An assessment by the CWS, provincial governments, Ducks Unlimited Canada and the Nature Conservancy of Canada identified about 20 priority sites of interest to CWS and over 160 additional sites which were of conservation interest to the other agencies. The opportunity is significant: the long-term conservation of some of the coast's most essential wildlife habitat. But ironically, it's the government's own guidelines that are proving the biggest challenge to protecting these areas from future development.

The Department of Fisheries and Oceans is interested in divesting of these properties and CWS is interested in acquiring them. To be clear, we are talking about the transfer of lands from one government department to another. But federal guidelines require that these lands be purchased at fair market value. As seaside properties are a hot commodity, the cost of these lands is much too rich for CWS' lowly budget.

The CWS similarly does not have the resources to cover property taxes. They have requested that the grants-in-lieu currently paid to provinces for these properties be continued rather than transferring these expenses to them. To date there has been no decision.

Another significant cost involves the exorbitant charges incurred when using Public Works Canada as the authority for land acquisition. The recent purchase of an 80 acres tamarack swamp as an addition to Sand Pond NWA cost \$6,500. Public Works charged an additional \$16,500 for their services, two and a half times the purchase price.

The costs involved in lighthouse upkeep are perhaps one of the most significant. However partnerships with local community interests, such as "friends of" organizations and ecotourism operators help offset costs, promote community development, and ensure the ecological integrity.

The CWS is left with both an incredible opportunity and daunting challenge. They have the opportunity to expand their network of NWAs to include over a dozen new sites of vital habitat for Canada's birds and species at risk. But to do so, they must fight the numerous obstacles put into place by their own internal government bureaucracy. Should they lose the fight, Canadians risk losing an important foundation of Canada's ecological and cultural heritage.

### ***Some of the maritime's lighthouse spots...***

- Country Island supports approximately one third of Canada's endangered roseate tern population
- Machias Seal Island is considered the most important seabird colony in the Bay of Fundy, with the largest Arctic Tern colony in North America, the largest breeding population of razorbills south of Nfld, and significant populations of puffin and common tern
- Off the northern tip of Nova Scotia, the windswept coniferous forest on St. Paul's Island is home to the elusive Bicknell's thrush, a species of special concern

A legislative limitation for NWAs is the need for Environment Canada to hold title or exercise effective control to the site, which greatly slows the process of site designation. The proposed *Species at Risk Act* offers an avenue to overcome this challenge, particularly on lands held by other federal government departments. The lack of ownership over NWA and MBS sub-surface rights present a very real threat to their ecological integrity, and an inability for CWS to proactively control this threat. For MWAs, Environment Canada should actively pursue amendment of the *Canada Wildlife Act* to give the department some authority to administer and control the MWAs it designates.

In addition to these legislative limitations, there are further federal stumbling blocks to effective site acquisition and management. Treasury Board guidelines and property taxes impede site acquisition. Exorbitant government fees discourage coordinated land management. Infilling and trading of lands between government departments is rare and costly. Conservation easements are often poorly maintained. To address these challenges, CWS should initiate a review of such internal obstacles and work with other federal departments to eliminate them.

### **5.3 *Lack of Standards and Accountability***

There is a marked absence of national standards for site selection, management or enforcement of regulations in the NWA-MBS network. This challenge might be met by the development of an Environment Canada protected areas network vision, with a framework of priorities and standards to guide the regions in carrying out the network's mandate.

Once standards are developed, some accountability mechanism should be put in place to ensure that they are met and network development is monitored. Unlike national parks, there is currently no requirement to track the state of the NWA-MBS network. This makes it difficult to use all potential opportunities for conserving sites with regulations, other legislation, stewardship programs and partnerships. A regular reporting mechanism might help meet this challenge.

### **5.4 *Limited Network Coverage***

The NWA-MBS-MWA network is almost static, although numerous priority sites have been recognized as in need of Environment Canada protection. In 1992, CWS commissioned an *Assessment of Priority Sites for the Establishment of a Network of Conservation Areas by the Canadian Wildlife Service*, which recommended 246 new NWAs and MBSs across Canada, of which 152 sites are IBAs. The *Assessment* also suggested boundary expansions for some NWAs and MBSs, calling for a transfer of provincial lands to CWS.

A significant number of important wildlife habitats could quite readily be designated as NWAs, should the resources be made available to do so. These include, a dozen coastal seabird islands off the coast of NS, NB, and PEI owned by the Canadian Coast Guard, and two sites in the St. Lawrence River. There is further potential to work in concert with aboriginal communities in Nunavut to establish a series of sizeable "eco-cultural wildlife areas" that would respect the rights of these communities and protect the important wildlife values.

*The role of First Nations in the development of CWS protected areas is essential in Canada's North. Negotiation of an Inuit Impact Benefits Agreement with the Inuit in Nunavut provides the opportunity to work in partnership for the effective establishment and management of "eco-cultural wildlife areas"*

### *Case Study 7 - Canada's Military On Guard for Canada's Grasslands*

They are a seemingly unlikely champion of wildlife protection. Canada's military is much better known for peacekeeping than nature conservation. But for decades, the Department of National Defence (DND) has been quietly and diligently working to conserve eastern short-horned lizards, prairie rattlesnakes, burrowing owls, and a whole host of other prairie wildlife. And thanks to their efforts, Canada may soon be in possession of its 50<sup>th</sup> national wildlife area.

Canadian Forces Base Suffield is located in the heart of the Canadian prairies, just West of Medicine Hat, Alberta. DND has taken its role as custodian of this land very seriously, recognizing that they own North America's largest contiguous area of intact prairie grassland. The Departments of Defence and the Environment have worked in partnership over the last 30 years to chronicle and study the diversity of wildlife on the Base and to ensure the long-term conservation of one of Canada's most endangered ecosystems.

The mixed grassland and gently rolling sand hills of Suffield are home to over 180 species of birds characteristic of the Great Plains region. The site has been recognized as an Important Bird Area, owing to the presence of four bird species that are considered nationally at risk of extinction: the burrowing owl (endangered), prairie loggerhead shrike (threatened), long-billed curlew (special concern), and ferruginous hawk (special concern). Numerous sharp-tailed grouse dancing grounds can be found here as well as high concentrations of golden eagle nesting sites.

The lifeblood of the proposed NWA is the South Saskatchewan River, which snakes its way through 55 km of the reserve. The river valley contains the highest level of biodiversity within Suffield, acting as a major wintering area for mule deer and pronghorn, and home to the oldest grove of cottonwoods in Alberta. So when the Alberta and Saskatchewan governments teamed up a year ago to assess the feasibility of building a \$1.5 billion dam upstream on the South Saskatchewan River, the Base Commander was one of the most vocal opponents of the dam project. The proposed Meridian Dam would have flooded over 150 km of the river, including significant lands within Suffield. Owing in part to opposition by many interests throughout Alberta, the dam project was thankfully abandoned.

"We're the last sizeable vestige of natural prairie in Western Canada. To lose it all to a dam goes against the way we've been operating. The Base would be opposed to anything that would impact on that habitat and those plant and animal species."

**Lt.-Col. Chuck Watson, Base Commander**

Perhaps the most exciting element of Suffield NWA is its importance for species at risk. Historically, NWAs have been designated to protect important migratory bird habitat. Suffield will hopefully provide a model for Environment Canada to move beyond birds to other important wildlife habitats. This proposed NWA is home to 78 species that are provincially or nationally at risk.

Recognizing the need to ensure the long-term preservation of this prairie habitat, DND and Environment Canada have teamed up to set aside 458 km<sup>2</sup>, over one-fifth of the Base, as a national wildlife area. The upcoming designation of the site as an NWA will ensure that these lands remain in natural condition in perpetuity.

Partnerships, such as the one developed between DND and EC at Suffield, are one of the essential tools to the effective ongoing management of Canada's NWAs. Let us hope that we will soon be raising a toast to Suffield being declared Canada's 50<sup>th</sup> national wildlife area.

The primary focus of NWA establishment to date has been on protecting habitat for migratory birds. However, sections 2 and 3 of the NWA selection criteria enable the designation of NWAs based on the presence of species-at-risk, representation of quality and unique flora and fauna, or the presence of rare or unusual habitat (Refer to Appendix 3). Only recently has Environment Canada sought to expand the NWA network beyond birds. The forthcoming establishment of an NWA at Canadian Forces Base Suffield is a step in the right direction.

Much of the information required to guide expansion of the NWA-MBS-MWA network to better protect key bird and wildlife habitats across Canada is already available to Environment Canada. While further habitat research must be done in some regions, especially marine areas, the most critical need is for resources to finalize national site priorities and negotiate control of high priority sites. To its credit, EC has designated a few critical sites in the past decade despite its lack of a site acquisition budget. With funding, the agency could expand the network's coverage to more effectively protect Canada's highest priority wildlife habitats.

### **5.5 Information Gaps and Ecological Challenges**

The *Assessment*, referred to above, noted a lack of Environment Canada information across entire regions in central and eastern Canada. Information on marine habitats, particularly those extending beyond the territorial sea, lags behind information on terrestrial habitats in Canada. With increased resources—more funding, better EC staff expertise, and enhanced partnerships—EC could complete the national priority habitat record—including marine sites—and finalize prioritization of sites to guide future land acquisitions or site boundary changes.

Information on the status of the existing NWA-MBS network is also lacking. The state of the network's ecological integrity is increasingly an issue of concern, but one that requires increased research and monitoring to adequately address. Lack of on-site inventories makes it difficult to assess and address the ecological challenges to a particular site. Surveys of species at risk are strongly needed at sites where basic knowledge of wildlife communities are poor. Regular monitoring of invasive species is necessary to document their spreading and evaluate control methods. Monitoring of existing and potential off-site threats should also be a priority.

Improved resources at EC and enhanced partnerships with communities, universities, government and non-government agencies to conduct the necessary field research would help fill these information gaps. New tools like the *Canadian IBA On-Line Directory*<sup>33</sup> may be of use in storing and using information.

### **5.6 Insufficient Management Planning**

CWS-Headquarters has recently compiled and consolidated all relevant planning materials for its protected areas network, and has created digital copies of all existing NWA and MBS management plans, and are planning to digitize site maps, and deeds.

Appendix 4 outlines when the most recent management plans have been prepared for each NWA and MBS. EC publicity materials note that a Management Plan is to be developed and updated every 5 years for each NWA, specifying authorized on-site activities. At least 43 of Canada's 49

---

<sup>33</sup> See [www.ibacanada.ca](http://www.ibacanada.ca)

NWAs have a management plan. Unfortunately, most of the plans that exist are outdated because of inadequate funding and lack of basic knowledge of wildlife communities. Older management plans rarely describe specific objectives and strategies to manage a site’s ecological integrity. In general, the more recent the site management plan, the more useful, extensive and linked it is to the broader landscape. In certain instances, for remote areas or where no significant changes have taken place, revisions to management plans are of little urgency. Further, in the current fiscal environment, many regions are deciding that it is impractical to create or update a plan that may be impossible to implement.

The majority of MBSs do not have a management plan, as CWS is not required to create them (except in NU), has no resources to do so, and has not generally felt them necessary. The fact that many of the MBSs are not on federal lands further restricts CWS’s ability to conduct management planning in these areas. There is currently no overall national strategy to prepare management plans for MBSs. CWS publicity materials describe MBS site management as periodic evaluations, monitoring, and public consultation. Site management plans are however required for all migratory

bird sanctuaries in NU, but federal funding for this purpose has not yet been confirmed as part of the Inuit Impact Benefit

Agreement process. There

are in addition a few other sites in the south where management planning and on-site activity is extensive. However, only a minority of MBSs have plans in place.

*“NWAs and MBS’ are important biological resources in the Basin... we are concerned about the way that they are managed... we conclude that the ecological integrity of these areas is at risk and their potential as a conservation tool is unfulfilled. Environment Canada lacks the personnel and resources to manage them well”*

**Auditor General report on the Great Lakes – St Lawrence Basin**

Increased CWS capacity—funding, staff and partnerships—might allow for the development of realistic landscape-oriented management plans to guide conservation of the NWA-MBS network.

### **5.7 Lack of On-Site Staff**

On-site management is extremely inadequate throughout the NWA-MBS network, with many adverse effects. Site conservation decisions are difficult to make without information from regular on-site monitoring. Regulations are difficult to enforce without officers on site. Active site conservation, e.g., habitat enhancement and improvement of deteriorated capital assets, is left undone because of a lack of human resources in the current fiscal crisis.

*Environment Canada’s Atlantic Region was allocated the staff time of 1.75 people and a budget of \$45,000 to manage, regulate, educate, and ensure conservation at 10 NWAs and 14 MBSs in 2000/01.*

Most CWS capacity to engage in public education was slashed in 1985 through a program review. Today, only a few sites in the NWA-MBS network provide educational opportunities or special facilities to view wildlife. These include Alaksen NWA (IBA BC019), Cap Tourmente NWA (IBA QC002), St. Clair NWA (IBA ON012), Shepody NWA (IBA NB009), Chignecto NWA (IBA NS002), Cape Jourmain NWA, Last Mountain Lake NWA (IBA SK001), and Long Point NWA (IBA ON001). Here there are exhibits, trails, brochures, and viewing stands to guide visitors through their surroundings. Most NWAs and almost all MBSs, however, are unstaffed and have no visitor services. Increased resources at CWS and partnerships with other

agencies could address this deficiency and better meet the network's educational potential.

Better regulation of visitors would reduce the disturbance to wildlife reported at several sites. Where appropriate, CWS could prohibit visitors during critical periods, such as nesting and moulting, or restrict access to sensitive areas. This is already done at several sites. For example, tour boat operators who ferry birdwatchers to Machias Seal Island MBS (IBA NB019) are restricted by regulations that limit the number of visitors allowed on the island each day. Where visitor disturbance is a problem, activities should be better regulated via on-site education, enforcement, and protective infrastructure.

EC has always relied on partnerships in conducting on-site education, research, monitoring and conservation. Local conservation partnerships are in place at several sites including Baie de l'Isle-Verte (IBA QC042), Lac St. Pierre (IBA QC112), Cap Tourmente (IBA QC002), and Lac Saint-Francois (IBA QC137). National partners are also critical. The latter site benefited from a CNF Community Action Fund grant in 2000/01 that helped fund construction of an observation platform. This is helping to educate visitors while minimizing their disturbance in sensitive areas. Projects undertaken in collaboration with Ducks Unlimited Canada and/or the North American Waterfowl Management Plan have enhanced habitat at two dozen NWAs and several MBSs, about half of which are IBAs<sup>34</sup>.

Unfortunately, EC notes a decline in volunteers across the country. There is no national equivalent to the United States' Watchable Wildlife Program to attract public interest and support for Canada's NWAs. NGO partnerships in the US serve to promote awareness and environmental education, a vital function that is not similarly being served at NWAs. Whereas there are "Friends of" organizations at 40% of the 538 U.S. refuges, there are only a couple present within the Canadian NWA system. This challenge might be partially met by improved public relations and the development of new partnerships with non-government agencies.

### **5.8 Social Challenges**

The decline in volunteers noted above is one of several social challenges to more effective management of the NWA-MBS network. Others include the loss of non-government research links and partnerships, an increase in eco-tourism pressures, a decline in public knowledge of these areas. These challenges might be met if a reinvestment in the NWA-MBS network is accompanied by a publicity campaign aimed at developing partnerships in protecting the network. Site conservation demands that publicity focus on the benefits of protecting these critical habitats rather than simply encouraging more visitors.



**Bird banding at McConnell River MBS, NWT**

---

<sup>34</sup> Spreadsheet from CNF files, printed in August 2000; no further information.

### *Case Study 8 – Cap Tourmente: Blending Nature, Heritage & Education*

Cap Tourmente is regarded by many as the crown jewel of Canada's national wildlife area network. Québec's first NWA, the federal government acquired the property in 1969 when the Right Honourable Jean Chrétien, acting in his power as Minister of Indian and Northern Affairs, proudly signed off on the purchase of these lands along the North Shore of the St. Lawrence River. Cap Tourmente also has the notable distinction of being declared Canada's first wetland of international significance under the Ramsar convention.

A strikingly beautiful site where the St. Lawrence Lowlands and the Canadian Shield converge, Cap Tourmente is home to 22 different forest types, more than 700 plant species and close to 300 recorded bird species. The NWA is however best known as a temporary host each year for the Greater Snow Geese; practically their entire population stage in the site's vast bulrush marshes during their spring and fall migration. Cap Tourmente was designated an NWA to ensure the survival of Greater Snow Geese, which has seen its population rise from 3,000 at the turn of the century to over 800,000 today.

Cap Tourmente's cultural values mirror its ecological significance. Snow goose hunting has been practiced in the area for many generations; a tradition which continues to this day through a regulated hunt managed by the Canadian Wildlife Service. Every year, fall brings 1,100 hunters to the NWA through a lottery permitting system.

Traditional hunting methods and dress continue to be used today, and horse-drawn sleds are used to transport the hunters to their respective hunting sites. A regulatory requirement is in place to preserve these important heritage customs.

*The traditional hunt is important not only for cultural reasons, but also in part to control the population of greater snow geese, which has exploded over the last thirty years.*

Cap Tourmente is one of the few national wildlife areas in Canada that provides an important environmental education service to the public. Interpretation activities are offered in all seasons to the more than 55,000 visitors that the NWA receives each year. Visitors are given the opportunity to tour "La Petite Ferme", built by Samuel de Champlain in 1626, hike some of the 18 km of managed trails, or climb up to the 150 meters high observation tower.

At current funding levels, it is near impossible for the Canadian Wildlife Service to manage the ecological integrity of Cap Tourmente and serve its important cultural and educational functions. The NWA operates on \$310,000 per year, a healthy budget in comparison to most NWAs across the country. However, most of these resources are allocated to fixed costs, and not enough is left to enable the department to meet its legal obligations, much less for infrastructure, maintenance, and wildlife research. By comparison, the Mingan Archipelago National Park Reserve receives half the number of visitors and operates on a budget of \$2.2 million.

Cap Tourmente NWA could provide significant increased economic opportunities in a region where they are notably lacking. However, with increased awareness of the NWA's existence comes the likelihood of increased visitation. An NWA exists not only to conserve habitat but also to inform and educate the public. With more visitors, the need for effective public education to safeguard the ecological integrity of Cap Tourmente will become even more pressing.

### 5.9 Financial Challenges

EC is in no position at present to address the NWA-MBS network's challenges. The network has seen a drop in staff from 27 to 14.5 full-time employees since 1977, accompanied by a 90% drop in capital resources, and no increase in operational budgets for the 25 year period (see Table 1).<sup>35</sup> Staff, capital and operating budgets for the entire network currently amount to approximately \$1,744,000 a year. This amounts to only about 2% of Canadian Wildlife Service's total budget. These funds are further not applied evenly across the network. A sizeable portion goes to the management of just two southern NWAs, Last Mountain Lake (IBA SK001) and Cap Tourmente (IBA QC002).

**Current financial and human resourcing of NWA-MBS program<sup>36</sup>**

Environment Canada Region	Existing Resources F/Y 2000-2001		
	FTEs <sup>a</sup>	O&M (\$ 000)	Capital (\$ 000)
Pacific & Yukon	1.00	55	15.0
Prairie & Northern	2.50	85	92.0
Ontario	4.00	83	25.0
Quebec	4.75	102	0
Atlantic	1.75	37	7.5
Headquarters	0.50	10	---
<b>1999-2000 (total)</b>	<b>14.5</b>	<b>372</b>	<b>139.5</b>

<sup>a</sup> FTE – Full Time Employees

This funding crisis is not news—in April 1992 a Public Works Canada study of NWAs found that they were under funded and suggested that “maintenance of the assets has been somewhat neglected. Adequate funding is required in order to bring the assets to a condition of good repair.”<sup>37</sup> Unfortunately, the study did not result in new funding for the NWA program, and the situation today is even worse. Put bluntly, the network is operating in survival mode, with declining ecological integrity, lack of resources, poor public profile, and weak links with other current conservation programs.

Addressing these failings calls for a significant increase in ongoing resources dedicated to the NWA-MBS-MWA network, guided by CWS-developed national standards and priorities and supported by local and national conservation partnerships.

It is difficult at this time to estimate the amount of resources required for Environment Canada to credibly manage the existing network of protected areas, and to enable its expansion on a planned and opportunistic basis. A conservative funding scenario is provided below, estimated as a minimum base level of resources.

<sup>35</sup> *Contributing to Ecological Integrity, Op. Cit.*

<sup>36</sup> *Ibid*, based on survey undertaken by CWS Habitat Conservation Division, Ottawa, January, 2001.

<sup>37</sup> Lambert and Sweet, 1992.

**Suggested initial annual resource allocation for EC Protected Areas**

<b>Activity</b>	<b>Amount</b>	<b>Rationale</b>
Capital costs and operations and maintenance of existing NWAs and MBSs	\$25 million (includes 50 full time staff)	Provides for management of an expanded 2.5 million hectares of NWA lands based on similar resource allocation to US National Refuge System
Acquisition and transfer	\$5 million	Enables limited opportunistic expansion of NWA system
Marine program	\$5 million	Enables initial steps towards development of MWA system, however many more resources will be required in long-term
<b>Total</b>	<b>\$35 million per year</b>	

## 6. RECOMMENDATIONS

### I RESOURCE ALLOCATION

**Recommendation #1: That the Government of Canada allocate to Environment Canada a minimum annual budget of \$35 million for staff, operations and maintenance, expansion, and capital costs for the NWA-MBS-MWA network**

Environment Canada has a strong role to play in Canada's protected areas network. However, it is unreasonable to expect the NWA-MBS-MWA network to contribute to existing or new conservation efforts on an annual budget that provides fifteen cents per hectare for existing sites and no funding to acquire new areas. An influx of resources is essential. All other recommendations below are dependent on these resources.

We propose that an initial annual investment be made into Environment Canada's protected areas system of \$35 million a year over five years. This should include \$25 million for capital costs and operation and maintenance of the existing network, \$5 million for new site acquisition, and \$5 million to begin establishment of a marine wildlife area network.

We further suggest that during this time, a more detailed assessment be made of the additional resources needed for this protected areas system, and that they be increased accordingly. This reinvestment would amount to an average management cost of \$3/ha, as compared to Parks Canada's limited \$9/ha budget.

### II VISION AND STRATEGY

**Recommendation #2: That Environment Canada establish a clear vision for their protected areas network**

Management of Canada's protected areas network has been largely conducted on a piece-meal basis over the last twenty years, with no clear sense of priorities or direction. Regional actions to manage these areas need to be directed by a clearly laid-out vision developed by Environment Canada's Headquarters.

### III ENHANCEMENT OF CURRENT NETWORK

**Recommendation #3: That Environment Canada assess the ecological values of sites in the NWA-MBS network**

Maintaining and improving upon the ecological integrity of the network will rely on greater knowledge of its current status. On-site inventory and monitoring of biodiversity, species at risk, and other indicators of ecological integrity are essential to effective conservation management. An assessment would serve to examine shortcomings of some of the areas and to identify means of improving their ecological value. Baseline inventories and an integrated research and monitoring program are needed. Non-government research partnerships are essential to these activities.

**Recommendation #4: That Environment Canada modify the boundaries of existing sites to best conserve their ecological values**

Several existing NWAs and MBSs would benefit from altered boundaries either to accommodate adjacent priority habitats or to provide buffer zones for sensitive areas. NAWMP purchases or other conservation partnerships might help in securing adjacent habitats at a number of sites. To date, some NAWMP acquisitions have been in or near NWAs and MBSs. These land parcels could be transferred to CWS.

**Recommendation #5: That Environment Canada prepare and update management plans for NWA-MBS sites in consultation with key stakeholders**

Effective management planning can optimize the use of scarce resources by addressing potential on-site and off-site threats, and embracing potential site conservation partners. Landscape-oriented management plans should be developed with the financial support to implement them. In particular, EC should continue its cooperative partnerships at MBSs under private or provincial ownership.

**Recommendation #6: That Environment Canada assess off-site threats to the network and implement strategies to minimize them**

With greater capacity and enhanced partnerships, EC could better monitor off-site threats, identify them in site management plans, and work to mitigate them through consultations, educational efforts, multi-stakeholder landscape management plans, or expansion of site boundaries to provide buffer zones for sensitive habitats.

**Recommendation #7:            That Environment Canada increase on-site staff to enforce regulations and undertake conservation and research**

Many of the direct on-site threats to the network could be very effectively managed with the ongoing presence of staff. The need for on-site staff should be determined on a site-by-site basis in management plans. Partnerships with aboriginal, academic, non-government and volunteer communities could assist in some areas of on-site activity, guided by EC-developed standards.

**Recommendation #8:            That Environment Canada launch a public relations campaign aimed at enhancing the profile of the NWA-MBS network**

Enhanced public relations could generate support for an increase in network funding, partnerships, volunteers and EC staff time. Increased outreach to the academic and conservation communities could foster new partnerships to meet many of the challenges to the network. A publicity campaign could raise awareness of the network and generate support for increased public funding, without attempting to increase visitor traffic to sites. Within government, the network's potential to contribute to obligations like the Canadian Biodiversity Strategy and the proposed *Species at Risk Act* should be emphasized accordingly.

**Recommendation #9:            That Environment Canada assess and deliver on a vast array of public education opportunities within suitable NWAs**

The first priority for EC's protected areas should be conservation; public education opportunities should not detract from this objective. Public disturbance has been identified as an on-site threat at some NWAs, and public visitation is an important threat to Canada's National Parks system. Nonetheless, properly controlled, NWAs have the potential to serve a vital environmental education function across the country.

We need only look south of the border to learn the role that education can play at EC's protected areas. A Watchable Wildlife Program, "Friends of" partnerships, an integrated visitation program (map, brochures, signs, etc.), a pictorial book and/or video, passports, are all examples of successful U.S. Refuge public education initiatives that could be mirrored in Canada. NGO and community partnerships should play an essential role in public education delivery.

**Recommendation #10            That Environment Canada establish partnerships with various sectors of society to help fulfill their protected areas functions**

The role of partnerships in the management of Environment Canada's network of protected areas cannot be overstated. Partnerships with aboriginal and local communities, other governments, conservation organizations, academia, and relevant industry sectors are all essential. All of these partners already play an active role at these areas. Ducks Unlimited, the Canadian Nature Federation, Bird Studies Canada, and many other conservation organizations and local naturalist

groups provide critical resources and expertise. Provincial / territorial government and private interests play an active role in management activities at MBSs. “Friends of” organizations at Cap Tourmente, Alaksen and Wye Marsh are involved in public education and research activities.

The above is just sampling of the array of existing partnerships. But they are not enough. Environment Canada will need to develop new and better partnerships with the large number of interests in Canada who know and care about protected areas. EC will need to engage the efforts of conservation organizations that will create needed public awareness about the importance of these areas. EC will need to better make use of the available research capacity of universities across the country. And EC will need to forge partnerships with interests that can help mitigate off-site impacts to NWAs and on-site impacts at MBSs.

#### **IV EXPAND THE NETWORK**

**Recommendation #11: That Environment Canada expand its system of national wildlife areas from 49 to 100 by the year 2006**

There are at least potential 20 new sites identified by Environment Canada that could be transferred and designated as NWAs in the immediate future. There are a further 43 migratory bird sanctuaries that are, in whole or in part, on federal lands. These lands should be redesignated as NWAs on a priority basis, as it would unambiguously protect them from on-site threats to habitat, and would authorize conservation, research and education for species other than migratory birds.

The expansion of Environment Canada’s protected areas system should be conducted based on a clear framework, standards, and priorities for site acquisition.

**Recommendation #12: That Environment Canada develop an action plan for marine wildlife areas, and establish Scott Islands NWA (BC) and Iqalirtuuk NWA (NU) by the end of 2003**

A Marine Protected Areas Framework and strategies should be developed and actively pursued for each of Canada’s three coastlines and for the Great Lakes region (as has been initiated in the Pacific region). These measures should be taken in active partnership with aboriginal communities, Fisheries and Oceans, the Canadian Parks Agency, the necessary provincial and territorial governments, coastal communities, and conservation organizations.

Environment Canada will need to expand its expertise in the field of marine conservation. Partnerships with educational institutions, as has recently been done with Simon Fraser University, can play a critical research function in this area.

With adequate resources and effective direction, Scott Islands in BC and Igaliqtuuq in NU could become important components of Canada’s long awaited Marine Protected Areas network.

**Recommendation #13: That Environment Canada work with other departments to review and eliminate legislative, policy, and fiscal obstacles to site acquisition and management**

Legislative ambiguities such as Environment Canada's authority to administer MWAs, and fiscal barriers such as Treasury Boards guidelines and property tax, should be amended where possible. Once policy obstacles are identified, interdepartmental cooperation should be pursued to eliminate problems, promote appropriate land trades or donations, and ensure the most effective network management.

The proposed *Species at Risk Act's* accompanying amendments to the *Canada Wildlife Act* will eliminate perhaps the most significant barrier to NWA expansion: the requirement for Environment Canada to own the land within the NWA. This will enable NWA designation on *all* lands owned by the federal government. This provision should be actively utilized to designate NWAs on federal lands owned by other government departments (e.g. Suffield NWA)

**Recommendation #14: That Environment Canada increase their emphasis on the establishment of NWAs to include habitat for species-at-risk and significant habitats for rare and unique wildlife**

Environment Canada has in the past narrowly pursued their protected areas mandate by focusing almost exclusively on migratory birds. Future NWAs could provide a vital function in delivering on the federal government's commitment for the protection and recovery for species at risk. NWAs should be established on a priority basis in areas that support critical habitat for species at risk.

## Selected Bibliography

Alexander, Stuart A, Robert S. Ferguson, and Kevin J. McCormick, *Key migratory bird terrestrial habitat sites in the Northwest Territories*. Occasional Paper Number 71, CWS: 1991.

Auditor General of Canada, *Report of the Commissioner of the Environment and Sustainable Development – Great Lakes and the St. Lawrence Basin, Chapter 1 – A Legacy Worth Protecting*. 2001

Beckmann, Leslie, *Seas the Day: Towards a National Marine Conservation Strategy for Canada*. Canadian Nature Federation and Canadian Arctic Resources Committee: 1996.

Biodiversity Working Group, Canadian Biodiversity Strategy: Canada's Response to the Convention on Biological Diversity. Available on the web site of Environment Canada's Environmental Monitoring and Assessment Network:  
[www.cciw.ca/eman-temp/reports/publications/rt\\_biostrat/cbs](http://www.cciw.ca/eman-temp/reports/publications/rt_biostrat/cbs): 2001\*.

Bird Studies Canada and the Canadian Nature Federation, *Important Bird Areas On-Line Directory*, [www.ibacanada.ca](http://www.ibacanada.ca)

Canadian Wildlife Service, "National Wildlife Areas and Migratory Bird Sanctuaries." CWS Hinterland Who's Who brochure, CWS: 1996.

Canadian Wildlife Service, *National Wildlife Areas System Plan*. CWS: 1989.

Canadian Wildlife Service, *Canada's Special Places in the North*. CWS: 1982.

Canadian Wildlife Service, "National Wildlife Areas: Introduction." Environment Canada web site: [www.mb.ec.gc.ca/nature/whp/df00s02.en.html](http://www.mb.ec.gc.ca/nature/whp/df00s02.en.html): 2001\*

Canadian Wildlife Service, "CWS and Marine Protected Areas." Environment Canada web site: [www.cws-scf.ec.gc.ca/habitat/marine/](http://www.cws-scf.ec.gc.ca/habitat/marine/): 2001\*.

Canadian Wildlife Service, "Migratory Bird Sanctuary Selection and Cancellation Criteria." CWS: 1988.

Canadian Wildlife Service, "Criteria for Selecting Candidate National Wildlife Areas." CWS: 1994.

Canadian Wildlife Service Atlantic Region, "Migratory Bird Sanctuary." Habitat Information Sheet No. 2, Environment Canada: 1995.

---

\* Web site dates indicate the time of use in preparing this paper, rather than the time of publication on the noted web site as the latter date is generally unavailable.

Canadian Wildlife Service Atlantic Region, "National Wildlife Area." Habitat Information Sheet No. 1, Environment Canada: 1995.

Canadian Wildlife Service Habitat Conservation Division, *Contributing to Ecological Integrity: Environment Canada's Protected Areas: A Discussion Paper*. DRAFT, Environment Canada: 2001.

Canadian Wildlife Service Marine Protected Areas Working Group, *Marine Protected Areas: Opportunities and Options for the Canadian Wildlife Service: A Discussion Paper*. Environment Canada: 1999.

Canadian Wildlife Service Prairie and Northern Region, *Habitat Conservation Strategy and Plan for the North West Territories 1993-2003*. CWS: 1993.

Canadian Wildlife Service Prairie and Northern Region, *Prince Leopold Island Bird Sanctuary Management Plan*. CWS: 1994.

Canadian Wildlife Service Quebec Region, "National Wildlife Areas." Environment Canada web site: [www.qc.ec.gc.ca/faune/faune/html/nwa.html](http://www.qc.ec.gc.ca/faune/faune/html/nwa.html): 2001\*.

Canadian Wildlife Service Quebec Region, "Migratory Bird Sanctuaries." Environment Canada web site: [www.qc.ec.gc.ca/faune/faune/html/mbs.html](http://www.qc.ec.gc.ca/faune/faune/html/mbs.html): 2001\*.

Cohen, Stewart J., *Mackenzie Basin Impact Study Final Report*

Community of Clyde River, NT, *Iqalirtuuq: A Conservation Proposal for Bowhead Whales at Isabella Bay, Baffin Island, NWT*. 1990.

Cooperative Alliance for Refuge Enhancement, *Restoring America's Wildlife Legacy – A Plan to Rejuvenate our National Wildlife Refuge System*, 1999 Update.

De Forest, Leah, *Important Bird Areas Community Conservation Planning Manual*. Canadian Nature Federation: 2000.

Department of Fisheries and Oceans, *Discussion Paper: Suggested Evaluation Criteria for Establishing Marine Protected Areas*. DFO: 1998.

Department of Fisheries and Oceans, *Marine Protected Areas Program*. DFO: 1998.

Federal/Provincial/Territorial Advisory Committee on Canada's NPA, *Canada's National Programme of Action for the Protection of the Marine Environment from Land-Based Activities (NPA)*. Minister of Public Works and Government Services: 2000.

Gordon, D.C. Jr. and M.J. Dadswell, *Update on the marine environmental consequences of tidal power development in the upper reaches of the Bay of Fundy*. Can. Tech. Rep. Fish. Aquat. Sci. No. 1256: 1984.

Government of Canada, *National Report of Canada for the Seventh Convention of the Ramsar Parties (May 1999)*. Available on the Ramsar web site: [www.ramsar.org/cop7\\_nr\\_Canada.htm](http://www.ramsar.org/cop7_nr_Canada.htm): 2001\*.

Government of Canada and Government of British Columbia, *Marine Protected Areas: A Strategy for Canada's Pacific Coast*. Discussion Paper, DFO: 1998. Available on the DFO web site: [www.pac.dfo-mpo.gc.ca/oceans/mpa/disap.htm](http://www.pac.dfo-mpo.gc.ca/oceans/mpa/disap.htm): 2001\*.

Government of Canada, *Working Together for marine protected areas: A National Approach*. DFO: 1998.

Haber, Erich, *Species at risk and invasive plants of National Wildlife Areas and Migratory Bird Sanctuaries*, Unpublished report prepared for the Canadian Wildlife Service, 1995.

Kelleher, Graeme (ed.), *Guidelines for Marine Protected Areas*. Best Practice Protected Area Guidelines Series No. 3, World Commission on Protected Areas, IUCN: 1999.

Lambert J. and R. Sweet, *Study of National Wildlife Areas: Facilities Operation, Maintenance and Recapitalization*. Public Works and Architectural and Engineering Services for Environment Canada: 1993.

MacKinnon, Colin, Diane Amirault and Randy Hicks, *A Review of Migratory Bird Sanctuaries in Southwestern Nova Scotia*. Discussion Draft for Comment, CWS Atlantic Region: 1993.

Malcolm, Liu, Miller, Allnut, Hansen, *Habitats at Risk – Global Warming and Species Loss in Globally Significant Terrestrial Ecosystems*, WWF 2002

Malcolm J. & Markham A, *Global warming and terrestrial biodiversity decline*, prepared for the World Wide Fund for Nature, 2000

National Audubon Society, *Seeking Refuge*, Audubon. May/June 1996

National Audubon Society, "Refuge Campaign." National Audubon Society web site: [www.Audubon.org/campaign/refuge](http://www.Audubon.org/campaign/refuge): 2001\*.

Novakowski, N. et. al., *Assessment of Priority Sites for the Establishment of a Network of Conservation Areas by the Canadian Wildlife Service*. Study undertaken by Environmental-Social Advisory Services Inc. for CWS: 1992.

Parks Canada, "National Marine Conservation Areas Program." Parks Canada web site: [www.parksCanada.gc.ca/nmca/nmca/program.htm](http://www.parksCanada.gc.ca/nmca/nmca/program.htm): 2001\*.

Parks Canada, *Sea to Sea to Sea: Canada's National Marine Conservation Areas System Plan*. Department of Canadian Heritage: 1995.

Parks Canada Agency, "*Unimpaired for Future Generations*"?. Report of the Panel on the Ecological Integrity in Canada's National Parks: 2000.

Romo, J.T. & P.L. Grilz, *Invasion of the Canadian prairies by an exotic perennial*, Blue Jay 48: 130-135. 1990

Smith, A., *Documentation of the relevant policy and operational context for NWA/MPA as a starting point for the development of a systems plan*. Contract report to Habitat Conservation Division, CWS: 2000.

World Commission on Protected Areas, "About Protected Areas." IUCN web site: <http://wcpa.iucn.org/wcpainfo/protectedareas.html>: 2001\*.

World Commission on Protected Areas, "Key Issues—Marine Protected Areas." IUCN web site: <http://wcpa.iucn.org/theme/marine/marine.html>: 2001\*.

Zurbrigg, Eleanor, *Towards an Environment Canada Strategy for Coastal and Marine Protected Areas*. CWS Marine Habitat Working Group, Environment Canada 1996.

## **Appendix 1 - The IBA Program**

The IBA program is an international initiative coordinated by BirdLife International, a partnership of member-based organizations in over 100 countries seeking to identify and conserve sites important to all bird species worldwide. Through the protection of birds and habitats, IBAs also promote the conservation of the world's biodiversity. There are currently IBA Programs in Europe, Africa, the Middle East, Asia, and the Americas.

The Canadian Nature Federation (CNF) and Bird Studies Canada (BSC) are the Canadian BirdLife co-partners. The Canadian IBA Program is part of the Americas IBA Program which includes the United States, Mexico, and 17 countries in Central and South America.

The goals of the Canadian IBA program are to:

- identify a network of sites that conserve the natural diversity of Canadian bird species and are critical to the long-term viability of naturally occurring bird populations;
- determine the type of protection or stewardship required for each site, and ensure the conservation of sites through partnerships of local stakeholders who develop and implement appropriate on-the-ground conservation plans; and
- establish ongoing local involvement in site protection and monitoring.

IBAs are identified by the presence of birds falling under one or more of the following internationally agreed-upon categories:

- 1) Sites regularly holding significant numbers of an endangered, threatened, or vulnerable species.
- 2) Sites regularly holding an endemic species, or species with restricted ranges.
- 3) Sites regularly holding an assemblage of species largely restricted to a biome.
- 4) Sites where birds concentrate in significant numbers when breeding, in winter, or during migration.

## Appendix 2 - IBA Sites in the NWA-MBS Network

Province / Territ	CWS site	MBS / NWA	IBA #	IBA name
<b>YT</b>	Nisutlin River Delta	NWA	YK003	Nisutlin River Delta
<b>BC</b>	Alaksen / George C. Reifel	Both	BC019	Roberts and Sturgeon Banks
	Qualicum	NWA	BC056	Little Qualicum Estuary
	Nechako River	MBS	BC252	Nechako River
	Vaseux Bighorn / Vaseux Lake	Both	BC262	Vaseux Lake
<b>AB</b>	Spiers Lake	NWA	AB026	Chain, Spiers and Farrell Lakes
	Saskatoon Lake	MBS	AB107	Grande Prairie
<b>SK</b>	Last Mountain Lake	Both	SK001	Last Mountain Lake NWA
	Redberry Lake	MBS	SK005	Redberry Lake
	Old Wives Lake	MBS	SK031	Old Wives - Frederick Lakes
	Raven Island / Lenore Lake	Both	SK074	Lake Lenore
	Basin and Middle Lakes	MBS	SK075	Basin and Middle Lakes
<b>ON</b>	Long Point-Big Creek Complex	NWA	ON001	Long Point Peninsula and Marshes
	Prince Edward Point	NWA	ON003	Prince Edward Point
	St. Clair	NWA	ON012	St. Clair Lake&Marsh Complex
	Wye Marsh	NWA	ON015	Wye Marsh
	Hannah Bay	MBS	ON123	Hannah Bay
	Moose River	MBS	ON138	Moose River Estuary
	Hannah Bay	MBS	ON147	East Point
	Chantry Island	MBS	ON154	Chantry Island
<b>QC</b>	Bonaventure Island and Perce Rock	MBS	QC001	Ile Bonaventure
	Cap Tourmente	NWA	QC002	Cap Tourmente
	Bird Rocks	MBS	QC006	Les Rocher aux Oiseaux
	Pointe de l'Est	NWA	QC009	Pointe de l'Est NWA
	Gros Mecatina	MBS	QC033	Pointe Saint-Pierre and Ile Plate
	Pointe-au-Pere	NWA	QC041	Marais de Pointe-au-Pere
	Baie de L'Isle-Verte	Both	QC042	Marais de la Baie de L'Isle-Verte
	Iles de l'estuaire	NWA	QC045	Ile Bicquette
	Ile aux Basques	MBS	QC046	Ile aux Basques et les Razades
	Iles de l'estuaire	NWA	QC048	Ile Blanche
	Iles de l'estuaire	NWA	QC049	Les Iles Pelerins
	Iles de l'estuaire	NWA	QC050	Iles du Pot a l'Eau-de-Vie
	Brador Bay	MBS	QC063	Baie de Brador
	Saint-Augustin	MBS	QC064	Saint-Augustin MBS
	Ile Sainte-Marie	MBS	QC065	Iles Sainte-Marie
	Brador Bay	MBS	QC066	Iles aux Perroquets
	Baie des Loups	MBS	QC069	Baie des Loups
	Watshishou	MBS	QC072	Watshishou
	Betchouane	MBS	QC074	Betchouane
	Ile du Corossol	MBS	QC081	Ile du Corossol

<b>Province / Territ</b>	<b>CWS site</b>	<b>MBS / NWA</b>	<b>IBA #</b>	<b>IBA name</b>
<b>QC</b>	Cap-Saint-Ignace	MBS	QC102	Cap Saint-Ignace
	Montmagny	MBS	QC104	Montmagny
	Saint-Vallier	MBS	QC105	Anse de Saint-Vallier
	Nicolet	MBS	QC112	Nicolet-Baie-du-Febvre
	Philipsburg	MBS	QC124	Philipsburg
	Iles de Contrecoeur	NWA	QC125	Iles de Contrecoeur NWA
	Couvee islands	MBS	QC127	Iles de la Couvee
	Ile aux Herons	MBS	QC128	Ile aux Herons MBS
	Iles de la Paix	Both	QC134	Lac Saint-Louis and Iles de la Paix
	Lac Saint-Francois	MBS	QC137	Lac Saint-Francois NWA and bordering waters
<b>NB</b>	Shepody	NWA	NB009	Shepody Bay West
	Portobello Creek	NWA	NB010	Lower Saint John River
	Grand Manan	MBS	NB011	Grand Manan / Kent Islands
	Machias Seal Island	MBS	NB019	Machias Seal Island
<b>NS</b>	Chignecto / Amherst Point	Both	NS002	Upper Cumberland Basin
	Port Joli; Port L'Hebert; Sable River; Haley Lake	MBS	NS004	NS South Shore (Port Joli Sector)
	Big Glace Bay Lake	MBS	NS007	Big Glace Bay Lake
	Boot Island	NWA	NS020	Minas Basin
	Sable Island	MBS	NS025	Sable Island
	Sea Wolf Island	NWA	NS058	Margaree Island
<b>NF</b>	Ile aux Canes / Green Island	MBS	NF032	Green Island
<b>NU</b>	Bylot Island	MBS	NU004	Cape Hay
	Prince Leopold Island	MBS	NU006	Prince Leopold Island
	Queen Maud Gulf	MBS	NU009	Queen Maud Lowlands
	Nirjutiqavvik	NWA	NU010	Cambridge Point
	Bylot Island	MBS	NU013	Southwest Bylot Island
	McConnell River	MBS	NU020	McConnell River
	Harry Gibbons	MBS	NU022	Boas River and Associated Wetlands
	East Bay	MBS	NU023	East Bay
	Akimiski Island	MBS	NU036	Akimiski Island
	Seymour Island	MBS	NU045	Seymour Island
	Polar Bear Pass	NWA	NU048	Polar Bear Pass
	Bylot Island	MBS	NU068	Cape Graham Moore
	Dewey Soper	MBS	NU078	Great Plain of the Koukdjuak
	Boatswain Bay	MBS	NU097	Boatswain Bay
	<b>NT</b>	Kendall Island	MBS	NT016
Banks Island No. 1		MBS	NT017	Banks Island MBS
Anderson River Delta		MBS	NT038	Anderson River Delta
Cape Parry		MBS	NT041	Cape Parry
Banks Island No. 2		MBS	NT043	Thomsen River

## **Appendix 3 – Site Selection Criteria for NWAs and MBSs**

### **I SITE SELECTION CRITERIA FOR NATIONAL WILDLIFE AREAS<sup>38</sup>**

The criteria were established for three main purposes:

- to establish a minimum standard of national habitat importance, based on defensible biological values in keeping with Canada's obligation under The Convention on Biological Diversity and A Wildlife Policy for Canada;
- to make decisions for the selection of new areas that are generally consistent across the country; and
- to communicate, and to demonstrate the uniqueness and national value of NWAs.

#### **Scope of Selection Criteria**

The criteria take into account:

- the authority of the Canada Wildlife Act to establish national wildlife areas;
- the purposes of research, conservation and interpretation for which NWAs may be established under the Canada Wildlife Act;
- national and international commitments of the federal government as pertains to habitat; and
- the broad definition for "wildlife" as agreed to by all jurisdictions in "A Wildlife Policy for Canada".

In developing these CWS national criteria, it was recognized and agreed that regional applications may require regionally specific guidelines. It was further recognized and agreed that CWS Regions may choose to elaborate on these national criteria to produce Region-specific criteria. In either case, the national criteria formed the minimum standard for selection, nationwide.

#### **Criteria**

An area is considered to meet the minimum requirements of a National Wildlife Area (NWA) if it meets at least one of the selection criteria set out below.

Criteria based on:

##### *Migratory birds*

1.(a) The area supports a population of a 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 1% of the Canadian population of a species or subspecies or a group of species, for any portion of the year. (c) The area possesses a high research potential for restoration or enhancement, such that migratory bird populations could be increased to meet national population targets.

##### *Wild flora and fauna*

2.(a)The area supports an appreciable assemblage of rare, vulnerable, threatened or endangered species or subspecies of plants or animals, or an appreciable number of individuals of any one or

---

<sup>38</sup> Criteria for Selecting Candidate National Wildlife Areas, Canadian Wildlife Service, 1994.

more of these species or subspecies (e.g. COSEWIC\* list) OR (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

*Unique wildlife habitat*

3. The area is a rare or unusual wildlife habitat, of a specific type in a biogeographic region.

**Assessing NWA Feasibility**

There are a number circumstances that must be take into consideration when assessing NWA feasibility ranging from administrative considerations. (e.g., land ownership, ministerial authority, resources to enforce regulations if necessary) to biological considerations (e.g. meets all or part of the criteria for selection)

**Guidelines for Application of the Criteria for Selecting Candidate NWAs**

1(a). This criterion may apply where collection of population data is difficult due to the size of a species' geographic range. The criterion includes areas on which species or subspecies depend to complete any part of their life cycle such as nesting, feeding, migration and wintering areas. A group of species would be, for example, waterfowl.

1(b). In the Northwest Territories and Nunavut, CWS uses a one percent criterion for populations of a species or subspecies or group of species, to determine national significance. As well, the Ramsar Convention uses a one percent criterion to determine internationally significant numbers of waterfowl. Areas covered are otherwise similar to criterion 1(a).

1(c). This criterion may apply to an area with high potential for wildlife research, which is one of the functions for which an NWA may be created. Research may be in support of restoration or enhancement of an area, either to restore degraded habitats or to enhance good habitats, for the benefit of wildlife. The goal would be to increase wildlife populations to meet national targets, such as those established under the North American Waterfowl Management Plan, the Canadian Landbird Conservation Strategy, the Committee on the Status of Endangered Wildlife in Canada or RENEW (Recovery of Nationally Endangered Wildlife) programs, the North American Bird Conservation Initiative, and on occasion, international targets.

2(a). An "appreciable assemblage" of species or subspecies would be a grouping that, in relative terms, is generally accepted as being sufficient to warrant conservation action. In general, what constitutes an "appreciable number of individuals" would be determined on a case-by-case basis, based on the specific circumstances of each species or sub-species or group of species. For a species which is concentrated in an area, an "appreciable number" of individuals of a population of a rare or endangered species might amount to 1% of the population.

2(b). Quality and uniqueness of flora and fauna could refer to an exceptional diversity of wildlife species, endemism, genetically-distinct stock, etc.

Allows for habitats that always have been rare in a region, as well as habitats reduced to a remnant of their former extent. Examples include bog habitats in southern Ontario, the Garry Oak ecosystem on southern Vancouver Island, or the tall grass prairie ecosystem.

## II Site Selection Criteria for Migratory Bird Sanctuaries<sup>39</sup>

Sanctuaries should be reviewed every five years to determine if they continue to meet the described criteria. An area will be considered suitable for the establishment or maintenance of a Migratory Bird Sanctuary if it meets one or more of the criteria that follow:

1. It supports populations which are concentrated, for any part of the year, in order to meet one or several essential needs, and which are vulnerable to site-specific threats. As a significant portion of the populations could be affected, threats may include exploration or development, etc. Such key habitat sites could include nesting colonies, moulting areas, wintering areas or staging areas.
2. It supports populations that occupy habitats of restricted geographical area and are vulnerable to human disturbance. Areas that support threatened, endangered or rare species are examples.
3. It regularly supports at least 1% of a population of one species or subspecies. In the Northwest Territories, Nunuvut, and Yukon (the latter, north of the Arctic Circle) national population totals (when known) will be used as benchmarks. In the South and southern Yukon, provincial or regional populations will be considered. Regions should review the population status of the featured species every five years and provide appropriate recommendation to Headquarters.
4. The site figures prominently in the requirement for the management of regional populations of migratory birds and/or has high capability for educational or interpretative purposes.

---

<sup>39</sup> Approved by the CWS Executive Committee in 1998

## Appendix 4 – Status of NWA and MBS Management Plans

X – Identifies site as MBS or NWA

MP – Management plan has been prepared

19XX – Date of management plan

SITE NAME	NWA	MBS
Akimiski Island		X
Amherst Point		X
Anderson		X MP 1992
Alaksen	X MP 1986, MP 1993	
Baie de l'Île Verte	X MP 1986	X see NWA MP
Banks Island No. 1		X MP 1992
Banks Island No. 2		X MP 1992
Bassin and Middle Lakes		X
Beckett Creek		X
Big Creek	X MP 1984	
Big Glace Bay		X
Black Pond		X
Blue Quills	X MP 1984	
Boatswain Bay		X
Boot Island	X MP	
Bradwell	X MP 1986	
Bylot Island		X MP 1984
Cape Dorset		X
Cape Journain	X MP 1983	
Cape Parry		X MP 1992
Cap St-Ignace		X
Cap Tourmente	X MP 1986	
Chantry Island		X
Chignetic	X MP 1984	
Christie Islet		X
Columbia	X MP 1986 (1997?)	
Dewey Soper		X
Duncairn Reservoir		X
East Bay		X
Eleanor Island	X MP 1985	X
Esquimalt Lagoon		X
Fielding		X
George C. Reifel		X MP 1986
Grand Manan		X
Guelph		X
Haley Lake		X
Hannah Bay		X
Harry Gibbons		X
Ile aux Fraises		X
Ile Blanche		X
Ile Carillon, Senneville		X
Iles aux Basques		X
Iles aux Hérons		X
Iles de Contrecoeur	X MP 1986	
Iles de Kamouraska		X

SITE NAME	NWA	MBS
Iles de la Couvée		X
Iles de la Paix	X MP 1986	X
Iles de l'estuaire	X MP 1989	
Ile Saint-Ours		X
Iles Pelerins		X
Iles Pot-à -l'eau-de- vie		X
Indian Head		X
L'Islet Trois-Saumons		X
Inglewood		X
Kendall Island		X MP 1992
Kentville		X
Lac Saint Francois	X MP 1986	
Last Mountain Lake	X MP 1994	X See NWA MP
Lenore Lake		X (See Raven Island NWA MP)
Long Point	X MP 1983	
Machias Seal Island		X
Margaree (Sea Wolf)	X MP 1987	
McConnell River		X
Meanook	X MP 1984	
Mississippi Lake	X MP 1986	X
Mohawk Island	X MP 1985	
Montmagny		X
Mont St-Hilaire		X
Moose River		X
Murray Lake		X
Nechako River		X
Neely Lake		X
Nicolet		X
Nijutgavvik	X	
Nisutlin River Delta	X MP ~2000	
Old Wives Lake		X
Opuntia Lake		X
Pinafore Park.		X
Philipsburg		X
Pointe-au-Père	X MP?	
Pointe de l'Est	X MP 1986	
Polar Bear Pass	X MP 1990	
Pope	X MP 1986	
Portage Island	X MP?	
Port Hebert		X
Port Joli	X MP?	X
Portobello Creek	X MP?	
Prairie	X MP 1985	
Prince Edward Point	X MP 1985	
Prince Leopold Island		X MP 1994
Qualicum	X MP 1986	
Queen Maud Gulf		X
Raven Island	X MP 1984	
Redberry Lake		X
Red Deer		X

<b>SITE NAME</b>	<b>NWA</b>	<b>MBS</b>
Richardson Lake		X
Rideau		X
River Delta		X
Rockwood	X MP 1986	
Sable Island		X
Sable River		X
Saint-Vallier		X
Sand Pond	X MP 1986	
Saskatoon Lake		X
Scent Grass Lake		X
Scotch Bonnet Island	X MP 1986	
Seymour Island		X
Shepody	X MP 1984	
Shoal Harbour		X
Spiers Lake	X MP 1991	
Stalwart	X MP 1984	
St. Clair	X MP 1982	
St. Denis	X MP 1985	
St. Joseph's Island		X
Sutherland		X
Terra Nova		X
Tintamarre	X MP 1984	
Tway	X MP 1986	
Upper Canada		X
Upper Rousay Lake		X
Val Marie Reservoir		X
Vaseux-Bighorn	X MP 1986	
Vaseaux Lake		X MP 1986
Victoria Harbour		X
Wallace Bay	X MP 1985	
Wascana Lake		X
Webb	X MP?	
Wellers Bay	X MP 1986	
Widgeon Valley	X MP 1986	
Wye Marsh	X MP?	
Young Lake		X