

From the Tundra to Tierra del Fuego: Protecting Key Sites for Birds in Canada and throughout the Western Hemisphere

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Abstract. Canada provides habitat for more than 470 species of migrating and non-migrating birds. They provide a number of ecosystem services; biological control, pollination, seed dispersal, seed germination and nutrient recycling. However their habitats are under increasing pressure from threats such as urban expansion, industrial agriculture, logging, mining and pollution. In order to ensure that our migrants return each spring, we must also work to conserve their vital habitat beyond our borders. Birds are important to conserve in their own right as they are an effective indicator taxon for environmental change; they are relatively large and diurnal, birds are close to ubiquitous geographically, are high on the food chain therefore reflecting change in a diversity of organisms and they are relatively long-lived so studies can be conducted over a number of years. Their distribution therefore helps us to identify areas where measures to conserve biodiversity are especially critical. Not all sites can be conserved so Important Bird Areas (IBAs) have been identified which are conservation priorities. Sites selected as IBAs are effective in capturing a high proportion of threatened, endemic and representative wildlife species other than birds.

INTRODUCTION

Canada's prairies are alive with Bobolinks (*Dolichonyx oryzivorus*) every summer. With the approach of winter, they travel south. Guided by the stars and oriented to the Earth's magnetic field, they make a staggering journey to a narrow swath of grassland habitat in Brazil, Paraguay and Argentina. The Bobolink's annual round-trip odyssey of over 20,000 kilometres is one of the longest of any North American songbird. Another "extreme" migrant, the Blackpoll Warbler (*Dendroica striata*) braves a non-stop migration of up to 100 hours over the Atlantic Ocean from boreal forests in the Maritimes to South America. The Ruby-throated Hummingbird (*Archilochus colubris*) leaves its Canadian habitat each fall in search of flower nectar, consuming a gram of fat - one quarter of its body weight - in a continuous flight across the Gulf of Mexico (Nature Canada 2003).

Canada provides habitat for approximately 470 species of migrating and non-migrating birds (Canadian Museum of Nature 2004). These habitats are under increasing pressure from threats such as urban expansion, industrial agriculture,

logging, mining and pollution. Two Canadian organizations – Nature Canada (NC) and Bird Studies Canada (BSC) are partners in an effort to conserve birds and their habitats. Our work spans a broad spectrum of activities, from scientific research to support for on-the-ground conservation projects. We also monitor national laws, regulations and policies that affect the conservation of birds in Canada, and collaborate with industry in finding solutions in areas where bird habitat is threatened by natural-resource extraction.

However, our efforts to conserve birds that occur in Canada are not confined to Canadian soil. The terrific migrations of species like the Bobolink, the Blackpoll Warbler and the Ruby-throated Hummingbird remind us that bird conservation must be an international endeavour. 90% of birds that breed in Canada migrate beyond our borders (Nature Canada 2003). Protecting habitat for birds within Canadian boundaries is therefore only half the equation. In order to ensure that our migrants return each spring, we must also work to conserve their vital habitat beyond our borders.

A. Bobolink
(*Dolichonyx oryzivorus*) (Photo ©
John Davidson,
Ottawa, Canada);
B. Ruby-throated
Hummingbird
(*Archilochus colubris*)
(© John Davidson)



A



B

PART OF A GLOBAL EFFORT

The planet has lost more than 150 bird species since the year 1500 and the rate of extinction is on the rise. Today, one in eight or 12 % of the world's birds are threatened with global extinction (BirdLife International 2004). Many common species are in decline and threatened species are becoming increasingly threatened. Populations of some bird species are exhibiting rapid and severe decline. The loss of bird species is primarily linked to habitat destruction, degradation and fragmentation, particularly related to unsustainable forestry, and the expansion and intensification of agriculture. Some other pressures include infrastructure development, the spread of invasive alien species (see *Effects of Invasive Alien Plants on Birds* by Paul Catling page 30), air, land and water pollution, and climate change. In the absence of concerted and rapid global action, threats to birds and their habitats will intensify and extinction rates will continue to increase.

The world's leading authority on the status of birds and their habitats, BirdLife International (BLI) is a global alliance of approximately 100 national, non-governmental, conservation organizations working together to conserve birds, their habitats and global biodiversity. The BirdLife (BL) network boasts approximately 2.5 million members and eight million supporters worldwide. BL partners combine actions at the local, national and international levels. Initiatives range from helping local communities protect specific sites to co-ordinated work on multilateral environmental agreements such as the United Nations Convention on Biological Diversity. BLI recognizes that the lives of the planet's six billion people and the survival of its 10,000 bird species are inextricably linked. As such, BL partners work to achieve their conservation goals through the promotion of sustainable human livelihoods.

Nature Canada (NC) and Bird Studies Canada (BSC) are Canada's BirdLife partners. NC is a member-based, not-for-profit, nature conservation organization dedicated to protecting nature, its diversity, and the processes that sustain it. With strategies based on sound science and passion for nature, NC effects change on issues of national significance, including bird conservation, wilderness protection, species at risk and national parks. Through public outreach and education, as well as its network of 40,000 individual supporters and more than 350 naturalist organizations operating at the local, regional and provincial levels - NC is working to build a nature ethic in Canada.

BSC is recognized nation-wide as a leading, respected and not-for-profit conservation organization dedicated to advancing the understanding, appreciation and conservation of wild birds and their habitats, in Canada and elsewhere, through studies that engage the skills, enthusiasm and support of its members, volunteers, staff and the interested public. BSC works at a variety of scales - from local to international - to achieve its mission, and recognizes that a comprehensive approach is required to keep common birds common. At the core

of BSC's success are thousands of volunteer scientists who participate in a multitude of bird-monitoring programs.

WHY CONSERVE BIRDS?

The world's birds are valuable in their own right and in many societies they also have cultural and spiritual value. At the same time, however, there are compelling scientific and economic justifications for bird conservation.

We cannot possibly measure and monitor all biodiversity. It is simply too resource intensive. We must therefore use proxy taxa as indicators. Changes in the overall threat status of these proxy taxa tell us how human activities threaten broader biodiversity. Birds are an effective indicator taxon for several reasons. Some of these include the following:

- we know more about birds than any comparable group of organisms. This can be attributed to a number of factors. For example, birds are relatively easy to identify and study because they tend to be larger and more conspicuous than many other organisms, and because most species are diurnal;
- birds occur almost everywhere on the planet, occupying a multitude of habitats and broad geographical ranges, and can therefore tell us about environmental changes occurring from the poles to the equator;
- their relatively high placement in food chains allows us to monitor environmental change affecting a great diversity of organisms; and
- their relatively long life spans allow us to study the effects of longer scale perturbations.

Birds are also useful indicators of species-richness and endemism patterns around the world. Their distribution therefore helps us to identify areas where measures to conserve biodiversity are especially critical.

The economic role of birds is substantial. Birds have tremendous popular appeal, and their direct contribution to the global economy is represented by the money we spend travelling to birdwatching destinations, and purchasing cameras, binoculars, bird feeders and bird seed. In 2001, birdwatching generated approximately \$85 billion in overall economic output in the United States alone (BirdLife International 2004).

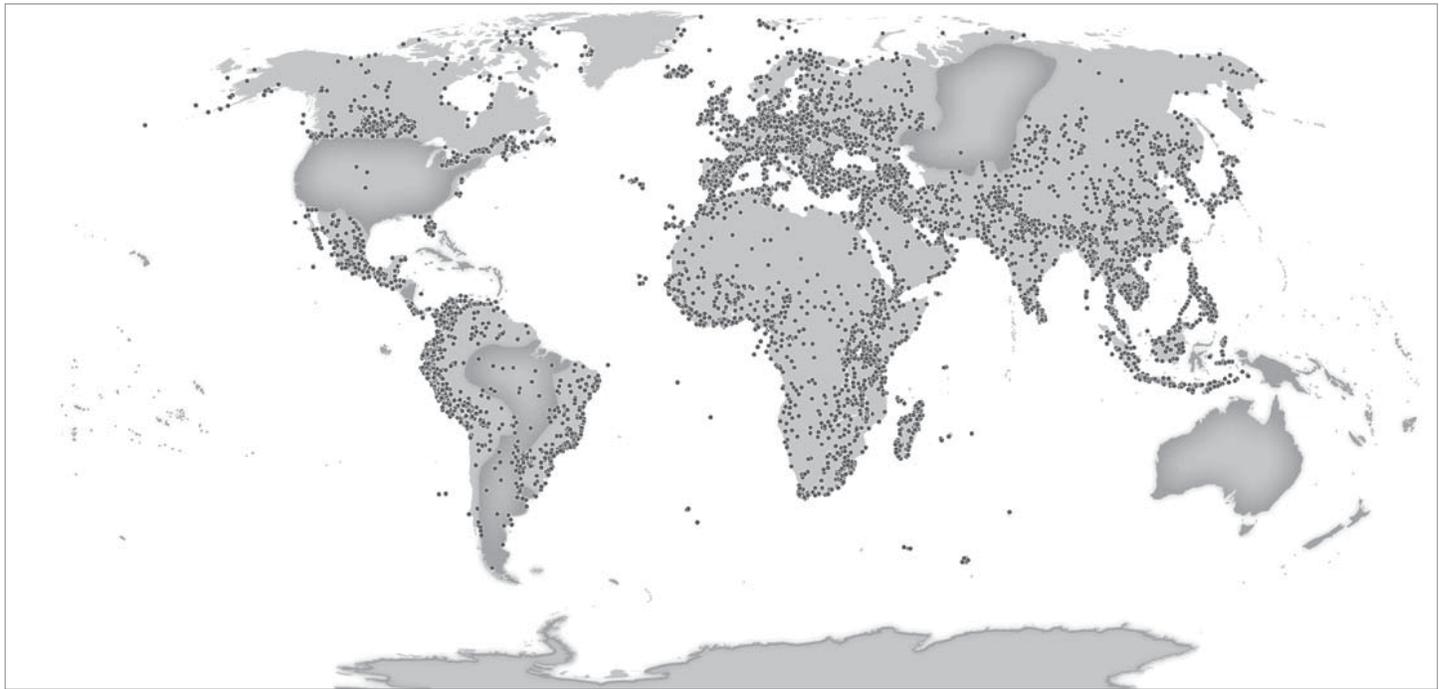
Birds' contribution to global ecosystem services far outweighs their direct economic value. The estimated combined value of these services is between US\$16 trillion and US\$54 trillion per year - approximately twice the world's Gross National Product (Costanza *et al.* 1997). We have yet to quantify the contribution made by birds to these services. However, this contribution is thought to be enormous. Some of the services for which birds are responsible include the following:

- biological control. For example, birds help control insects that infest crops. By controlling or limiting

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Andrew Couturier, coordinator of the IBA program at Bird Studies Canada, uses spatial analysis tools and technologies to enhance the conservation of birds and their habitats in Canada and elsewhere. He provides key expertise to many studies related to bird conservation, including breeding bird atlas projects in Ontario and the Maritimes.

L. Sarah Wren, Conservation Biologist at Nature Canada, works on the protection of Canada's Important Bird Areas, as well as issues related to the conservation of species at risk and federal protected areas. Sarah studied the biogeographic patterns of seed-eating finches in Newfoundland during her graduate work, and recently coauthored a species status report on the Newfoundland Red Crossbill.



Map A.
Important Bird Areas
(from *The State of the
World's Birds 2004*,
pg. 24, courtesy of
Adrian Long, BirdLife
International)

- insect outbreaks in forests, they help to mitigate the negative economic consequences associated with insect herbivory on trees;
- pollination. Birds are pollen vectors for approximately five percent of the world's cultivated plant species (Daily 1997)
 - seed dispersal. Birds are probably the most important vertebrate seed dispersers in terms of numbers of successful propagules disseminated. (Stiles 2000);
 - seed germination. The pulp-stripping role of birds' digestive tracts is essential for the germination of some seeds; and
 - nutrient cycling and enrichment. Birds play an essential role in recovering nutrients through scavenging and coprophagy (feeding on dung).

THE IMPORTANT BIRD AREAS PROGRAM

Birds occur everywhere. Some find suitable habitat in the remote reaches of a dense tropical rainforest, while others nest on the roofs of skyscrapers in the world's largest cities. We cannot conserve every site upon which birds depend. Instead, we must focus our efforts on those sites that are particularly critical because, for example, they are inhabited by rare species or host large concentrations of birds.

BLI's Important Bird Areas (IBA) Program works to identify, monitor and protect all sites of global significance for birds. Since the program's inception in 1985, BL partners have identified more than 6,400 IBAs in some 167 countries and territories (BirdLife International 2004). These sites represent BLI's conservation priorities. Some are selected on the basis of imminent threats confronting individual species. In many cases, however, sites are identified before the birds that use them become threatened with extinction.

Partners monitor and protect the IBAs in their respective countries. The global IBA network maintains species' overall ranges and populations, while also providing migratory species with a set of vital 'stepping stones.' At the same time, it unites BL partners around the world by providing them with a focus for action and advocacy at the local, national and international levels.

A set of internationally agreed-upon, standardized, quantitative and scientifically defensible criteria is used to identify Important Bird Areas. To qualify as an IBA, a site must meet at least one of these criteria: i) species of global conservation concern; ii) assemblage of restricted-range species; iii) assemblage of biome-restricted species; and iv) congregations (BirdLife International 2004a). Sites selected as IBAs must also be: i) amenable to conservation action and management; and ii) of sufficient size to support self-sustaining populations of as many of its key bird species as possible. Sites selected on the basis of their importance for migratory species must satisfy the birds' requirements for the duration of their presence.

BL partners in Europe, the Middle East, Asia and Africa have largely completed the process of IBA identification. Site identification is still underway in parts of the Americas, and in Australasia and Central Asia (see Map A).

While they are primarily sites of critical importance for the world's birds, IBAs also help us conserve biological diversity as a whole. Sites selected as IBAs are effective in capturing a high proportion of threatened, endemic and representative wildlife species other than birds. This is illustrated in East Africa, where IBAs capture 90 to 97 % of the threatened or endemic mammals, snakes and amphibians that occur in Ethiopia,

Kenya, Tanzania and Uganda (BirdLife International 2004b). Important Bird Areas therefore provide a reliable starting point for immediate conservation planning and action not only for birds, but for other taxa as well. Their use in identifying key biodiversity areas (the most important sites for terrestrial biodiversity conservation worldwide) is particularly vital because good information typically exists for birds, while it can be scarce or patchy for some other types of wildlife.

Local people are key to the success of BLI's conservation efforts. Most threats to the world's birds are rooted in human activity. In many cases, these threats are linked to global problems such as human overpopulation and increasing resource consumption. Widespread poverty poses another considerable threat to birds and broader biodiversity. The world's most biologically diverse areas typically occur in the poorest nations. Local people in these countries are largely dependent upon the natural-resource base for survival. Unsustainable consumption of natural resources by ever-increasing human populations intensifies pressure on bird habitat.

BLI recognizes that, throughout much of the world, impoverished communities and birds are competing for dwindling resources. Working with local people to develop sustainable alternatives to activities that threaten habitat for birds and other taxa is therefore central to the BL approach. There are more than 5,000 independent, community-based groups working to conserve birds and promote the sustainable use of natural resources at Important Bird Areas around the world. These "site-support groups" or SSGs help protect and monitor IBAs, while at the same time raising awareness about their importance in site-adjacent communities. SSG members are local people. In many cases, they have been managing the natural resources within and around a site for generations. BL partners join forces with SSGs in their respective countries, harnessing this local expertise and long-term commitment. Groups receive financial and logistical support, and are empowered to influence local and national decision-making processes. This partnership is vital for achieving genuinely sustainable conservation action at IBAs.

A DECADE OF EXPERIENCE WITH IMPORTANT BIRD AREAS IN CANADA

A National Network

Bird Studies Canada and Nature Canada launched the Canadian Important Bird Areas Program in 1996. While BSC takes the lead on IBA designation and data collection, NC focuses its efforts on site stewardship and protection, advocacy and communication. The program has three main goals. The first is to identify a network of IBAs. To date, we have identified 597 sites of national,

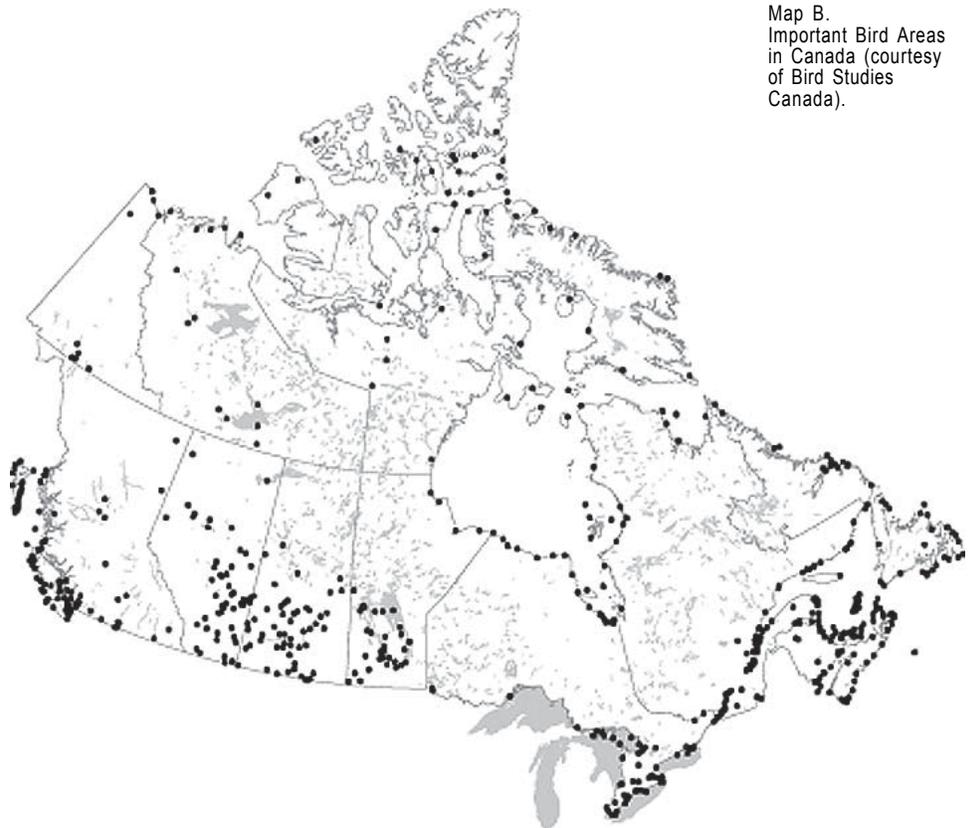
continental and global significance (see Map B). These sites provide critical habitat for the 56 bird species listed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as endangered, threatened or of special concern. They also help us ensure that common birds remain common.

The second goal of the Canadian IBA Program is to determine the conservation and stewardship requirements at each site. We partner with stakeholders at the provincial, territorial and local levels to determine these requirements. To date, we have developed conservation plans articulating concrete conservation and stewardship actions for 136 IBAs. These plans provide a focus for community involvement.

The final goal of the program involves establishing ongoing local involvement in site protection and monitoring at selected IBAs. Nature Canada is primarily engaged in fulfilling this goal through an initiative called *Important Bird Areas Communities in Action* (detailed below).

The Canadian Important Bird Areas Program applies BirdLife International's IBA criteria as follows:

- *Threatened Species.* The general objective of this criterion is to identify sites that regularly hold significant numbers of a species that has been identified as threatened or at risk of extinction.
- *Restricted-range Species.* Species that have a very limited distribution are vulnerable to habitat loss or natural disturbances. Some endemic species are abundant within their range and are not



Map B.
Important Bird Areas
in Canada (courtesy
of Bird Studies
Canada).

- considered threatened. Nevertheless, it is important to include the best or representative sites for these species within the IBA network. Sub-species or disjunct populations restricted to small areas are also of concern.
- *Biome-restricted/Representative Species Assemblages*. The objective of this criterion is to identify sites that have assemblages of birds whose breeding ranges are largely restricted to, or representative of, the various North American biomes.
 - *Congregatory Species*. Sites meeting this criterion are important because they hold large concentrations of birds during the breeding, wintering and/or migratory seasons. Marine, lacustrine (lake related) and terrestrial sites, and sites over which raptors concentrate are included. Sites may qualify based on a single species or multiple species present in large numbers.

Canada's IBA network spans the country from coast to coast. An IBA on Nunavut's Ellesmere Island encompasses nunataks (mountains surrounded by ice fields), which shelter breeding colonies representing one-third of the world's population of Ivory Gulls (*Pagophila eburnea*). On Pelee Island, Canada's southernmost point, important habitat for the at-risk Eastern Yellow-breasted Chat (*Icteria virens virens*) has earned the IBA designation. The Witless Bay Islands IBA off Newfoundland and Labrador supports globally significant colonies of nesting seabirds, including more than half of the eastern North American population of Atlantic Puffins (*Fratercula arctica*). Canada's westernmost IBAs include sites dotting islets around British Columbia's Haida Gwaii (the Queen Charlotte Islands), where seabirds such as Ancient Murrelets (*Synthliboramphus antiquus*) and Cassin's Auklets (*Ptychoramphus aleuticus*) nest in abundance.

Canadian IBAs represent a diverse range of habitats. Certain strictly marine sites are open-ocean upwelling zones or polynyas (an area of open water in sea ice) where seabirds forage. Others encompass tracts of native grassland that offer essential habitat for several threatened prairie species like the Burrowing Owl (*Athene cunicularia*) and the Ferruginous Hawk (*Buteo regalis*). Still others are forested sites important for a variety of breeding birds such as Bicknell's Thrush (*Catharus bicknelli*), Hooded Warblers (*Wilsonia citrine*) and Marbled Murrelets (*Brachyramphus marmoratus*).

CANADIAN IBA'S ON-LINE AND INTERACTIVE

In order for IBA's to be an effective conservation tool, information concerning their boundaries, biodiversity, threats and other attributes must be available to conservation practitioners. Many BL partners have published books that inventory their IBAs. However, given the size of Canada's IBA network, a published book would have been potentially unwieldy. BSC and NC therefore decided to publish their inventory as a dynamic, web-based directory. The Canadian IBA On-

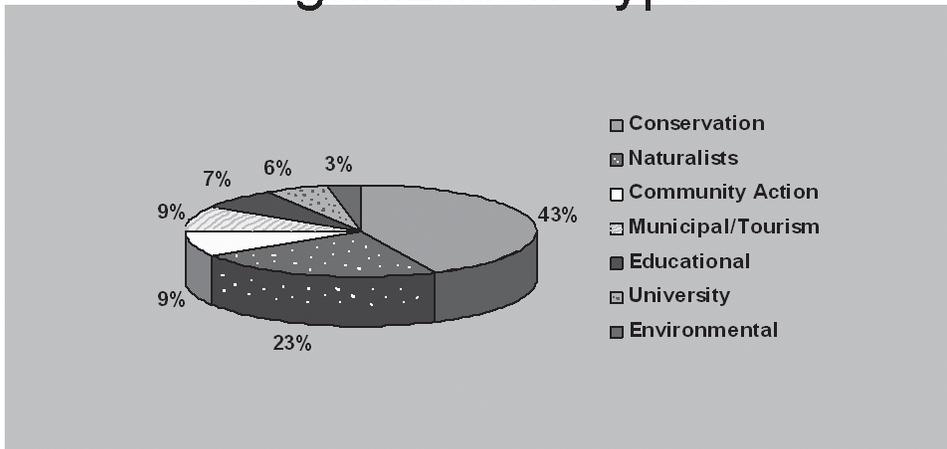
line Directory (<http://www.ibacanada.ca>) allows users to query a database by geographical location, species, threats and other attributes, and returns site summaries for each of Canada's 597 IBAs in a layout similar to those found in printed inventories produced by other BL partners. Because these site summaries are on-line, corrections and updates are easily accommodated.

The Canadian IBA On-line Directory also provides maps indicating IBA boundaries. A related Bird Studies Canada website, BirdMap Canada (http://www.bsc-eoc.org/birdmap_e.htm), adds further value by allowing IBA polygons to be overlaid with a variety of national and regional bird biodiversity databases. Currently, data on over 400 bird species from Christmas bird counts, breeding bird surveys, banding records and range maps can be queried and mapped, and overlaid with maps showing the boundaries of IBAs and bird conservation regions. Researchers, conservation planners and interested members of the public can access these databases through one central location with only a few mouse clicks. The IBA polygon database is also available as a download to interested parties. It is requested dozens of times per year, mainly by environmental assessment practitioners and conservation groups engaged in the design of protected-area networks.

One of the greatest challenges facing the Canadian IBA network is ongoing monitoring. A newly developed component of the Canadian IBA On-line Directory is a web-based checklist tool that allows ordinary citizens to participate in monitoring bird populations within IBAs. Their observations are entered on-line and stored in a 'living database,' which can be used to track populations over time and thereby flag declines at the earliest possible stage.

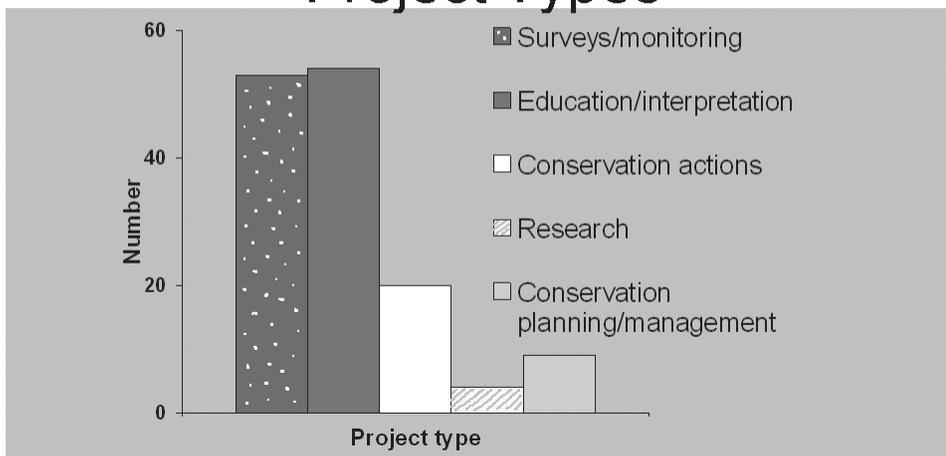
The Important Bird Area designation does not entail legal protection in Canada. Nature Canada is therefore working to ensure that key IBAs are encompassed within the nation's protected-area networks. The organization promotes the expansion of these networks through the establishment of new national parks, national wildlife areas, marine protected areas and migratory bird sanctuaries. Equally important are its efforts to ensure the ecological integrity of these sites. Nature Canada is working to secure protected-area status for IBAs where legal protection is critical. (National parks are administered by the Parks Canada Agency and protect representative samples of each of Canada's natural regions. National wildlife areas protect essential habitat for migratory birds, species at risk and other wildlife species. They are owned by the federal government and administered by Environment Canada. Migratory bird sanctuaries occur on public and private lands and are administered by Environment Canada. They generally focus on protecting migratory birds and their breeding grounds during the breeding season. Finally, marine protected areas protect marine and aquatic habitat. They are designated by Environment Canada, Parks Canada and

Communities in Action: Organization Types



Types of organizations in the *Communities in Action* initiative.

Communities in Action: Project Types



Types of projects in the initiative.

the Department of Fisheries and Oceans for different purposes).

WORKING WITH PEOPLE

In Canada and throughout the developed world, threats to Important Bird Areas are not directly linked with unsustainable local resource-consumption patterns to the extent that they are in developing countries. Instead, they are more often related to large-scale habitat destruction, degradation and fragmentation caused by, for example, unsustainable forestry, urbanization, and the expansion and intensification of industrial agriculture. Local conservation action is therefore just as critical at Northern IBAs as it is in developing countries.

In 1999, Nature Canada began working with site-support groups through an initiative called *Important Bird Areas Communities in Action*. The cornerstone of Nature Canada's on-the-ground conservation efforts at IBAs,

Communities in Action works with groups implementing critical conservation-related activities at high-priority sites across the country. The program provides small grants of up to \$5000 to environmental organizations, naturalist clubs, cottage associations and others undertaking direct conservation action, on- and off-site education, research and monitoring at these sites. Project activities are diverse. For example, grant recipients erect fences around nesting sites, deliver presentations at local schools, plant grass plugs, publish 2000-2001 to train volunteers in Bald Eagle interpretation at the Squamish River Area IBA. Additional grants since then have enabled the Society to partner with local schools and ecotourism enterprises in developing a year-round network of community support for the conservation of Bald Eagles at this site.

Nature Canada recently completed a review of site-support groups in the Americas. This review concluded

that, in Canada, projects at IBAs provide the opportunity for partnerships among diverse stakeholders. Groups implementing these projects take pride in their local IBAs and develop a sense of ownership with respect to their conservation work. At the same time, Nature Canada found that the SSG model in Canada has certain obstacles to overcome. Principal among these is the problem of capacity. Groups supported by *Communities in Action* typically comprise a small number of volunteers struggling to balance on-the-ground project

BA Monitoring is for the Birds at Point Lepreau, New Brunswick

Twice a year, an inconspicuous wooden monitoring station at Point Lepreau/Maces Bay IBA near Saint John, New Brunswick becomes a hive of activity. Over 200 volunteers motivated by their love of birds converge on the Point Lepreau Bird Observatory for nine weeks each spring and fall. Their binoculars fixed on the Bay of Fundy, they count thousands of migrating seaducks, including White-winged Scoters (*Melanitta fusca*) and Black Scoters (*M. nigra*). Bird species occur in nationally, continentally and globally significant numbers at this Important Bird Area, which is subject to heavy tanker traffic and therefore threatened by oil spills.

Nature Canada's *Communities in Action* has supported the Point Lepreau Bird Observatory since 2000. This has enabled the Saint John Naturalists' Club to hire a dedicated observer for seaduck monitoring. The quality of the long-term data set has been enhanced as a result. The expectation is that these data will be used to help influence decision-making with respect to reducing tanker traffic in the Bay of Fundy.

The Point Lepreau Bird Observatory has garnered well deserved attention. Its monitoring activities have been profiled in the media, and employees at an adjacent nuclear plant enjoy visiting the observatory and learning about the project. Meanwhile, the Saint John Naturalists' Club has inspired two other groups further along the Scoters' migration route to initiate their own monitoring regimes.

implementation, fundraising and associated reporting with their professional and family obligations. Volunteer 'burnout' is an ever-present challenge for these groups.

The maintenance of site-support groups – in Canada and throughout the world – is critical. SSGs are a vital component of our conservation "toolkit." Even if an IBA achieves official protection, on-the-ground conservation activities at the site may not happen unless local stakeholders are engaged. As such, legal protection is not an alternative to SSGs. The question, therefore, is not whether local participation is essential, but rather how the engagement of local people can be achieved most effectively.

A HEMISPHERIC APPROACH

Bird conservation entails conserving habitat for birds throughout their ranges. For Canada's migratory bird species, this means working to secure habitat at Important Bird Areas throughout the Western Hemisphere. These sites face increasing pressure from a host of threats including, for example, urban expansion, large-scale industrial agriculture, the clearing of mangroves for shrimp cultivation, intensive tourism development, pollution and deforestation for grazing. The loss of critical bird habitat beyond Canadian borders will spell disaster for billions of migrants, ultimately compromising their survival. NC therefore collaborates with other partners in BL's Americas division to

implement projects aimed at conserving critical IBAs for migratory birds in Latin America.

The Americas division of BLI comprises 17 national, democratic, membership-based conservation organizations in sixteen countries throughout North, Central and South America, and the Caribbean (including Nature Canada and Bird Studies Canada). These organizations are implementing projects at IBAs in 26 countries. They have a combined total of over 1,000 staff and more than half a million members working to conserve some of the approximately 4,500 bird species that occur in the Western Hemisphere (<http://www.birdlife.org.uk/worldwide/regional/americas/index.html>). More than 850 of these species have restricted ranges, and a staggering 12 percent are considered globally threatened, primarily as a result of habitat destruction, degradation and fragmentation. The Americas partnership raised more than US\$80 million for bird conservation in 2004 (BirdLife International 2004c)

To date, more than 2,000 Important Bird Areas have been identified in the Americas (http://www.birdlife.org.uk/action/science/sites/american_ibas/index.html?language=en). The goal is to have all IBAs inventoried and mapped by 2007. Site information is increasingly available through publications produced in English, French, Spanish, Portuguese and other local languages.

NC's review of site-support groups in the Americas has revealed that at least 209 groups are recognized. These groups are diverse in their origin, composition, governance and motivation, and they undertake a broad range of project activities. The most explicit difference between the "communities in action" supported by NC and SSGs in developing countries to the south is one of motivation. In Canada, groups working at IBAs are inspired primarily by the need to conserve birds and their habitats. Conservation objectives are paramount. However, for impoverished communities in Latin America and the Caribbean, conservation outcomes are often secondary to the achievement of development goals. Groups at IBAs in the South are interested first and foremost in improving their livelihoods. For these groups, IBAs are a source of food, building material, fuel and other necessities. The harvest and sale of their resources generates income. The challenge of SSG engagement in the South, therefore, is to strike a balance between the needs of people and those of birds.

For BL partners, the key to achieving this balance is finding ways of generating income through the conservation and sustainable use of natural resources at IBAs. Such income-generating schemes include, for example, the development of ecotourism ventures and associated businesses such as handicraft production, the harvest and sale of non-timber forest products such as honey, and the production of organic crops like shade-grown cocoa. Income earned from

these kinds of activities can provide communities with wells, sanitation systems, clinics and schools. Meanwhile, because the income-generating activities depend upon the maintenance of healthy ecosystems within the IBA, vital habitat for birds and other taxa is conserved.

The Upper Bay of Panama, an IBA of global significance, is a veritable mecca for birds. Each year, it attracts at least 1.3 million shorebirds (<http://www.manomet.org/WHSRN/viewsite.php?id=80>). For Canadian migrants such as the Semipalmated Sandpiper (*Calidris pusilla*), the Western Sandpiper (*C. mauri*), and the Semipalmated Plover (*Charadrius semipalmatus*), the bay is a critical oasis. Its designation as a wetland of international importance under the Ramsar Convention is testimony to the Upper Bay of Panama's ecological significance.

NC works closely with Audubon Panamá (BL's Panama partner) to ensure the conservation of the Río Bayano estuary. Located just east of Panama City, this estuary forms the heart of the Upper Bay of Panama IBA. Over-exploitation of natural resources, urban expansion, poor waste-management practices and the encroachment of industrial agriculture are threatening to destroy this critical bird sanctuary, and the livelihoods of local communities that depend upon it for survival. With support from the Canadian International Development Agency's (CIDA) Environment and Sustainable Development Program, Audubon Panamá and NC are working with two communities bordering the IBA to enhance local livelihoods through ecotourism development.

Chinina Abajo and Chepillo Island are poor fishing villages. Community members are entirely dependent upon the sea for their livelihoods. Clean water is scarce in both communities. While there is a generator on Chepillo Island, electricity is unreliable. The people of Chinina Abajo have no electricity. Both communities are several miles by boat from proper medical facilities, and education is rudimentary.

The people of Chepillo have constructed a tourist hostel. In Chinina, interest in providing entertainment to birdwatching tourists has revived traditional dance, and iguanas are being raised for sale to local markets. Men and women in both communities are participating in a variety of capacity-building courses related to the management of an ecotourism enterprise. Courses provide instruction in everything from accounting to bird guiding. Meanwhile, environmental education classes have been introduced at the local schools. Through these activities, community members are developing a vested interest in ensuring the preservation of local natural resources. They are also becoming increasingly aware of the global importance of their surroundings for birds. Enthusiasm in the communities for finding and watching birds is on the rise, and binoculars provided to community members through the project



A, The Point Lepreau IBA in New Brunswick showing the coastline surrounding the bird observatory; B, The Bird Observatory where the seaduck migration monitoring is conducted; C, The IBA designation plate.

allow them to contribute vital information about birds in the area.

For BL partners that have traditionally focused on the scientific study of birds, working collaboratively with site-support groups to advance conservation objectives at IBA's is somewhat foreign. This was true for the BirdLife partner in Paraguay. With funding from CIDA, NC and Guyra Paraguay are working with local people to develop conservation-based livelihood opportunities adjacent to patches of eastern Paraguay's vanishing Atlantic Forest. According to Dr. Rob Clay, Guyra Paraguay's science and planning coordinator, the organization had previously focused on bird and site research. However, that led to

Efforts to conserve birds and broader biodiversity in developing countries throughout the Americas will be most effective if they are advanced with the help of well-trained local biologists. BSC is therefore working to foster homegrown ornithological research in Latin America and the Caribbean. The idea is to provide biologists in the region with training opportunities that further their ornithological knowledge and skills. Since its inception in 1995, the Latin American Training Program has welcomed participants from Brazil, Colombia, Costa Rica, Cuba, the Dominican Republic, Ecuador, Jamaica, Mexico, Nicaragua, Panama and Puerto Rico. Training occurs in-country and at the organization's headquarters at Long Point in southwestern Ontario.

the question "what next?" and the decision that it was "time to do something on the ground to protect birds." "We are not a social welfare organization," says Clay, "but we recognize that the welfare of the people around these sites is the key to the long-term health of these sites." (Nature Canada 2003)

Joint projects supported by Canadian funds are not sustainable in the long term. BSC and NC are therefore building the capacity of their BL partners in the South to undertake sustainable development work on their own. At the same time, both organizations are working with their Southern partners to ensure that local communities are eventually in a position to manage projects with minimal outside assistance.

THE FUTURE OF THE IBA PROGRAM IN CANADA

NC and BSC have made substantial progress in conserving birds and their habitat in Canada and throughout the Western Hemisphere since launching the Canadian IBA Program almost ten years ago. However, there is still much to be done. There are many more steps that we need to take in order to reverse the decline of common birds and decrease the proportion of bird species on our national list of species at risk.

One step will involve securing legal protection for key IBA's in Canada. While some of the 597 sites in our IBA network are already included within the boundaries of existing protected areas, many others containing critical habitat do not.

On-the-ground conservation efforts are critical to the future of Canada's IBAs. We must work in the coming years to

ensure the sustained engagement of local community groups at key sites from coast to coast. Greater financial and human resources are needed to support the work of existing groups and enhance their achievements, develop new conservation plans, and expand the number of sites being conserved through local action.

Prioritization of Canada's IBA's is also critical. Limited human and financial resources prevent Nature Canada and Bird Studies Canada from devoting equal attention to all 597 sites. We therefore need to identify those IBAs that are most severely threatened and of greatest global significance for birds. Developing a list of priority sites will enable us to target conservation action and channel scarce resources more efficiently.

We must also continue to raise awareness in Canada about the need to consider bird conservation beyond our borders. Communicating the linkages between conservation efforts in Canada, and the integration of poverty alleviation and habitat protection in Latin America and the Caribbean is crucial.

Whatever steps we take in the years ahead, we must recognize that IBA's alone will not safeguard habitat for birds. IBAs are only one link in the chain. For birds such as boreal-breeding songbirds, which are not concentrated in specific areas, the site-based conservation model is not sufficient. Bird conservation therefore demands a broader landscape-based approach. IBA conservation must be integrated with targeted species-conservation efforts, such as specific recovery actions for at-risk bird species, and with landscape-level conservation initiatives, such as the North American Bird Conservation Initiative. With this integrated approach, Canada will have a model for bird conservation that rivals that of any other partner in the BirdLife International network.

REFERENCES

- BirdLife International, 2004a.** *State of the world's birds 2004: indicators for our changing world.* Cambridge, UK: BirdLife International. 73pp.
- BirdLife International, 2004b.** *Working Together for Birds and People: Delivering Solutions for our Changing World.*
- BirdLife International, 2004c.** "Action for Birds and People in the Americas: Making a Difference Through Partnership (The Conservation Program of the BirdLife Americas Partnership 2004-2008).
- Costanza, R., R. D'Arge, R. de Groot, S. Farber, M. Grasso, B. Hannon, K. Limburg, S. Naeem, R. V. O'Neill, J. Paruelo, R. G. Raskin, P. Sutton, & M. van den Belt, 1997.** The value of the world's ecosystem services and natural capital. *Nature* 387: 253 – 260.
- Daily, Gretchen C. (Ed.), 1997.** *Nature's services: societal dependence on natural ecosystems.* Island Press. Washington, D.C. pg 139.
- Nature Canada, 2003.** "Avian Odyssey: Safeguarding Canada's Migratory Birds Abroad."
- Stiles, E.W. 2000.** Animals as Seed Dispersers. pp. 111-124 in M. Fenner (ed.). *Seeds: the ecology of regeneration in plant communities.* 2nd Edition. CABI Publishing, Wallingford, UK.

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