Canadian HabitatMatters

2012 Annual Report

In 2012, Canada, the United States, and Mexico signed the *North American Waterfowl Management Plan 2012: People Conserving Waterfowl and Wetlands*. This new document will serve to guide the NAWMP community as new challenges to waterfowl management arise in the future. For more information visit *www.nawmprevision.org*.

Title: "Briser la glace" (Break the Ice), from the 2013 Habitat Conservation Stamp Series. Image courtesy of Wildlife Habitat Canada.
Artist: Claude Thivierge, St. Zotique, Quebec

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The protection of wetlands is an integral part of the North American Waterfowl Management Plan (NAWMP), as the NAWMP identifies that wetlands provide habitat for over 50 waterfowl species. In addition to protecting and restoring habitat for North America's waterfowl species, work to protect wetlands under the NAWMP has provided numerous non-waterfowl benefits to the environment and society. Examples of these benefits include improving water quality, regulating water quantity, and providing habitat for many non-waterfowl species. These and other wetland benefits are described on page 3.

In Canada, the NAWMP's wetland and waterfowl conservation goals are accomplished through a "programmatic approach" that integrates and coordinates planning, science, partnerships, and implementation, resulting in well-coordinated and efficient delivery of conservation activities. The programmatic approach is implemented through public–private partnerships called joint ventures, which have been established across the country to conserve wetland habitats and associated waterfowl species. In Canada, there are four habitat-focused joint ventures and three species-focused joint ventures. This approach has resulted in securing 19.8 million acres (8 million hectares) of wetlands and associated uplands in the first 26 years of the NAWMP program in Canada.

The successful implementation of Canada's NAWMP program has been enabled by the continuous support of partners in both Canada and the United States, including federal, provincial, and state governments, non-governmental organizations, and individuals. In particular, funding received under the United States' 1989 *North American Wetlands Conservation Act* has been integral to the success and longevity of the Canadian program.

Published in 2013

National Overview

Over the course of 2012, the Canadian Habitat Joint Ventures secured 138,570 acres (56,077 hectares) and influenced 252,875 additional acres (102,335 hectares). These activities are targeted within each joint venture at the highest priority landscapes that have been identified through the use of long-term monitoring datasets and models. To support these activities, 58,568 acres (23,702 hectares) were enhanced in 2012 through habitat improvements such as restoring wetlands and building nesting structures. Finally, 629,522 acres (254,759 hectares) of previously secured habitat were actively managed in 2012.

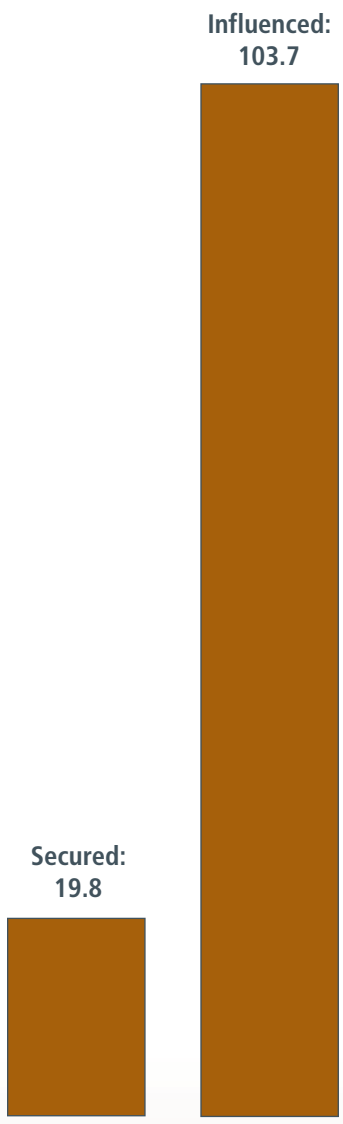
As the Habitat Joint Ventures continue to actively engage at a landscape level, Canada's NAWMP program, led by the North American Wetlands Conservation Council (NAWCC) Canada, has been actively working toward updating national program consistency. At a national level, Canada's NAWMP program has used a system with standardized reporting categories to track NAWMP accomplishments since the early 1990s. While accomplishments have been consistently tracked at a national level, it was recognized that the existing reporting categories could be improved to allow for better reporting of accomplishments against objectives and to align NAWMP implementation planning at the joint venture level. Based on this need, NAWCC (Canada) developed standardized conservation terminology, called Common Language, over the course of 2012.

While Common Language has been developed nationally, the Canadian Habitat Joint Ventures are developing new Implementation Plans. In working toward national program consistency, the Habitat Joint Ventures plan to incorporate Common Language into the new Implementation Plans and synchronize Implementation Plan timelines. These changes to standardize certain elements of the new Habitat Joint Venture Implementation Plans will help to further facilitate the roll-up of program goals and habitat objectives, as well as facilitate future reporting of accomplishments against long-term habitat objectives.

Based on current information, to achieve long-term NAWMP goals in Canada, NAWMP partners need to conserve an additional 20 million acres (8.1 million hectares) over the next 20 years at a cost of $2 billion, and in addition, the present function of the existing habitat base must be retained. Canadian partners will seek to meet these long-term goals in Canada and retain existing habitat through a mixture of traditional and non-traditional programs.

While Canadian NAWMP partners are proud of the significant accomplishments made to date, more remains to be done; continued and expanded support will be critical for continued success.

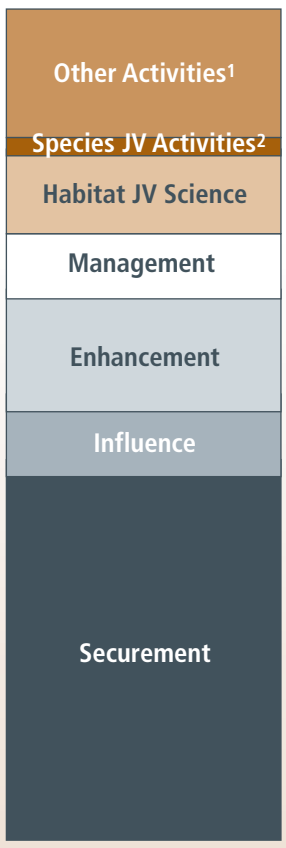
Total NAWMP Accomplishments in Canada 1986-2012 (millions of acres)



Totals include acres from Habitat Joint Ventures and Western Boreal Forest

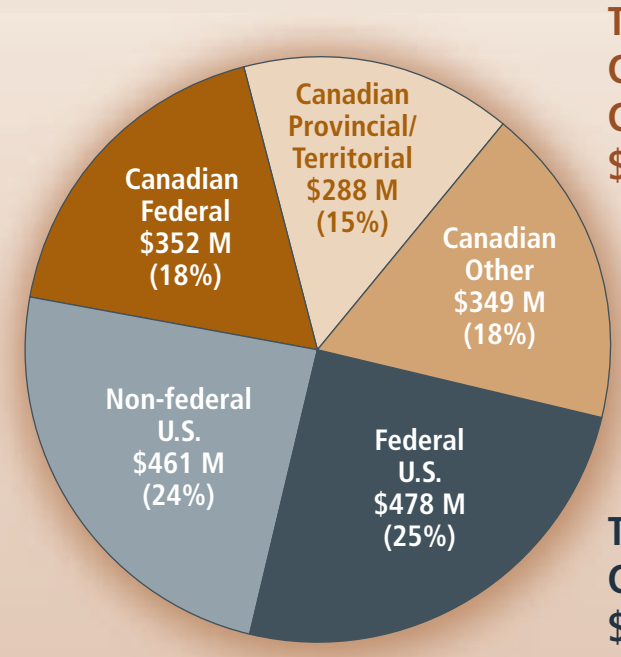
NAWMP Expenditures in Canada by Activity 1986-2012

$1.9 Billion ($CAD)



1 Coordination, communication, policy, crop damage compensation and prevention
2 Banding, surveys & research

Total Contributions ($CAD) in Support of the NAWMP in Canada (1986-2012)



Total Canadian Contributions $989 M (51%)

Total Overall Contributions to Canada $1.93 B

Total U.S. Contributions $939 M (49%)

Terminology used in this report

Management
Activities conducted on secured wetland and/or upland habitats to manage and maintain their carrying capacity for wetland-associated migratory birds and other wildlife.

Enhancement
Actions carried out on secured wetland and/or upland habitats to increase their carrying capacity for wetland-associated migratory birds and other wildlife.

Influence
Direct actions taken by landowners, land managers, or conservation agencies that protect or enhance wetland or associated upland habitats without legal or binding agreements. These direct actions result in applied land-use changes.

Securement
The protection of wetland and/or upland habitat through land title transfer or binding long-term (minimum 10-year) legal agreements with a landowner.

Habitat Joint Ventures

With the publication of the *North American Waterfowl Management Plan 2012: People Conserving Waterfowl and Wetlands*, the NAWMP has renewed its vision. While waterfowl management remains its foundation, the NAWMP 2012 has given greater recognition to the ecological services provided by wetlands.

Through their programmatic approach, the Canadian Habitat Joint Ventures target high-value landscapes for waterfowl populations. The majority of these landscape features are wetlands, which also preserve biodiversity by providing a productive habitat, food supply, and protection for wetland-dependent species. Wetlands are used not only by waterfowl, but by species in all four pillar groups of migratory birds—landbirds, shorebirds, waterbirds, and waterfowl—identified by the North American Bird Conservation Initiative. Wetlands are also important habitat for numerous species of mammals, reptiles, amphibians, insects, and plants. In fact, approximately one-third of species assessed by the Committee on the Status of Endangered Wildlife in Canada live in or near wetlands.

In addition to providing habitat to wetland-dependent species, wetlands provide many other critical functions that benefit society, functions like maintaining water quality, regulating water quantity, and storing carbon.

Wetlands are integral components of river and stream networks, helping improve the quality of surface waters by acting as nature's "kidneys" to filter and absorb contaminants. Scientific studies report that Canadian wetlands can retain or remove up to 70 percent of the sediments, 90 percent of the bacteria, and almost all of the pesticides that enter them.[1] This essential filtering function helps improve the health and wellbeing of Canadians, as well as wildlife.

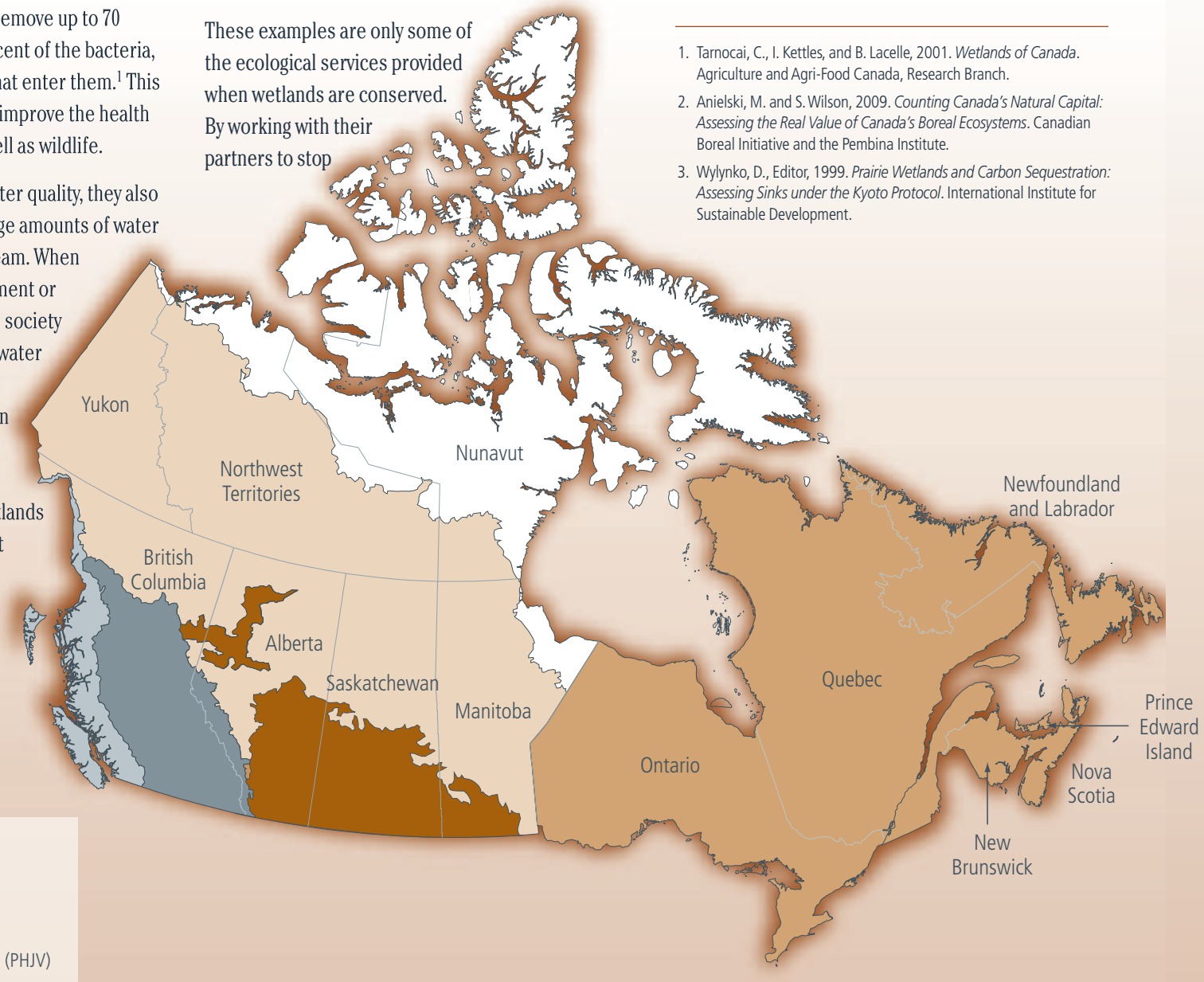
Not only do wetlands maintain water quality, they also regulate water flow by storing large amounts of water to help control flooding downstream. When wetlands are lost due to development or other threats, the risk and cost to society from floods and associated floodwater damage increase significantly. For example, in 2009, the Canadian Boreal Initiative and the Pembina Institute found that the flood control and filtering values of wetlands and peatlands in the boreal forest alone exceed $100 billion.[2]

Wetland in southern Ontario.

Environment Canada

In addition to improving water quality and quantity, wetlands are sinks for atmospheric carbon dioxide (CO_2). Wetlands store CO_2 both over the long term in sediments and over the short term in vegetation and dissolved in water; in fact, wetlands contain 14 percent of the world's terrestrial carbon.[3] Stopping further draining or alteration of wetlands prevents the release of CO_2, and restoring lost wetlands returns sinks to the carbon cycle.

These examples are only some of the ecological services provided when wetlands are conserved. By working with their partners to stop further wetland loss and restore lost wetlands, the four Canadian Habitat Joint Ventures are protecting numerous wetland-associated ecological services that go beyond simply sustaining waterfowl populations to providing numerous benefits to society.



1. Tarnocai, C., I. Kettles, and B. Lacelle, 2001. *Wetlands of Canada*. Agriculture and Agri-Food Canada, Research Branch.
2. Anielski, M. and S. Wilson, 2009. *Counting Canada's Natural Capital: Assessing the Real Value of Canada's Boreal Ecosystems*. Canadian Boreal Initiative and the Pembina Institute.
3. Wylynko, D., Editor, 1999. *Prairie Wetlands and Carbon Sequestration: Assessing Sinks under the Kyoto Protocol*. International Institute for Sustainable Development.

Snow Geese on a tidal marsh in the Fraser River estuary.
Ducks Unlimited Canada

The Grauer family property purchased by Ducks Unlimited Canada and the City of Richmond.
Ducks Unlimited Canada

Pacific Coast Joint Venture

www.pcjv.org

More than 440 ecologically important estuaries occur in the Canadian portion of the international Pacific Coast Joint Venture (PCJV). These estuaries contain tidal wetlands and floodplains that provide habitat and food for hundreds of thousands of migrating and overwintering waterfowl. A significant part of the PCJV activities are therefore focused on securing, conserving, and enhancing these estuaries and their habitats. In 2012, the PCJV and its partners were involved in two significant wetland projects in the Fraser River estuary and in other initiatives designed to better understand coastal waterbird populations.

Acquiring tidal wetlands

In March 2012, Ducks Unlimited Canada (DUC) and the City of Richmond, British Columbia (B.C.), announced their joint purchase of 126 acres (51 hectares) of land along Sturgeon Banks in the Fraser River estuary. The property had been owned by the Grauer family for several generations and was the largest remaining privately owned tidal wetland in the area. The purchase, one-third by DUC and two-thirds by the City of Richmond, was enabled by the Grauer family's participation in Environment Canada's Ecological Gifts Program.

Sturgeon Banks, along the western shore of Lulu Island in the Fraser River estuary, consists of shoreline marshes and mudflats. These tidal wetlands represent a key stopover area for migratory birds along the Pacific Flyway. Each year, over one million migrating birds use the area, as well as thousands of overwintering waterfowl such as Trumpeter and Tundra Swans, Lesser Snow Goose, American Wigeon, Northern Pintail, Great Blue Heron, and Western Sandpiper. Sturgeon Banks is one part of conservation holdings that cover most of the lower Fraser River estuary. With this area secured, migrating and overwintering birds can now rely on the feeding and loafing areas it provides. Also using Sturgeon Banks are fish, including the five species of Pacific salmon and at least 27 non-salmonid species.

The key partners that organized and coordinated the application were Metro Vancouver, the Corporation of Delta, the Province of B.C., and Environment Canada's Canadian Wildlife Service. Many conservation organizations also contributed to securing the Ramsar designation, including the PCJV's newest partner, Bird Studies Canada.

The City of Richmond will manage the newly acquired area as a public park for education and passive recreation and will work with DUC to preserve and enhance the area.

Designation of Ramsar Wetland of International Importance

In September 2012, the Ramsar Secretariat announced the newly created Fraser River Delta Ramsar Site, which encompasses Burns Bog, Sturgeon Banks Wildlife Management Area (WMA), South Arm Marshes WMA, Boundary Bay WMA, Serpentine WMA, and the former Alasken Ramsar site (1,448 acres; 586 hectares; designated in 1982). The extension to create the Fraser River delta site increases the area by 35 times to 51,106 acres (20,682 hectares). The site is designated as a Ramsar Wetland of International Importance, the highest designation for wetland recognition. The Ramsar Convention is "an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources," and has been designating wetlands since 1971 (*www.ramsar.org*).

The key partners that organized and coordinated the application were Metro Vancouver, the Corporation of Delta, the Province of B.C., and Environment Canada's Canadian Wildlife Service. Many conservation organizations also contributed to securing the Ramsar designation, including the PCJV's newest partner, Bird Studies Canada (BSC). BSC coordinates wintering waterbird surveys done by volunteers, who, since 1999, have collected monthly waterbird abundance data at coastal sites throughout B.C., including at Sturgeon Banks and Boundary Bay.

Using Coastal Waterbird Survey data, BSC was able to demonstrate that both of these locations met the Ramsar criterion of regularly supporting 20,000 or more waterbirds. In addition, 18 bird species in these areas met another Ramsar criterion, that a designated wetland must regularly support at least one percent of the individuals in a population of one species or subspecies of waterbird. The birds meeting the latter criterion are Red-throated Loon, Red-necked Grebe, Western Grebe, Double-crested Cormorant, Great Blue Heron, Trumpeter Swan, Brant, Snow Goose, American Wigeon, Northern Pintail, Greater Scaup, Surf Scoter, White-winged Scoter, Dunlin, Black-bellied Plover, Mew Gull, Thayer's Gull, and Glaucous-winged Gull.

Serpentine Marsh Wildlife Management Area looking west toward Boundary Bay Wildlife Management Area.
Ducks Unlimited Canada

The Fraser River delta, B.C.'s largest estuary, has the highest density of overwintering waterfowl, shorebirds, and raptors in all of Canada. The Fraser River Delta Ramsar Site covers nearly 40 percent of all intertidal wetland habitats along B.C.'s coast. These intertidal wetlands are flooded for a portion of the tidal cycle and include important estuarine habitats such as eelgrass beds, salt marshes, and mudflats. The new Ramsar site represents a diversity of habitats that the PCJV partners have been working to protect since the joint venture began in 1991. In addition, PCJV partners have completed tidal marsh restoration, freshwater marsh enhancement, and agricultural land improvements at multiple sites within the Ramsar site area.

Surveying coastal waterbirds

Bird Studies Canada (BSC) implements its Coastal Waterbird Survey as a citizen science, long-term monitoring program to assess wintering waterbird populations in coastal and inshore marine habitats. In 2012, BSC published population trend results from the first 12 years of the survey, 1999–2011. The volunteers who collect the data—more than 550 volunteers over the years—make monthly counts of waterbird species during the non-breeding period at more than 200 sites within the Strait of Georgia, between Vancouver Island and mainland B.C. The results showed that 32 bird species had stable populations over the 12-year period (i.e., no statistically significant trend was found), 22 species had statistically significant declining populations, and 3 species (Pigeon Guillemot, Northern Shoveler, and Canada Goose) had statistically significant increasing populations. The increase in Canada Geese may be cause for concern, because abundant flocks of this species can cause grazing and trampling damage and increased nitrogen inputs to the soil and water.

Among the species showing a declining trend were several piscivores (fish-eaters), including Western and Horned Grebes, Common, Red-throated and Pacific Loons, and Rhinoceros Auklet; several sea ducks (Black and White-winged Scoters, Long-tailed Duck, Barrow's Goldeneye, and Harlequin Duck); two shorebirds (Dunlin and Surfbird); and Great Blue Heron. The waterbirds and their habitats within the Strait of Georgia, and in the wider Salish Sea, face numerous pressures, so understanding the factors underlying population changes is challenging.

BSC will continue its surveys and is also involved in other initiatives focusing on some of these species. For example, an initiative encompassing the entire Salish Sea intends to bring together different waterfowl population datasets from Washington and B.C. to better understand region-wide trends and common factors that may be influencing population changes. A second initiative, the international Migratory Shorebird Project, is focusing on Dunlin and Western Sandpiper over a large area—from Alaska to Peru—in an effort to guide shorebird conservation and wetland management.

Trumpeter Swans.
Catherine Jardine,
Bird Studies Canada

The Grauer lands along the western shore of Lulu Island.
Dan Buffett,
Ducks Unlimited Canada

The PCJV's work in 2012 has highlighted the importance of collaborative efforts in achieving the NAWMP's vision and goals. The projects profiled here have involved a range of players, every one significant, including individual landowners, citizen scientists, conservation organizations, and all levels of government. Without this type of cooperation, the task of sustaining abundant waterfowl populations and habitats would be impossible.

For more information, contact Tasha Sargent, Pacific Coast Joint Venture Coordinator, (604) 350-1903, tasha.sargent@ec.gc.ca.

Contributions ($CAD)*

	2012	Total (1986-2012)
Total	6,510,171	196,603,157

Accomplishments (Acres)**

	2012***	Total (1986-2012)
Secured	23,993	127,057
Enhanced	119	91,602
Managed	24,859	119,326
Influenced	11,829	3,890,183

* Contributions include U.S. federal, U.S. non-federal, Canadian, and other countries.

** Secured, enhanced, and managed acres are not additive. Acres are first secured, may then be enhanced, and are subsequently placed under management. Influenced acres are mutually exclusive of secured, enhanced, and managed acres.

*** 2012 acres reported correspond to period acres.

DID YOU KNOW?

Scope: In B.C., the PCJV includes 54 million acres (21.9 million hectares) of landscape, 113.2 million acres (45.8 million hectares) of seascape, and 19,000 miles (30,285 km) of shoreline. The PCJV is an international joint venture that includes portions of B.C., Alaska, Washington, Oregon, California, and Hawaii and covers Bird Conservation Region 5. The PCJV falls within the North Pacific Landscape Conservation Cooperative.

Major Habitat Types: The B.C. coast is a complex of inlets, bays, islands, straits, and fjords rising to a diversity of near-shore, intertidal, and forested habitats. The coastline has over 440 estuaries, which contain tidal wetlands and adjacent floodplain habitats. Generally, intertidal areas are provincial Crown lands, but many floodplains are privately owned and often highly modified for agricultural and other human uses. These modified landscapes can provide significant habitat and food supply for migrating and wintering waterfowl.

Key Waterfowl Species: Over 1.2 million waterfowl winter along B.C.'s coastline and another 400,000 in its estuaries. Key species include the Wrangel Island Snow Goose (nearly half of the population) and the Pacific Coast's Trumpeter Swan (half of the population), American Wigeon, Cackling Goose, and the Western High Arctic Brant.

Volunteers conducting a Coastal Waterbird Survey at the Tofino mudflats.
Karen Barry, Bird Studies Canada

Horne Lake on the Twin Lakes property.

Graham Osborne

Lakeshore wetlands adjacent to the Lot 48 property, with Columbia Lake in the background.

Nature Conservancy of Canada

Canadian Intermountain Joint Venture

www.cijv.org

The Canadian Intermountain Joint Venture (CIJV) contains a tremendously diverse array of habitat types, including desert, grasslands, shrub-steppe, riparian, wetlands, dry and moist coniferous forests, and alpine tundra. The most productive wetlands occur in fertile floodplains in valley bottoms and in grassland plateaus at mid and low elevations. These same areas experience significant pressure from development and other human land uses. Therefore, the CIJV works closely with landowners, local governments, and other partners to achieve effective conservation for all bird species in these particular habitats. In 2012, the CIJV partners were involved in both land acquisition and restoration projects.

DID YOU KNOW?

Scope: The CIJV comprises an area of 123.5 million acres (50 million hectares) in the central/southern interior of B.C. and the eastern rocky mountain portion of Alberta, and covers Bird Conservation Regions 9 & 10. The CIJV falls within the United States Fish & Wildlife Service's Great Northern Landscape Conservation Cooperative.

Major Habitat Types: The CIJV encompasses a diverse landscape from valley bottom to mountain top: grasslands, dry and moist coniferous forests, riparian areas and wetlands, alpine tundra, and even pocket desert. Climate change and greater human pressure on water sources are increasing the importance of wetlands in maintaining biological diversity, particularly in semi-arid landscapes.

Key Waterfowl Species: Twenty-four waterfowl species breed in the CIJV with an estimated population of 1.45 million birds, representing 70% of B.C.'s and roughly 4% of Canada's breeding waterfowl population. The CIJV supports 20–25% of the world's breeding population of Barrow's Goldeneye, 1–2% of the continental population of Mallard, over 15% of the continental breeding population of Hooded Merganser, and 5% of the continental breeding population of Ruddy Duck.

Conserving habitat in the South Okanagan

The Nature Trust of B.C. (TNT) acquired the 2,006-acre (812-hectare) Twin Lakes property in the White Lake Basin of British Columbia's (B.C.) South Okanagan region. Partners in the project were the B.C. Conservation Foundation, Habitat Conservation Trust Foundation, B.C. Ministry of Transportation and Infrastructure, individual donors, and the Government of Canada through the Natural Areas Conservation Program which is administered by the Nature Conservancy of Canada.

The property includes grassland, sagebrush shrub-steppe, dry forest, open water, wetland, and riparian habitats. Sensitive Ecosystem Inventory mapping identifies 54 acres (22 hectares) of riparian, 30 acres (12 hectares) of wetland, 5 acres (2 hectares) of alkaline wetland, and 5 acres (2 hectares) of seasonally flooded agricultural field on the property, as well as 74 acres (30 hectares) of lake, which is classed as "non-sensitive" habitat and is additional to the 2,006 acres (812 hectares) of private land on the Twin Lakes property.

The land acquisition protects habitat in the Ponderosa Pine and Interior Douglas-fir biogeoclimatic zones, both of which are considered of conservation concern, and will benefit at least eight species

American Coot.

Catherine Jardine, Bird Studies Canada

protected under the federal *Species At Risk Act* and known to occur on the property. In addition, the Twin Lakes property adds to an important network of wildlife corridors in the White Lake Basin, since TNT manages adjacent properties and rangelands.

Numerous waterfowl, other wetland-associated birds, and migratory birds occur in the White Lake Basin, including American Wigeon, Hooded Merganser, Surf Scoter, American White Pelican, Horned Grebe, Killdeer, Long-billed Curlew, American Coot, and Sandhill Crane.

Protecting land adjacent to Columbia Lake

The Nature Conservancy of Canada (NCC) obtained the last remaining piece of private property on the east side of Columbia Lake in southeastern B.C. The 315-acre (87-hectare) property, known as Lot 48, is bordered by Columbia Lake Provincial Park, the Columbia Wetlands Wildlife Management Area, and the East Side Columbia Lake Wildlife Management Area. Together, these areas and the Lot 48 property create a contiguous network of protected land on the eastern shore of Columbia Lake.

Lot 48 had been zoned for development, so by securing the land, the NCC and its project partners have conserved this ecologically and culturally important area. It contains valuable winter range for ungulates, is home to several rare and endangered species, and is sacred land for the Ktunaxa Nation, whose creation story centres in this area.

The newly acquired property contains 44 acres (18 hectares) of uplands bordering lacustrine wetlands that are on Crown (public) land. Although

these wetlands have no protection, NCC ownership of the upland area removes any threats to these wetlands from being altered (e.g., marina development).

The wetlands are used by breeding ducks, including Mallard, Barrow's Goldeneye, Bufflehead, and Lesser Scaup, and by other wetland bird species, such as Red-winged Blackbird, Great Blue Heron, Spotted Sandpiper, Common Yellowthroat, and Song Sparrow. This use is primarily during the breeding period, for both brood rearing and feeding. The wetlands are hunted over by Bald Eagle, Belted Kingfisher, and Osprey, since these wetlands provide rearing habitat for lake fish species. The NCC upland area provides actual nest sites for such species as Mallard, Bufflehead, and Osprey.

Restoring oxbow wetlands

In the early 2000s, Ducks Unlimited Canada (DUC) and NCC partnered to purchase several adjacent bottomland lots, owned by the Quintal family, in the South Okanagan Valley. The Quintal project consists of approximately 25 acres (10 hectares) of wetland and riparian habitats and 135 acres (55 hectares) of upland habitats, all of which are managed by DUC under a lease agreement with NCC.

Past land uses and pressures have significantly changed the biological functioning of the lands. The Okanagan River has been channelized and dyked, cutting it off from its floodplain, and extensive ditching has caused the oxbow wetlands to dry and fill in over the years. Uplands have been converted to introduced forage and have been heavily grazed or hayed.

Floodplain-associated ecosystems serve as important foraging, staging, migration, and breeding habitat for waterfowl and a variety of other wildlife species. However, the quantity and quality of nesting and brood rearing habitat has limited waterfowl use of the Quintal project land. The project is also part of the Osoyoos Oxbows Important Bird Area and supports provincially designated rare and endangered ecosystems (e.g., the Water Birch–Red Osier Dogwood plant community) and associated species at risk (e.g., Yellow-breasted Chat, listed as Endangered under the *Species at Risk Act*).

Consequently, DUC and NCC undertook significant restoration activities in the fall of 2012 with two main goals:

- Restoring the historic natural oxbow system, by conducting 1.5 miles (2.5 km) of shallow ditching and widening and 2.5 acres (1 hectare) of pond excavation.
- Restoring riparian areas, by planting or seeding local natural vegetation and by removing all livestock from the property to allow for recovery of heavily grazed areas.

Future management will focus on the needs of wildlife. Some agricultural uses—haying and possibly limited grazing—will be maintained, primarily to retain habitat values for waterfowl and other wildlife, and also to provide revenue for project management and maintain a working relationship with the local agricultural community. Some public use is allowed where it does not conflict with wildlife habitat. The project will also be monitored annually for biological indicators of ecosystem health and compliance of agricultural operations.

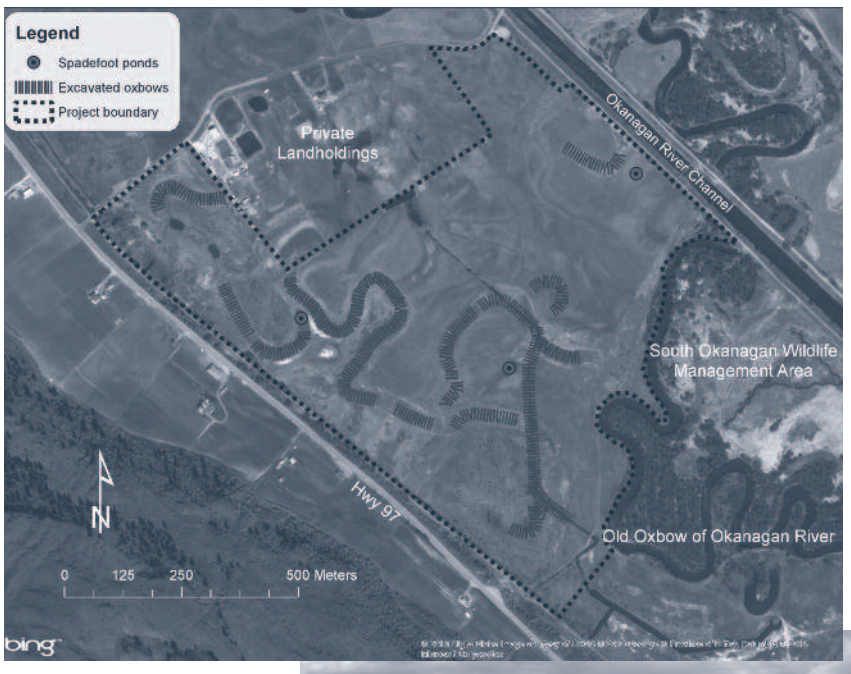
Upgrading aging infrastructure

The 17,000-acre (7,000-hectare) Creston Valley Wildlife Management Area (CVWMA) was established in southeastern B.C. in 1968, and designated a Ramsar Wetland of International Importance in 1994. The CVWMA includes small lakes, marshlands, sloughs, grasslands, and forested lands, with over 300 bird species and many other wildlife species recorded in the area. Creston Valley is the most heavily used route in the interior of B.C. by birds such as Tundra Swans and Greater White-fronted Geese migrating along the Pacific Flyway. Recent aerial surveys (2010 and 2011) in late March have counted between 30,000 and 50,000 waterbirds, half of which were waterfowl, using the CVWMA on a single day. Among ducks, Northern Pintail was particularly notable at this time, with up to 10,000 birds observed on Duck Lake.

In the summer of 2012, DUC began a two-year project to replace and upgrade water control structures and other infrastructure dating to the 1970s. These upgrades will allow for more efficient water management, which is the key to habitat functioning and wildlife use. CVWMA's partnership with the Province of B.C. and DUC has been re-kindled in 2012, so we will see more attention given to the habitat and the interpretive programs.

The unique challenges for conservation in B.C. include the diversity of habitats and the large amount of Crown (public) land (over 94%). Conservation requires partnership, trust, and efficiency, all of which exist within the CIJV. With the CIJV's all-birds mandate, its partners can expand their visions for conservation lands and work together to improve habitat conditions for an increased number of bird and other wildlife species. The CIJV is finalizing an all-birds strategic plan, which will help to further guide partners in their conservation efforts in this unique and beautiful place.

For more information, contact Tasha Sargent, Canadian Intermountain Joint Venture Coordinator, (604) 350-1903, tasha.sargent@ec.gc.ca.



Excavated oxbows on the Quintal project lands.
Bruce Harrison,
Ducks Unlimited Canada

A remnant oxbow wetland on the Quintal project lands.
Ducks Unlimited Canada

Northern Pintail.
Catherine Jardine,
Bird Studies Canada

Contributions ($CAD)*

	2012	Total (1986-2012)
Total	1,512,236	45,180,521

Accomplishments (Acres)**

	2012***	Total (1986-2012)
Secured	9,582	318,333
Enhanced	2,644	158,051
Managed	42,106	610,861
Influenced	0	50,906

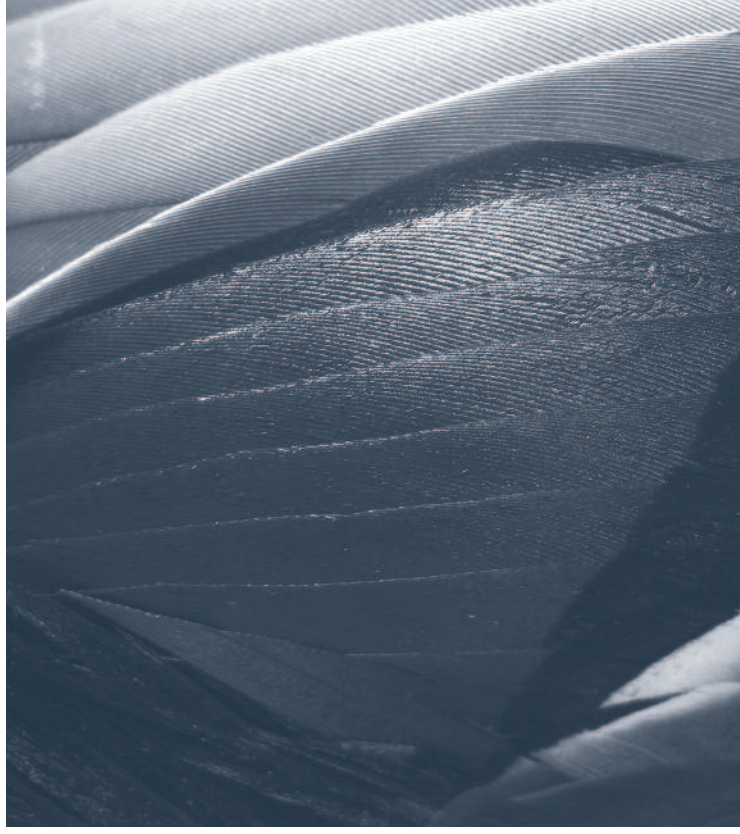
* Contributions include U.S. federal, U.S. non-federal, and Canadian.

** Secured, enhanced, and managed acres are not additive. Acres are first secured, may then be enhanced, and are subsequently placed under management. Influenced acres are mutually exclusive of secured, enhanced, and managed acres.

*** 2012 acres reported correspond to period acres.

The Creston Valley Wildlife Management Area has extensive wetlands.
Ducks Unlimited Canada

Northern Pintails.
Ducks Unlimited Canada



Prairie Habitat Joint Venture

www.phjv.org

Successful protection, restoration, and management of habitat for waterfowl and other birds continue to be the top priority for the Prairie Habitat Joint Venture (PHJV). The PHJV uses several important long-term datasets to feed the Decision Support System for targeting important landscapes, including the PHJV Assessment, the Waterfowl Productivity Model, and the Spatial and Temporal Study.

The PHJV uses a number of important tools, including land use policy and stewardship, to effectively conserve large-scale habitat areas in the Canadian prairies. However, direct habitat securement is still critically important, particularly in high-priority areas under significant threat. PHJV partners have been "chipping away" at these target landscapes to create large blocks of habitat, which are known to be extremely productive for waterfowl. Following are a few recent examples.

In Alberta, a "Golden" partnership secures a priority property

Golden Ranches, a remarkable conservation property in central Alberta, has been secured in perpetuity thanks to the combined efforts of seven conservation agencies.

The 1,400-acre (560-hectare) property lies in the heart of the Cooking Lake Moraine, an ecologically unique landscape and NAWMP priority area. The property includes 5 miles (8 km) of shoreline along Cooking Lake, one of several large lakes in the moraine that provide major staging areas for migrating waterfowl, shorebirds, and waterbirds. The rolling landscape sparkles with pothole wetlands that offer breeding habitat for many waterfowl species. On the uplands, the spruce–aspen forests and grasslands support a diversity of wildlife such as songbirds, raptors, grouse, White-tailed Deer, Mule Deer, Moose, and small mammals, as well as some rare species.

This property also provides a valuable wildlife corridor function at the landscape scale. "Golden Ranches is a large piece of the puzzle for connecting three important wildlife areas. It sits between Elk Island National Park and the Blackfoot Grazing Reserve to the north and the Ministik Bird Sanctuary to the south," notes Alissa Wilson of the Nature Conservancy of Canada (NCC). As well, Golden Ranches helps link several other wildlife areas in the Cooking Lake Moraine, such as Miquelon Lake Provincial Park, the Strathcona Wilderness Centre, and various conservation projects with local landowners.

Increasing land use pressures in the region made it especially important to ensure permanent conservation for Golden Ranches. The property is just 17 miles (27 km) east of Edmonton, Alberta, "in a region that's highly popular for country residential homes and other types of development," says Wilson.

The Golden Ranches securement is a real team effort. "The project is unique in that we brought together seven organizations in partnership to ensure the securement of such an important property," explains Wilson. The partners are NCC, Ducks Unlimited Canada, Alberta Conservation Association, Alberta Fish and Game Association, Beaver Hills Initiative, Edmonton and Area Land Trust, and Strathcona County.

Before the purchase, Golden Ranches was the largest working ranch in Strathcona County. The ranch owners were interested in having the whole ranch conserved, so they allowed the conservation agencies to purchase it parcel by parcel over several years, as the agencies raised the necessary funds. Partner agencies are now working together carrying out such activities as restoring drained wetlands and converting cropped areas back to natural vegetation. The site is open to the public for day use by foot access only. There are no established trails, but it's a great destination for hunting, hiking, and bird watching.

Together, the Golden Ranches partners are sharing their workload, their resources, and their success in advancing habitat conservation in a priority landscape for waterfowl and other wildlife.

In Manitoba, from beans to Blue-winged Teal—an unlikely restoration project provides many benefits

One of Manitoba's newest wetland restorations is an 80-acre (32-hectare) basin that had been drained and cultivated for decades and spent the last year growing a pretty good crop of soybeans.

In spite of that crop, when Scott Beaton of Manitoba Habitat Heritage Corporation approached landowners Jim Harris and Bernie Van Kemenade, the timing was propitious. "Back-to-back wet years and struggles with flooded crops made the option of wetland restoration more appealing," notes Beaton. Incentive funds were available from the provincially funded Wetland Restoration Incentive Program, and additional support came from the East Interlake Conservation District and the Government of Canada's Lake Winnipeg Basin Stewardship Fund.

One of Manitoba's newest restored wetlands spent 2012 growing a crop of soybeans!
Manitoba Habitat Heritage Corporation

One of the many wetlands on the Golden Ranches property.
Ducks Unlimited Canada

Mallard feather.

Ducks Unlimited Canada

Flock of ducks.

Ducks Unlimited Canada

The Touchwood Hills Ranch is dotted with wetlands.

Ducks Unlimited Canada

DID YOU KNOW?

Scope: We have a Texas-sized job! The PHJV encompasses 160 million acres (64 million hectares) in the traditional area of prairie and aspen parklands. Roughly the size of Texas, it includes Alberta, Saskatchewan, Manitoba, and the Peace-Parkland Region of British Columbia and covers Bird Conservation Region 11. The Western Boreal Forest program falls under the purview of the PHJV and includes parts of British Columbia, Alberta, Saskatchewan, Manitoba, the Yukon, and the Northwest Territories.

Major Habitat Types: The PHJV comprises ecoregions of prairie and aspen parkland with wetland habitats ranging from small potholes and sloughs to larger lake, marsh, and bog systems. The Western Boreal Forest encompasses wetland types within the ecoregions of Boreal Plains, Taiga Plains, Taiga Cordillera, and Boreal Cordillera.

Key Waterfowl Species: In the PHJV, notable waterfowl species include Mallard, Gadwall, American Wigeon, Green-winged Teal, Blue-winged Teal, Cinnamon Teal, Northern Shoveler, Northern Pintail, Redhead, Canvasback, Ruddy Duck, Wood Duck, Lesser Scaup, Ring-necked Duck, Common Goldeneye, Bufflehead, Merganser (Common and Red-breasted), and White-winged Scoter. Canada Geese breed in the PHJV prairie and aspen parklands.

Western Boreal Forest species include Mallard, American Wigeon, Green-winged Teal, Blue-winged Teal, Cinnamon Teal, Northern Shoveler, Northern Pintail, Redhead, Canvasback, Ruddy duck, Scaup (Greater and Lesser), Ring-necked Duck, Goldeneye (Common and Barrow's), Bufflehead, Merganser (Common and Red-breasted), Scoter (White-winged and Surf), Long-tailed Duck, Great White-fronted Goose, and Canada Goose.

The project includes perpetual conservation easements purchased from the landowners for the 80 acres (32 hectares) of restored wetland, as well as earthworks and a water control structure required to achieve the restoration. The project was completed in the fall of 2012.

The end result is a restored, semi-permanent wetland basin that will provide breeding habitat for waterfowl and other wetland species. The project will also help ameliorate a local flooding situation for a town located downstream.

This project is found within Manitoba's NAWMP delivery area and will contribute to NAWMP implementation plan objectives. It was funded entirely from Canadian sources.

In Saskatchewan, Touchwood Hills Ranch protects a significant block as dedicated waterfowl habitat

The Touchwood Hills Ranch is a 4,725-acre (1,912-hectare) working ranch located in the heart of the high-priority Touchwood/Beaver Hills landscape area. The ranch is approximately 70 miles (110 km) northeast of Regina, Saskatchewan, and 150 miles (240 km) southeast of Saskatoon, Saskatchewan, in the Rural Municipalities of Touchwood and Kellross. Ducks Unlimited Canada (DUC) first acquired land in this important landscape in 1990 and since then have assembled their ownership of the property through single-quarter purchases. The entire Touchwood Hills Ranch has now been secured and is managed to optimize waterfowl production while allowing limited agricultural use for grazing and haying.

The Touchwood/Beaver Hills landscape area is approximately 2 million acres (800,000 hectares) and is characterized by rolling topography with a high concentration of small freshwater wetlands interspersed across fragmented aspen parkland. The uplands in the area are primarily used for annual crop production and are under continuing pressure for agricultural use.

The ranch acquisition consists of more than 865 wetland basins encompassing 675 acres (275 hectares), as well as 1,992 acres (806 hectares) of aspen parkland and 2,058 acres (833 hectares) of pasture that was recently converted from annual cropland. The acquisition complements 11 parcels of land currently owned by DUC in the area, creating a significant block of dedicated waterfowl production habitat. Breeding pair information indicates this area has a high number of breeding ducks with 40–60 pairs per square mile and 4–6 Northern Pintail pairs per square mile.

The Touchwood Hills Ranch will provide an excellent opportunity for DUC to demonstrate to partners, agriculture stakeholders, local producers, and community groups how certain management practices can be sustainable while at the same time benefiting waterfowl and providing other environmental benefits. Through the integration of various grazing plans on the ranch, DUC will be able to engage agriculture partners who have an interest in livestock and agriculture extension. One of the goals for the ranch is to demonstrate waterfowl-friendly grazing practices that are sustainable and can be adopted by producers and employed on other lands.

In closing, the PHJV area is nearly 160 million acres (64 million hectares) in size, which means we have a Texas-sized job to do! The PHJV's firm commitment to its objectives of stopping further loss of wetlands and grasslands and restoring lost wetlands requires a large complement of conservation tools. Permanent protection of our highest priority habitats is a critical tool.

For more information, contact Deanna Dixon, Prairie Habitat Joint Venture Coordinator, (780) 951-8652, deanna.dixon@ec.gc.ca.

Prairie Habitat Joint Venture Contributions ($CAD)*

	2012	Total (1986-2012)
Total	50,448,817	1,035,992,083

Prairie Habitat Joint Venture Accomplishments (Acres)**

	2012***	Total (1986-2012)
Secured	94,703	6,712,285
Enhanced	53,803	2,569,831
Managed	513,785	7,645,114
Influenced	211,715	1,718,164

Western Boreal Forest Contributions ($CAD)*

	2012	Total (1986-2012)
Total	6,037,628	112,090,495

Western Boreal Forest Accomplishments (Acres)**

	2012***	Total (1986-2012)
Secured	0	11,238,776
Enhanced	0	107
Managed	0	107
Influenced	20,183	37,656,926

* Contributions include U.S. federal, U.S. non-federal, Canadian, and other countries.

** Secured, enhanced, and managed acres are not additive. Acres are first secured, may then be enhanced, and are subsequently placed under management. Influenced acres are mutually exclusive of secured, enhanced, and managed acres.

*** 2012 acres reported correspond to period acres.

Port Joli Harbour, Nova Scotia.
Nature Conservancy of Canada

Craig Smith, Nature Conservancy of Canada program manager in Nova Scotia.
Nature Conservancy of Canada

Eastern Habitat Joint Venture

www.ehjv.ca

Wild for Waterfowl participants, 2012.
Nature Conservancy of Canada

The Eastern Habitat Joint Venture (EHJV) has been actively securing, enhancing, and managing wetland and associated upland habitats throughout the provinces of Ontario, Quebec, New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland and Labrador since 1989. As we chronicled in H*abitat Matters 2011*, the projects undertaken by the joint venture began as First Step NAWMP Projects designed to begin what is now a successful and storied 26-year history of conserving habitat for waterfowl and wetland-dependent species.

But even wildly successful programs "grow up." Not only is the EHJV aiming to become an all-bird joint venture, it is also making use of *all* the tools in its conservation tool box, including the familiar heavy weights—acquisition and restoration—and also the slow, steady mechanisms like policy, stewardship, communication, and management. In this article, we reflect on some activities in maritime EHJV that highlight the continued commitment to, and often less trumpeted, habitat conservation actions of EHJV partners.

Nature Conservancy of Canada and Bird Studies Canada lead a stewardship event

Representatives of the Nature Conservancy of Canada (NCC) and Bird Studies Canada (BSC) and 15 volunteers joined in partnership for coastal bird conservation during the 4th annual Wild for Waterfowl event held on November 18, 2012, near Port Joli Harbour on Nova Scotia's South Shore. This event was initiated in 2009 to build knowledge and engage community members in waterfowl and waterbird monitoring in the Port Joli area with a focus on coastal habitats within three Migratory Bird Sanctuaries (MBS) and the South Shore (Port Joli sector) Important Bird Area (IBA).

The Port Joli IBA was designated through BirdLife International's IBA Program (*www.ibacanada.com*) in the late 1990s because of its significance to migrant and wintering Canada Goose, American Black Duck, and Harlequin Duck and to breeding Piping Plover. Under the federal *Species at Risk Act*, Harlequin Duck is listed as a species of Special Concern and Piping Plover is listed as an Endangered species.

The 2012 Wild for Waterfowl event focused on seven different locations within the IBA and three MBS. A mini waterfowl identification workshop enabled volunteers to learn key bird identification skills and how to collect observations. Following the workshop, participants spent an afternoon conducting bird surveys on over 1,000 acres (400 hectares) of shoreline in Queens and Shelburne Counties, some of which is owned and managed by the NCC through the EHJV.

Together, the participants covered much of the significant coastal habitats within the IBA and MBS boundaries and recorded over 50 bird species, including 233 American Black Ducks (84% were within MBS sites), 2,280 Canada Geese, and 112 Harlequin Ducks. In total, 18 species of waterfowl were observed. The data are shared with conservation partners and the public through *eBird.ca* to help assess waterfowl and waterbird abundance and distribution in late fall and early winter—a period that was previously a monitoring gap.

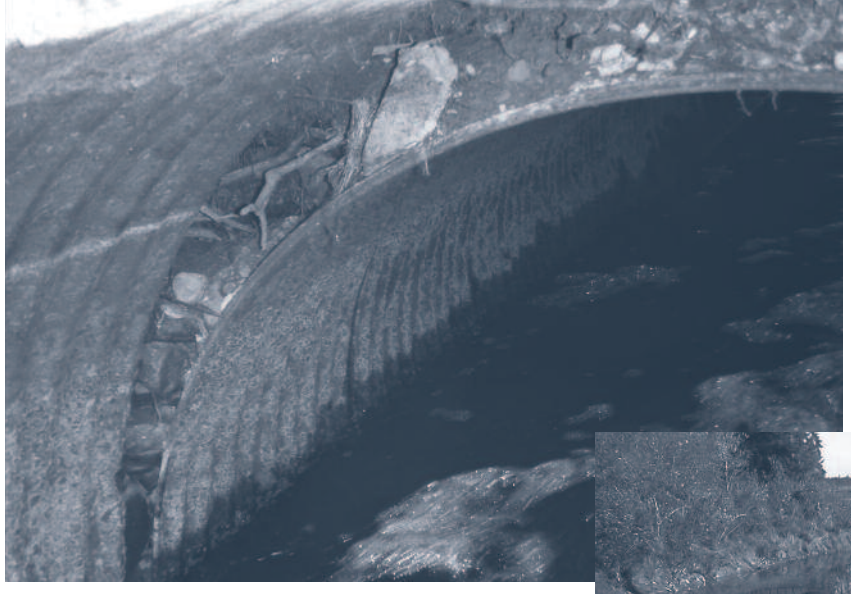
Craig Smith, NCC program manager in Nova Scotia, says "observations from the surveys help conservation groups and Environment Canada determine whether bird life is healthy and diverse and is making use of the coastal inlets and bays of this ecologically rich region." Survey results are shared with Environment Canada's Canadian Wildlife Service to help identify the composition and number of birds in the area and thus the relative effectiveness of the migratory bird sanctuaries at providing habitat to overwintering waterfowl. This information directs the management of the sanctuaries in the area. Sharing data through *eBird.ca* further enhances the accessibility of the data by all partners with an interest in coastal birds.

The 2012 Wild for Waterfowl event capped off another highly successful season of engaging conservation volunteers for both the NCC and BSC in the Atlantic Region. The volunteers who clambered over the rocks of inlets and bays enjoyed one of the most beautiful coastlines in the Maritimes, while helping EHJV partners collect key information about overwintering waterfowl and conservation. The event also raised awareness about the importance of areas that create recreational and economic growth potential in the communities.

Ducks Unlimited Canada (Atlantic): A tale of two projects

In 1960, Ducks Unlimited Canada (DUC) got its "feet wet" in Atlantic Canada with the Williamstown Lake restoration project in New Brunswick. This project was established as a co-operative venture involving the provincial government, local sportsmen, and DUC. In 2012, water levels and flows continued to be managed on 1,560 acres (630 hectares) and provided habitat for waterfowl such as American Black Duck, Ring-necked Duck, and Canada Goose. The project was an early precursor to the EHJV and has been followed in rapid succession by many other restoration projects spanning all the Maritime Provinces.

Often forgotten, after the initial fanfare of a new project subsides, is the need to ensure that the project continues to provide quality habitat for waterfowl and wildlife. This need is achieved by EHJV partners committing to annual maintenance of projects, including spring and fall inspections and a prioritized work plan to maintain and manage the sites.



Fosterville Marsh culvert in need of repair.

Ducks Unlimited Canada

Repairs underway at the Fosterville Marsh project.

Ducks Unlimited Canada

Many wetlands restored, and now managed, by DUC in the EHJV are 25 years and older, and they require new considerations and special measures beyond simply general maintenance. For example:

- Steel used in culverts and concrete structures has reached its life expectancy, so the installations have the potential to leak and/or collapse.
- Earthen dykes naturally slump, leaving them low and prone to breaches during spring freshets and other high-water events.
- Wood providing pools for fish passage in fish ladders rots and needs replacing.

Also, wetland management practices have evolved over time, so new maintenance practices must be adopted to ensure the new management practices are implemented. Two projects in New Brunswick that required significant maintenance action in 2012 were Fosterville Marsh and Belleisle Creek Marsh.

Fosterville Marsh project

Completed in 1984, the Fosterville Marsh project is situated on an inlet of Grand Lake, straddling the border between Weston in Maine and Fosterville in New Brunswick. The project provides 97 acres (39 hectares) of freshwater marsh for waterfowl and also provides spawning grounds for many fish species. The man-made dyke and associated fish ladder now form part of a causeway and public highway providing access to multiple camps along the banks of Grand Lake.

Local camp owners had reported a slump in the dyke that was causing concern. Inspection by DUC revealed that the 5-foot-diameter (1.5-metre) steel culvert had reached its life expectancy and required replacement—a task complicated by the potential need to close a provincial highway and divert the watercourse to create a dry work site.

Fortunately, the level of Grand Lake is regulated by a mill dam on the U.S. side of the watershed, and in the fall of 2012, the mill scheduled a drawdown of the lake. The resulting low tail waters provided a short window in which DUC was able to remove and replace the culvert. With the patience of the camp owners, this major retrofit in an existing, managed marsh was completed with very little impact to the mature wetland project.

Belleisle Creek Marsh project

Also completed in 1984, this project is situated at the head of Belleisle Bay along Belleisle Creek and encompasses 128 acres (52 hectares) of freshwater marsh habitat for waterfowl. As a floodplain marsh, Belleisle Creek Marsh is vulnerable to pressures from the continual ebb and flow of the tide and the scouring of ice and water during the spring freshet. Over the years, the earthen dyke surrounding the project had slumped in places, providing pressure points where the water and ice had been forced to travel. By the spring of 2012, those pressure points had eroded and become breaches, thereby draining the marsh.

DUC's conservation team put a plan in place to raise a major part of the dyke and face a section of it with rock to reduce erosion. In the fall of 2012, DUC created a rock-capped spillway, or low point in the dyke, to facilitate the release of excess water from the marsh during periods of high flow. The project also included creating a turn-around and parking area for school buses that bring students to the DUC Project Webfoot field trip site. Student visits ensure that the Belleisle Creek Marsh project will continue to deliver both conservation and educational benefits into the future.

For more information, contact Patricia Edwards, Eastern Habitat Joint Venture Coordinator, (506) 364-5085, patricia.edwards@ec.gc.ca.

Contributions ($CAD)*

	2012	Total (1986-2012)
Total	22,412,354	455,470,468

Accomplishments (Acres)**

	2012***	Total (1986-2012)
Secured	10,292	1,363,462
Enhanced	2,002	601,251
Managed	48,772	1,325,737
Influenced	9,148	60,368,580

* Contributions include U.S. federal, U.S. non-federal, and Canadian.

** Secured, enhanced, and managed acres are not additive. Acres are first secured, may then be enhanced, and are subsequently placed under management. Influenced acres are mutually exclusive of secured, enhanced, and managed acres.

*** 2012 acres reported correspond to period acres.

Belleisle Creek Marsh.

Ducks Unlimited Canada

Repairs to the dyke at Belleisle Creek Marsh.

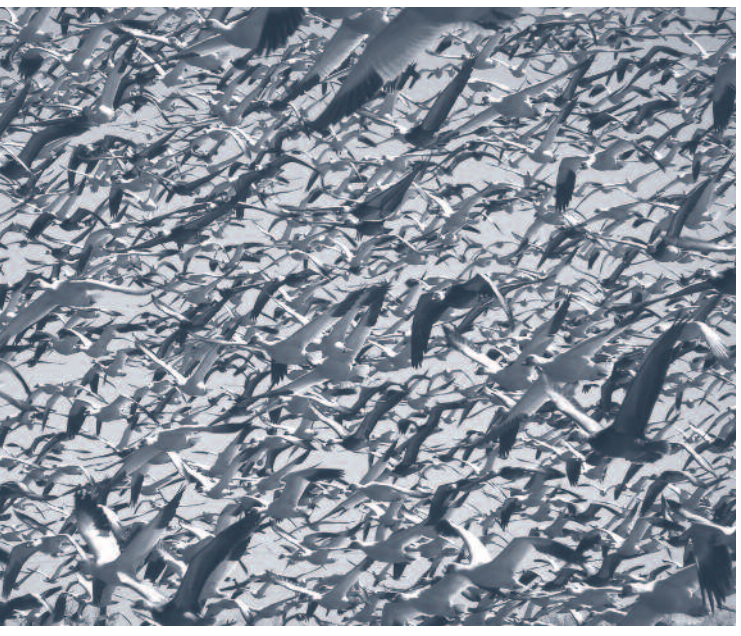
Ducks Unlimited Canada

DID YOU KNOW?

Scope: The EHJV contains 780 million acres (315 million hectares) and spans the six provinces of Ontario, Quebec, New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland and Labrador, encompassing one-third of Canada's landmass. It includes six of twelve Canadian Bird Conservation Regions: 3,7,8,12,13 and 14.

Major Habitat Types: The EHJV supports 30% of Canada's wetlands, including more than 120.8 million acres (48 million hectares) of fresh and tidal wetlands. Important habitats include coastal bays and salt marshes, lakeshore marshes, floodplain wetlands, and boreal forest wetlands.

Key Waterfowl Species: Thirteen priority waterfowl species contribute to a significant portion of the continental populations, and an additional four species are significant provincially. The 13 species include American Black Duck, Mallard, Ring-necked Duck, Common Goldeneye, Common Eider (3 races), Green-winged Teal, and Canada Goose (5 populations). The habitat within the EHJV supports 95% of the continental population of American Black Duck and 80% of the southern race of Common Eider. The Atlantic and North Atlantic populations of Canada Goose are important birds for hunters in the Atlantic Flyway and breed exclusively within the EHJV.



Lesser Snow Geese near Platte River, Nebraska.

Molly Giles

Species Joint Ventures

Species joint ventures are international in scope, spanning North America and including circumpolar countries. These joint ventures focus on critical science needs to inform the management of over 20 species (50+ populations) and their related habitats. Additionally, research directed through the species joint ventures addresses questions for other bird species that share the habitats.

Arctic Goose Joint Venture

www.agjv.ca
www.pcoa.ca
www.gansodelartico.com

The overabundance of light geese (Greater and Lesser Snow Geese and Ross's Geese) and the related habitat damage have been an important focus of the Arctic Goose Joint Venture (AGJV) for well over a decade. The AGJV charged an international Arctic Goose Habitat Working Group with documenting the overabundance of some populations of geese and the extensive Arctic and sub-Arctic habitat damage related to their overabundance. The AGJV has published a series of reports about this issue and in 2012 released the latest report in this series, entitled *Evaluation of Special Management Measures for Midcontinent Lesser Snow Geese and Ross's Geese*.

This report, available on the AGJV website, is the result of extensive work by the international Working Group to document the effects of measures employed since 1999.

Following are the AGJV's responses to a few frequently asked questions about the current status of Lesser Snow Geese and Ross's Geese.

What evidence is there that habitat degradation is a problem that requires reduction of some goose populations?

Answer: The AGJV's 1997 *Arctic Ecosystems in Peril* report provided much evidence that grubbing activities of staging and pre-nesting Lesser Snow Geese had resulted in destruction of about one-third of coastal salt marsh habitat in the Hudson Bay Lowlands, an early successional stage that extends along about 684 miles (1,100 km) of coastline from southern James Bay to the west coast of Hudson Bay and encompasses an area of approximately 133,400 acres (54,000 hectares). An additional one-third of this habitat type was severely degraded by the foraging activities of geese, and the remaining third was intact but heavily grazed during the summer months.

In addition, there was evidence that foraging activities of Lesser Snow Geese had also resulted in damage to some adjacent freshwater habitats, though the extent of damage there had not been quantified at a large scale. Damage to these coastal habitats ultimately resulted in elimination of large portions of coastal salt marsh habitat and changes in soil and hydrological characteristics that essentially led to desertification and loss of biological diversity within this zone of tidal influence. These coastal habitats are recognized worldwide as important staging habitats for millions of shorebirds, waterfowl, and other birds. Preliminary evaluations of more northerly habitats used by the geese have shown evidence of damage to both salt marsh and freshwater habitats in certain areas, but the overall extent of damage has not been

DID YOU KNOW?

Scope: The AGJV spans North America and includes other circumpolar countries. It covers 924 million acres (374 million hectares) and encompasses Bird Conservation Regions 2, 3, 4, 6, 7, and 8.

Species: There are 28 populations among seven species: Greater White-fronted, Emperor, Snow, Ross's, Brant, Cackling, and Canada Geese.

Ross's Goose pair at Queen Maud Gulf Migratory Bird Sanctuary.

Kiel Drake

Snow Geese penned for banding.

Tim Moser

quantified at a large scale. It is expected that the extent of habitat degradation will continue to expand as populations of Lesser Snow Geese and Ross's Geese continue to increase.

How many midcontinent Lesser Snow Geese and Ross's Geese are there?

Answer: There has been some uncertainty about the number of midcontinent Lesser Snow Geese and Ross's Geese, because most surveys used to monitor trends in population size do not include all the geese in the population. Most traditional surveys provide indices of abundance that indicate population trends but do not provide estimates of total population size. However, recent refinement of an old technique (the Lincoln-Peterson estimator) has provided population estimates of between 15 and 25 million adult midcontinent Lesser Snow Geese and between 1.5 and 2.5 million adult Ross's Geese.

The population estimates are derived from a combination of banding data and harvest estimates, and their accuracy depends on having representative data from banded birds and accurate species-specific estimates of harvest. Upper and lower population estimates depend on different assumptions for estimating harvest, and there is uncertainty about which harvest estimates are most accurate. Therefore, it is safe to say that there are at least 15 million adult Lesser Snow Geese and 1.5 million adult Ross's Geese in the midcontinent populations of these species. Regardless of the actual number of birds in each population, all indices indicate that these populations have greatly increased over the past 40–50 years.

Who is responsible for managing Snow Goose and Ross's Goose populations?

Answer: Wildlife management is a shared responsibility of federal, provincial/territorial, and state governments. Federal agencies derive primary responsibility for the conservation of migratory birds from the shared *Migratory Bird Treaty* (or *Migratory Birds Convention Act*, as it is known in Canada). The consequences of overabundant goose populations are an important conservation issue, affecting the long-term sustainability of the overabundant species themselves as well as the other species of migratory birds that they interact with. For this reason, the federal agencies have a significant responsibility to address the issue. At the same time, provincial/territorial and state governments are responsible for conservation of landscapes and other species that are also being negatively affected. This means that all agencies need to work together to address the conservation issue caused by overabundant goose populations.

Are the U.S. Fish and Wildlife Service and Environment Canada's Canadian Wildlife Service planning to implement direct control measures?

Answer: Any consideration of direct control activities will be very controversial and costly and would only be considered if there is a robust and defensible scientific foundation for such activities. Sufficient evidence would be needed that the damage, be it ecological and/or economic, is of such an extent and severity that it compromises other important values or objectives (e.g., conservation objectives for species or landscapes).

At present, the current understanding of the extent of habitat damage is limited mostly to sub-Arctic coastal areas along Hudson Bay and James Bay, where the conservation issue first became obvious. Before making any decisions about next steps, an improved understanding of the availability of suitable staging and nesting habitat is needed, as well as a better understanding of the extent of habitat damage in northern Canada. Ultimately, population objectives represent a compromise between the benefits and costs associated with populations of different sizes. The science base in 1997 strongly supported the need for government intervention; the science base and cost/benefit analyses today would need to be similarly strong before any decision could be taken to progress to a new phase of greater intervention.

The AGJV is currently devoting most of its resources to this high-priority issue of light goose overabundance and the related habitat damage.

For more information, contact Deanna Dixon, Arctic Goose Joint Venture Coordinator, (780) 951-8652, deanna.dixon@ec.gc.ca.

Contributions ($CAD)*

	2012	Total (1986-2012)
Total	1,530,717	39,476,045

* Contributions include U.S. federal, U.S. non-federal, Canadian, and other countries. These contributions do not contain NAWCA funding.

Lesser Snow Geese and Ross's Geese mass at Squaw Creek National Wildlife Refuge in Missouri.

Noppadol Paothong, Missouri Department of Conservation

The boreal forest landscape in central Quebec.

Patrick K. Devers, U.S. Fish and Wildlife Service

The range of American Black Duck.

Reprinted from: Ridgely, R.S., T.F. Allnutt, T. Brooks, D.K. McNicol, D.W. Mehlman, B.E. Young, and J.R. Zook. 2007. Digital Distribution Maps of the Birds of the Western Hemisphere, version 3.0. NatureServe, Arlington, Virginia, USA.

Black Duck Joint Venture

www.blackduckjv.org

Extending from Ontario to Newfoundland and Labrador, the eastern boreal forest of North America covers more than 1 million square miles (2.6 million km^2) and is part of the largest forested region in the world. This vast landscape provides a range of wetland and upland habitats that support the needs of millions of migratory birds including the American Black Duck. Over the last decade, interest in the boreal forest has increased in response to economic development pressures, thus demanding a greater understanding of boreal ecosystems and values.

The provinces of Ontario and Quebec recently committed to developing comprehensive land use plans that protect ecological values of the boreal forest while addressing social and economic interests in the far north. Passed in 2010, Ontario's *Far North Act* includes the objective to protect both ecosystems and culturally important areas by establishing a network of protected areas that encompass at least 87,000 square miles (225,000 km^2), or about 50 percent of the province's far north. Similarly, with its land use planning initiative called *Le Plan Nord*, which also began in 2010, Quebec has committed to protecting 50 percent—approximately 230,000 square miles (600,000 km^2)—of the province's far north for biodiversity and natural heritage. The remainder of these far north areas will be open to economic development. The amount of habitat for migratory birds such as black ducks that could be conserved or lost in these areas will depend on which types of activities occur and where.

The Black Duck Joint Venture (BDJV) was established to provide scientific information to support the conservation of black ducks and is committed to adaptive resource management—learning through our monitoring and research programs to help guide habitat conservation efforts. The sheer scale of the Ontario and Quebec land use planning initiatives, and their potential to influence habitat conservation, underscores the need to ensure that monitoring programs provide current and future data on the distribution and abundance of black ducks and other birds in the far north. Surveys developed to serve the future needs of resource managers will be an important underpinning for effective monitoring of the outcomes of both conservation and development activities in these vast northern landscapes.

Both initiatives present opportunities for the BDJV and its partners to help fill any knowledge gaps and provide scientific information to inform the sustainable development of the eastern boreal forest. In 2012, the BDJV reached out to partners in the Eastern Habitat Joint Venture and the Sea Duck Joint Venture to devise a coordinated communication effort to provide information about the distribution of waterfowl in the boreal region and the importance of key areas to waterfowl throughout their lifecycle. The purpose of this communication effort is to help inform decision makers responsible for the development and implementation of the *Far North Act* and *Le Plan Nord* about key areas that could be considered for protection. The development of communication products to inform these far north land use initiatives will continue into 2013.

For more information about the Far North initiative in Ontario, visit *www.mnr.gov.on.ca/en/Business/FarNorth*.

For more information about *Le Plan Nord* in Quebec, visit *www.plannord.gouv.qc.ca/english*.

For more information about the BDJV, contact Brigitte Collins, Black Duck Joint Venture Coordinator, (613) 949-8264, brigitte.collins@ec.gc.ca.

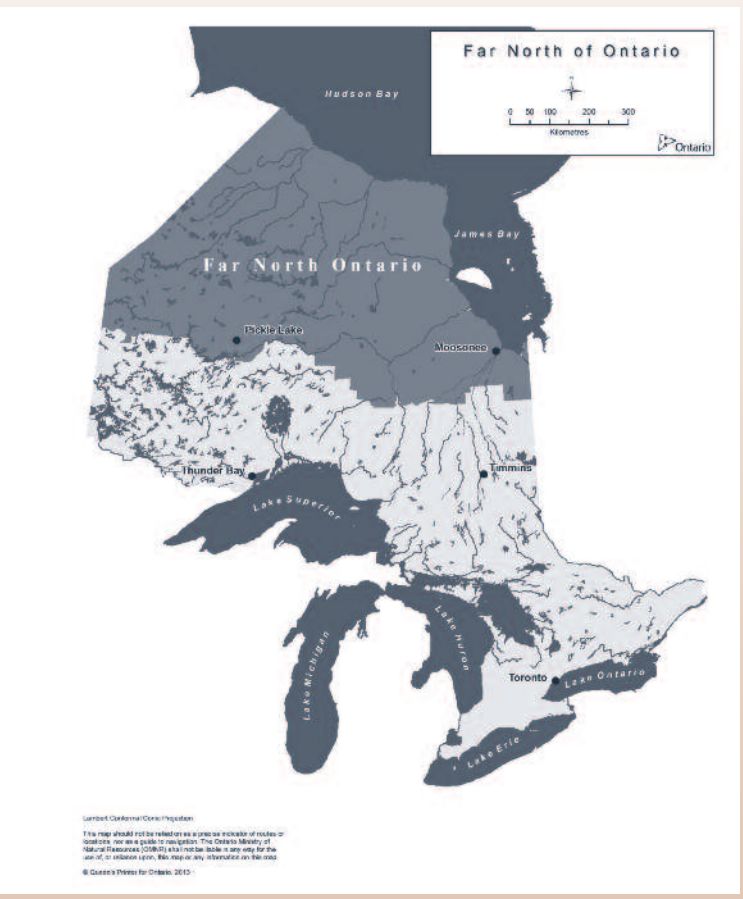
Contributions ($CAD)*

	2012	Total (1986-2012)
Total	670,906	16,418,027

* Contributions include U.S. federal, U.S. non-federal, and Canadian. These contributions do not contain NAWCA funding.

American Black Duck.

D. Faucher



The province of Ontario showing the area covered by the Far North Initiative.

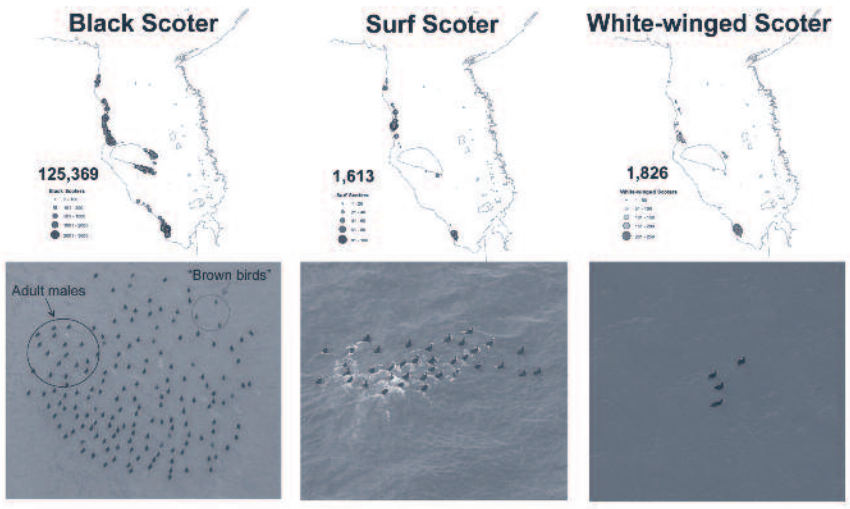
Ontario Ministry of Natural Resources, Far North Branch

DID YOU KNOW?

Scope: The BDJV partners include the U.S. Fish and Wildlife Service, Environment Canada's Canadian Wildlife Service, U.S. Geological Survey Biological Resources Division (USGS-BRD), Atlantic Flyway Council (AFC), Mississippi Flyway Council (MFC), provincial and state conservation agencies, and non-government organizations such as Ducks Unlimited.

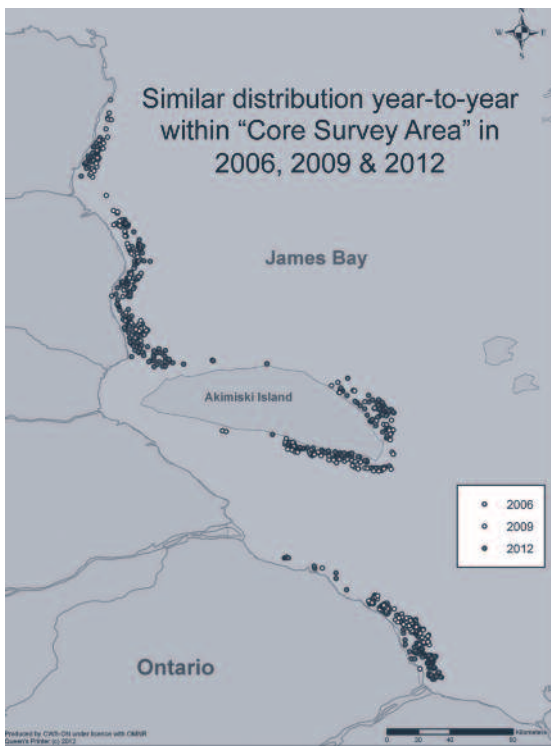
Species: All ducks tend to return in fall and winter to the same marshes that they visited the previous year, but this trait is most pronounced in the American Black Duck. When tidal feeding areas have become frozen in New England, some American Black Ducks have starved rather than migrate farther south to unfamiliar ground!

Major Habitat Types: Saltwater marshes, brackish and freshwater impoundments, riverine and estuary marshes, woodland wetlands, shallow lakes, and boreal bogs.



Abundance and distribution of moulting flocks of three scoter species at James Bay in 2012.

Canadian Wildlife Service and Ontario Ministry of Natural Resources



Distribution of moulting Black Scoter is similar in 2006, 2009, and 2012 within the core survey area in James Bay.

Canadian Wildlife Service and Ontario Ministry of Natural Resources

Sea Duck Joint Venture

www.seaduckjv.org

A review of Sea Duck Joint Venture (SDJV) program priorities was initiated at an SDJV strategic planning session in 2010. The objective of the review was to ensure that a clear link exists between SDJV priorities and conservation management decisions, actions, and evaluation.

Through this exercise, population delineation was noted as the highest priority among information needs. A second set of priority information needs was also identified, including population trends and objectives, harvest estimates and derivation, distribution, habitat availability, threats, and the link between population dynamics and chronic long-term environmental change. The SDJV is working to prioritize these issues and address them within the next Strategic and Implementation Plans.

The 2010 strategic planning session also identified priority species clusters, of which the highest priority cluster includes Long-tailed Ducks, American Common Eider, and the three scoter species (Black, White-winged, and Surf Scoters).

The SDJV Implementation and Strategic Plans, as well as the strategic planning session, identified the eastern population of the Black Scoter (*Melanitta nigra*) as a high conservation priority due to population declines coupled with uncertainty about population size estimates and population trend analysis. To date, few reliable surveys have been established that provide adequate data to effectively monitor trends in abundance and distribution.

Surveys of moulting Black Scoter flocks were undertaken by biologists with Environment Canada's Canadian Wildlife Service (CWS) and the Ontario Ministry of Natural Resources (OMNR) in 1977 and 1991, as well as during SDJV-sponsored studies to develop survey methodologies in 2006 and 2009.

DID YOU KNOW?

Scope: All of Canada and the United States.

Species: Twenty-two recognized populations among 15 sea duck species (tribe Mergini): Common Eider, King Eider, Spectacled Eider, Steller's Eider, Black Scoter, White-winged Scoter, Surf Scoter, Barrow's Goldeneye, Common Goldeneye, Bufflehead, Long-tailed Duck, Harlequin Duck, Common Merganser, Red-breasted Merganser, and Hooded Merganser.

Major Habitat Types: Coastal waters for migration and wintering, boreal forest and tundra for nesting.

This methodology development work had two components. The first was a reconnaissance survey of eastern Hudson and James Bays to determine the distribution of moulting birds to more accurately define the spatial limits of an operational survey. The second component included surveying the moulting flocks along the western James Bay coast. The results of this work have enabled the SDJV to develop standardized survey protocols, which include elements such as seasonal window (late July–early August), altitude, time of day, tide conditions, and equipment. However, recent technological advancements in equipment and a better understanding of Black Scoter ecology via satellite telemetry indicate the need to refine the survey protocols and methodology.

During the summer of 2012, SDJV partners (CWS, OMNR, and the U.S. Fish and Wildlife Service) undertook additional methodology development work to monitor the population trend of Black Scoter using photographic counts of moulting birds gathered in large flocks on James and lower Hudson Bays. Using a digital SLR camera with an image-stabilized, telescopic zoom lens, one observer took multiple, sequential images of flocks, while another observer manually recorded estimated flock size and species. Automated counts of the digital images were validated through a manual count of a subset of the images.

The goals of the 2012 work were (1) to evaluate the benefits of using higher quality camera equipment (e.g., more accurate species, sex, and age determination; improved resolution for computer-assisted counts) and (2) to assess the feasibility of obtaining automated flock counts from digital photos. The results of this survey revealed that, due to annual variability in abundance and distribution of scoter in James and lower Hudson Bays, an operational survey to assess Atlantic population Black Scoters would need to have a broad geographic scope. The key moulting area identified for Black Scoters, and thus a core area for an operational survey, was determined to be about 6 miles (10 km) offshore of western James Bay and Akimiski Island, while eastern James and lower Hudson Bays were low-priority areas.

In 2013, the SDJV will fund the completion of the survey's methodology development phase, including a reconnaissance flight of additional areas along the eastern coastline of Hudson and James Bays, data assessment, and a final project report.

The survey results will help inform conservation of Black Scoter and other sea ducks by providing data needed to determine and monitor population trends and the spatial distribution of birds in James Bay and lower Hudson Bay. The SDJV also hopes that this survey will be suitable for use as an index to monitor trends in the Atlantic population of Black Scoter as the joint venture shifts the survey from a developmental to an operational phase.

For more information, contact Patricia Edwards, Sea Duck Joint Venture Coordinator, (506) 364-5085, patricia.edwards@ec.gc.ca.

Contributions ($CAD)*

	2012	Total (1986-2012)
Total	436,300	11,205,814

* Contributions include U.S. federal, U.S. non-federal, and Canadian. These contributions do not contain NAWCA funding.

Black Scoter.

Matt Perry (retired), U.S. Geological Survey

Thank you to all our partners who contributed in 2012:

Canada

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We thank all our funding partners and apologize if we have inadvertently omitted any contributors from this list.

North American Wetlands Council (Canada) has recently launched the new website WetlandNetwork Connecting People – Sharing Information (*www.wetlandnetwork.ca*). Available in both official languages of Canada, WetlandNetwork provides a single window into all types of useful wetland information.

Publication également disponible en français.

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Map of Bird Conservation Regions
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Wood Duck.
Catherine Jardine,
Bird Studies Canada