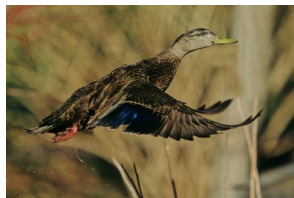


IMPLEMENTATION PLAN 2015 – 2020



Partners Conserving Wetland and
Associated Upland Habitat for Birds

Cover photos (from top to bottom):

- 1 Ontario Wetland/David MacLachlan
- 2 Least Bittern/E. Buck and J. Bensette
- 3 Children taking in the beauty of Montmagny Marsh./Daniel Thibault
- 4 Virginia Rail/T. Buchanan
- 5 Maritime Salt Marsh/Margaret Campbell
- 6 Black Duck/J. Mills

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North Enmore Percival River/Nature Conservancy of Canada



Least Bittern/E. Buck and J. Bensette

EXECUTIVE SUMMARY

Eastern Habitat Joint Venture (EHJV) partners have been delivering wetland habitat conservation projects in Eastern Canada since 1989. As part of the continental North American Waterfowl Management Plan (NAWMP) – an international partnership with Canada, the United States and Mexico to conserve wetland and associated upland habitats for the benefit of waterfowl and other migratory birds – the EHJV is one of 24 joint ventures (21 habitat Joint Ventures and three species Joint Ventures) in Canada and the United States, and dozens of regional partnerships in Mexico.

The EHJV is North America's largest joint venture and at nearly three million square kilometres, it encompasses one third of Canada's land mass, and two-thirds of the Canadian population reside within its' boundaries. The EHJV includes six provinces (Ontario, Québec, New Brunswick, Nova Scotia, Prince Edward Island and Newfoundland and Labrador), and six North American Bird Conservation Initiative (NABCI) Bird Conservation Regions (BCRs). Since its inception, over 500 million dollars has been invested into EHJV habitat projects to retain or restore 26 million hectares of wetland and associated upland habitat. This corresponds to an area larger than the all of the Great Lakes combined.

North America's largest joint venture and at nearly three million square kilometres, the EHJV encompasses one third of Canada's land mass, and two-thirds of the Canadian population reside within its boundaries.

The EHJV Implementation Plan (Plan) outlines the EHJV partnership approach for fulfilling the vision of achieving: *"Landscapes that support healthy bird populations while providing ecological and economic benefits to society."* It is consistent with the principles, objectives and priorities of NAWMP, and complements other planning documents that are currently available or relevant to conservation planning in the EHJV (e.g., BCR Strategies, species at risk recovery documents). The Plan focuses on wetlands and associated upland habitats and waterfowl species; other bird groups are discussed where information is available. The remaining priority habitats and species will be added in subsequent versions of the document. The timeframe for the Plan is January 1, 2015 to January 1, 2020.

Over 30 per cent of the EHJV is composed of wetlands, including more than 48 million hectares of fresh and tidal wetlands. Important habitats include coastal bays and salt marshes, lakeshore marshes, floodplain wetlands and boreal forest wetlands. The EHJV's wetlands are threatened by habitat loss, degradation and conversion and these threats are exacerbated by climate change. In some EHJV regions, the lack of available information on the numbers and sizes of wetlands is a limiting factor in assessing a true picture of habitat abundance and productivity.

The EHJV Programs are directed at on-the-ground initiatives, such as habitat retention and habitat restoration that benefit waterfowl. These programs focus on securing and restoring key habitats at high risk of loss or degradation or that contribute to habitat connectivity. The EHJV has set a preliminary 5-year habitat objective to retain and restore 71,266 hectares of wetland and associated upland habitats. The 5-year cost associated with this objective is estimated to be \$63,525,425. In addition to securing and restoring key habitats, the EHJV will also focus on management of properties that have been secured during the first 26 years of the EHJV, and on the restoration of existing sites to maximize their capacity to continue to support waterfowl and biodiversity values. The estimated 5-year cost associated with the management of these 458,482 hectares of habitat is \$11,038,500.

Other EHJV Programs include stewardship initiatives with landowners to modify land use for the benefit of wetlands and waterfowl, and influencing governmental legislation, including policies and Acts, for the benefit of wetland conservation, restoration and management. These less expensive and broader activities are a cost effective mechanism for conserving waterfowl populations at the broader EHJV scale. The 5-year cost estimate to deliver these EHJV programs is \$26,167,295 and would influence 17,750 hectares.

The EHJV has 13 priority waterfowl species that were selected in accordance with NAWMP continental priorities and the significance of the role of EHJV wetlands in maintaining continental populations. The EHJV goal for waterfowl is to maintain the current breeding population at 1.5 million indicated breeding pairs (IBP) for all priority species combined. The population objective goal for American Black Duck, the cornerstone species of the EHJV, is set at 363,000 IBP, which is slightly higher than the NAWMP long-term average from 1990-2014. The population objectives for other wetland species and associated upland migratory and non-migratory bird species of high conservation concern are aligned with those in BCR Strategies, species at risk recovery plans and other bird group conservation plans.

The EHJV is well positioned, particularly regarding all-bird and all-habitat implementation, as it moves toward meeting the 2020 goals identified in this document.

The EHJV is well positioned, particularly regarding all-bird and all-habitat implementation, as it moves toward meeting the 2020 goals identified in this

document. The Plan represents the starting point for the EHJV to move towards all-bird implementation. As a next step, the EHJV will use the Plan to develop a multi-partner approach for delivering priority actions across the EHJV landscape, which will include the need to find new additive funding for non-waterfowl bird conservation work. The Plan is intended to be reviewed and updated at 5-year intervals.

Children taking in the beauty of Montmagny Marsh./Daniel Thibault

PREFACE (SCOPE AND FORMAT)

The EHJV Implementation Plan (Plan) focuses on wetlands and waterfowl and includes planning for other bird groups, such as waterbirds, where information is available. As the transition towards an “all-bird” habitat Joint Venture is completed, the Plan will be updated to address all priority habitats and species.

This Plan meets the “Desired Characteristics for Habitat Joint Venture Partnerships” identified by the North American Waterfowl Management Plan (NAWMP) Plan Committee in its March 2010 Guidance on *NAWMP Joint Venture Progress Reporting and Implementation Plan Endorsement*. The format of the Plan is consistent with the technical expectations outlined in that document.



Great Blue Heron/Ducks Unlimited Canada

1 INTRODUCTION

The Eastern Habitat Joint Venture (EHJV) was created under the North American Waterfowl Management Plan (NAWMP) to conserve high-priority fresh and saltwater coastal regions, major estuarine (river) systems within productive agricultural areas and wetland and associated upland habitats that have significant waterfowl and other bird use. Established in 1989, the EHJV is a partnership of multi-level governmental departments, non-governmental organizations, industry, academia and landowners committed to the protection and restoration of eastern Canada's wetland and associated upland habitats and the migratory and non-migratory bird populations that depend on them ([Appendix 1](#)).

The EHJV ([Figure 1](#)) spans six provinces, encompasses one-third of Canada's landmass and two-thirds of Canada's human population resides within its boundaries. It supports 30 per cent of Canada's wetlands with historic wetland loss occurring primarily along sea and lake coasts (Maritimes and Great Lakes), major river systems, such as the St. Lawrence River, and within productive agriculture systems.

The EHJV has been guided by successive NAWMP planning documents since the original 1986 NAWMP Plan. The most recent of which, the *North American Waterfowl Management Plan 2012: People Conserving Waterfowl and Wetlands*¹, identified the following three goals and objectives:

Goal 1: Abundant and resilient waterfowl populations to support hunting and other uses without imperiling habitat (Bird Populations)

Objective 1: Maintain long-term average populations of breeding ducks (1990-2014) in the eastern survey area (ESA) and periodically, 2.7 million or more breeding ducks in the ESA

Goal 2: Wetlands and related habitats sufficient to sustain waterfowl populations at desired levels, while providing places to recreate and ecological services that benefit society (Habitat)

Objective 2: Conserve a habitat system with the capacity to maintain long-term average waterfowl populations, to periodically support abundant populations and to consistently support resource users at the objective levels

1 North American Waterfowl Management Plan, 2012

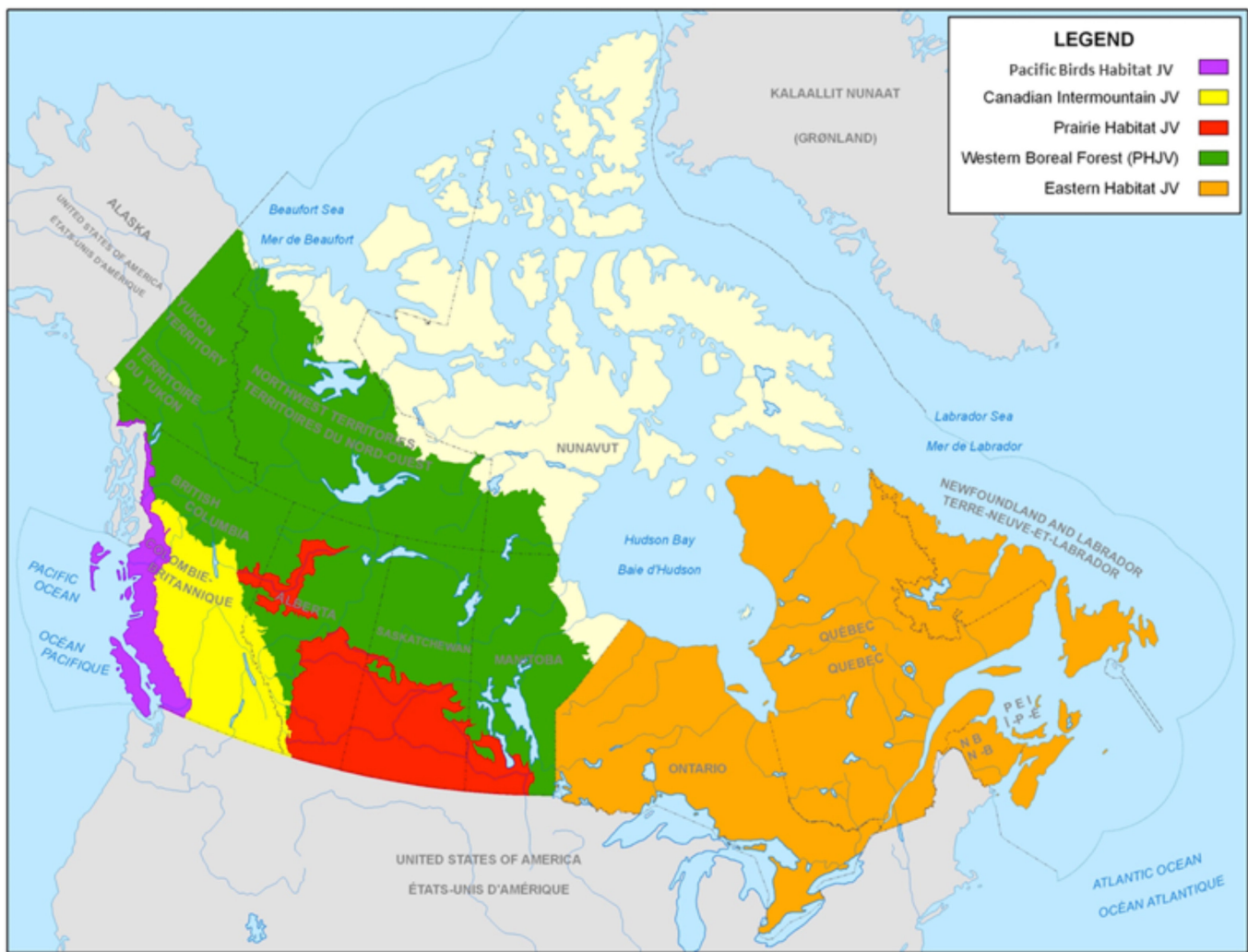


FIGURE 1
Canadian Habitat Joint Ventures, including the Eastern Habitat Joint Venture (gold)

Goal 3: Growing numbers of waterfowl hunters, other conservationists and citizens who enjoy and actively support waterfowl and wetlands conservation (People)

Objective 3: Increase waterfowl conservation support among various constituencies to at least the levels experienced during the last two decades

The EHJV 5-year Implementation Plan, (January 1, 2015 to January 1, 2020) reflects the direction and priorities of the NAWMP 2012 Revision. Waterfowl population and habitat goals for the EHJV were developed by integrating the best available science, expert opinion and habitat information. Waterfowl population goals continue to reflect the desire to achieve or exceed population levels equivalent to the mean of the three highest estimates recorded between 1990 and 2005.

EHJV partners must strive to continually improve the effectiveness of conservation practices.

The Plan assumes that bird populations limited by habitat availability will benefit from the delivery of appropriate conservation actions in eastern Canada. While each conservation action will contribute to the amount of habitat retained or restored, sustaining a habitat-limited population is a function of the cumulative positive impacts of all conservation programs countered by impacts of negative land alterations (e.g., human development). It is likely that habitat degradation for many bird species occurring in the

EHJV area is on-going on the breeding and post-breeding grounds, perhaps only eclipsed in impact by direct habitat loss. Therefore, EHJV partners must strive to continually improve the effectiveness of conservation practices.

EHJV VISION

Landscapes that support stable bird populations while providing ecological and economic benefits to society.

EHJV MISSION

To provide a forum where federal, provincial and non-governmental agencies work collaboratively to coordinate and deliver effective bird habitat conservation in eastern Canada.



Green-winged Teal/Simon Dodsworth

EHJV GOALS (2015-2020)

BIRD POPULATIONS

Waterfowl populations are maintained at long-term average levels (1990-2014) recognizing that annual abundance estimates may fluctuate with wetland and upland habitat conditions.

Goals for other wetland (interior and coastal) and associated upland migratory and non-migratory bird species of high conservation concern are aligned with those species in Bird Conservation Strategies for Bird Conservation Regions, species at risk recovery documents and bird conservation plans.

HABITAT

Maintain the carrying capacity of the habitat in eastern Canada at a level capable of sustaining populations of breeding staging and wintering waterfowl and other migratory and non-migratory birds at long-term average levels (1990-2014).

PEOPLE

Programs and projects are undertaken that support and advocate for growing numbers of waterfowl hunters and other conservationists and citizens that enjoy and actively support the conservation of migratory and non-migratory bird populations that rely on wetlands, and associated uplands and coastal habitat.

EHJV ACCOMPLISHMENTS

Over \$503 million dollars CDN (cash and in-kind) has been invested in EHJV habitat projects between January 1, 1989 and December 31, 2014 ([Table 1](#)). This has resulted in the retention (includes stewardship) or restoration of over 26.7 million hectares of wetland and associated upland habitat ([Table 2](#)).

TABLE 1
EHJV Partner Contributions since Inception
(January 1, 1989-December 31, 2014)^a

Source	Total (1989-2014)
United States	
Federal Government	\$95,095,467
Non-federal Government	\$84,706,151
Canada	
Government	\$175,538,434
Non-profit	\$147,295,272
Unspecified	\$676,078
TOTAL	\$503,310,968

a Source: Canadian National Tracking System, September 6, 2017

Habitat retention refers to those properties acquired by partners or where any partner has retained permanent easement, or reached a short-term (< 10 years) or long-term agreement with the landowner (10-99 years). Stewardship areas are counted as habitat retention and include areas where private landowners (or municipalities, and/or corporations) have voluntarily adopted practises promoted by Joint Venture partners. Habitat restoration may occur in the same year as the habitat being retained or in subsequent years.

TABLE 2
EHJV Partner Conservation Accomplishments since Inception
 (January 1, 1989-December 31, 2014)^a

Initiative	Expenditures	Acres	Hectares
Habitat Retention	\$280,763,768	66,158,375	26,773,344
Short Term (<10yrs)	\$63,008,730	64,773,648	26,212,965
Medium (10-99yrs)	\$4,598,361	332,240	134,453
Permanent	\$211,848,919	10,92,487	442,114
Habitat Restoration	\$82,507,827		244,748
Upland	\$10,092,978	350,035	141,654
Wetland	\$72,414,849	254,714	103,094
Management (habitat assets)	\$40,856,927	1,690,369	684,068
Habitat JV Science	\$18,705,825	-	-
Land & Water Policy	\$10,626,876	-	-
Communications & Education	\$13,362,645	-	-
Conservation Planning	\$45,331,145	-	-
TOTAL^b	\$490,897,255	66,158,375	26,773,344

a Source: Canadian National Tracking System, September 6, 2017

b Habitat hectares retained, restored and managed are not additive. Hectares are first secured, may then be enhanced and are subsequently placed under management.

2 BIOLOGICAL PLANNING

BIOLOGICAL PLANNING UNITS

The EHJV spans six provinces and six Bird Conservation Regions (BCR 3, 7, 8, 12, 13 and 14) ([Figure 2](#)). Due to the nature and size of the EHJV, six planning areas (and reporting units) have been designated on a geographical basis by province. Within each planning area (or province) Joint Venture partners have identified key program areas where activities are concentrated. For more information on how these key program areas were identified please refer to the individual provincial summaries ([Appendix 4](#)).

PRIORITY BIRD SPECIES

Bird species can generally be divided into four groups:

- 1) waterfowl (geese, ducks and swans)
- 2) waterbirds (seabirds, coastal waterbirds, wading birds and marshbirds)
- 3) shorebirds
- 4) landbirds (species that have mainly terrestrial life cycles)

The diversity of habitat types in the EHJV and its geographic location make it an important region for many species of migratory waterfowl and other bird species for breeding, migration and staging or wintering habitat.

PRIORITY SPECIES: WATERFOWL

Eastern Canada is an important waterfowl production area for several continentally significant species. The EHJV supports large numbers of breeding, migrating and wintering waterfowl species that migrate within the Atlantic and Mississippi Flyways. EHJV-wide priority waterfowl species were determined during a science forum held in July 2006. Waterfowl species priorities were established based on factors such as continental conservation concerns, the importance of each region to a species' life cycle and continental distribution, population trend and the threat level of a given species ([Table 3](#)). The American Black Duck is the cornerstone species of the EHJV with 95 per cent of its continental population breeding within the EHJV landscape as does 80 per cent of the continental breeding population of Common Eiders (southern race). In addition to these EHJV priority species, provincial priority species

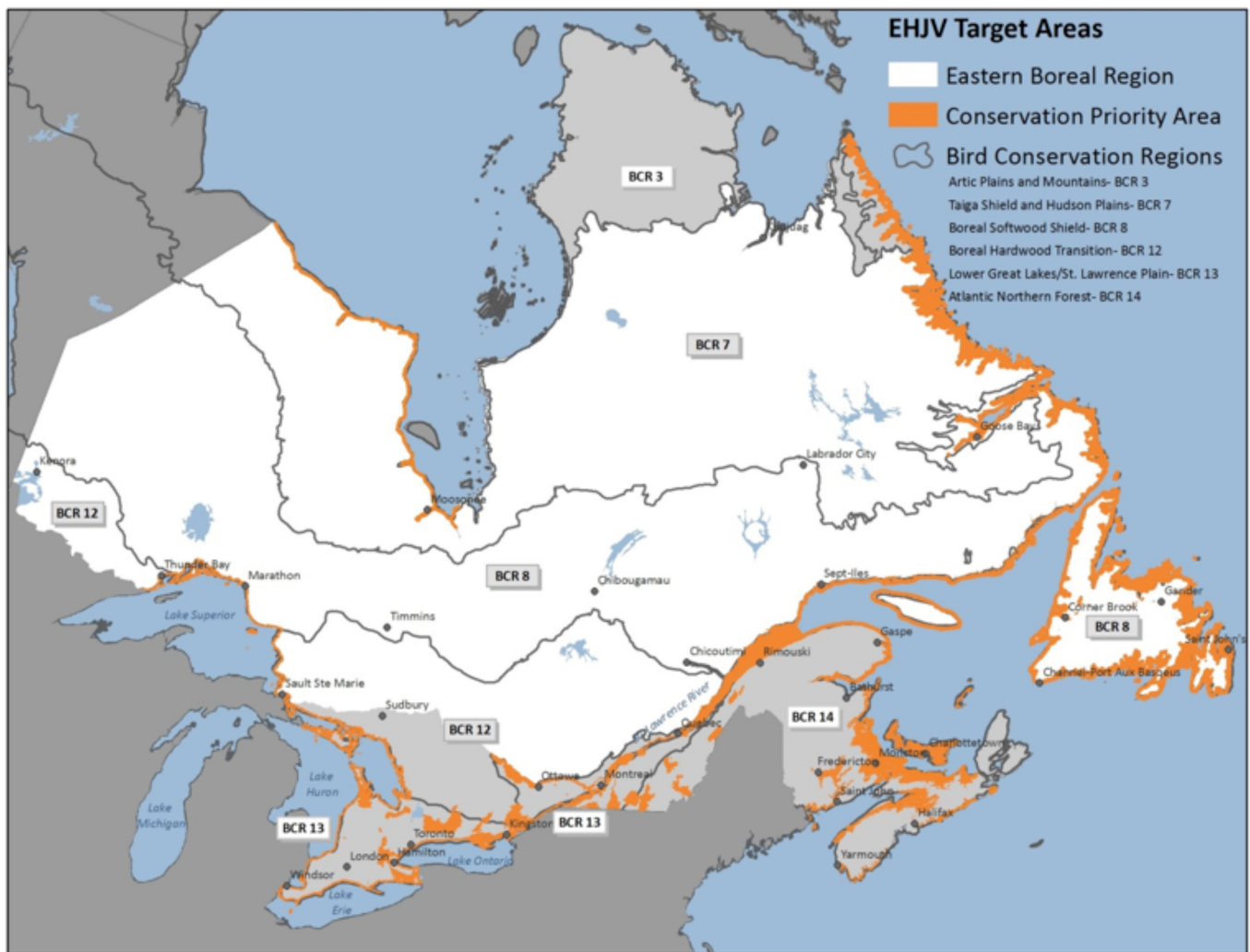


FIGURE 2
EHJV Target Areas including conservation priority areas and BCRs

were also identified through consultation with waterfowl biologists from EHJV partner organizations. These species include Blue-winged Teal, Wood Duck, Common Goldeneye and Hooded Merganser ([Appendix 3](#)). The priority waterfowl species of the EHJV will be updated in the next version of the Plan.

PRIORITY BIRD SPECIES: OTHER BIRDS

The North American Bird Conservation Initiative (NABCI) was formed in 1999 by Canada, Mexico and the United States in response to concern over declining populations of many bird species. To facilitate bird conservation, partners identified Bird Conservation Regions (BCR) to function as regions within which biological planning would take place. There are 12 BCRs in Canada, several which have been divided into sub-regions.

TABLE 3

Priority Waterfowl Species of the EHJV (in alphabetical order) and Seasonal Relevance

Species	Seasonal Relevance		
	Breeding (S)	Staging (S)	Wintering (W)
American Black Duck	X	X	X
Barrow's Goldeneye – eastern population	X		X
Black Scoter	X	X	
Canada Goose – Atlantic population	X	X	
Canada Goose – Mississippi valley population	X		
Canada Goose – North Atlantic population	X	X	X
Canada Goose – Resident population	X	X	
Canada Goose – southern James Bay population	X	X	
Common Eider <i>dresseri</i>	X	X	X
Common Eider <i>borealis</i>	X	X	X
Greater Snow Goose		X	
Green-winged Teal	X	X	
Harlequin Duck – eastern population	X		X
Lesser Scaup		X	X
Long-tailed Duck			X
Mallard	X	X	
Ring-necked Duck	X		
Tundra Swan		X	

In 2008, to fulfil its obligations to NABCI, Environment and Climate Change Canada (ECCC) initiated the development of BCR Conservation Strategies for each of Canada's BCRs. There have been 25 BCR strategies developed, 16 of which occur within the EHJV². There are more conservation strategies than BCRs because a strategy was developed for each BCR within a province and territory. The objective of the BCR Conservation Strategies is to provide a comprehensive overview of the conservation needs divided into four groups; landbirds, shorebirds, waterbirds and waterfowl. Each strategy includes a list of priority bird species and an assessment of the threats impacting the BCR. Within the 16 BCR sub-region strategies for the EHJV, a total of 248 priority species have been identified ([Appendix 2](#)) – of these, 38 are waterfowl and include all 13 EHJV priority species. The main threats to the aforementioned birds have been identified as climate change, habitat loss, degradation or fragmentation, land use (including resource extraction) and for certain species there is limited knowledge of distribution.

The EHJV is committed to playing a lead role in the implementation of all-bird conservation. At this time, subsets of the priority bird species, other than the 13 EHJV priority waterfowl species, have not been identified for the EHJV.

Conservation actions for waterfowl focused on maintaining the quantity and quality of habitat that benefits other wetland-dependent bird species.

² Environment and Climate Change Canada, 2017

Conservation actions for waterfowl focus on maintaining the quantity and quality of habitat that benefit other wetland-dependent bird species. For example, the securement of coastal wetlands is important for many shorebirds, wetland policies will protect wetlands that are critically important to waterbirds and other wildlife species and the implementation of biodiversity best management practises (BMPs) in the agricultural landscape will benefit landbirds. Using tools, such as Open Standards for the Practise of Conservation and Miradi, EHJV partners will work to identify subsets of priority bird species, other than waterfowl. The management of these species and their habitats will be integrated into the next iteration of the Plan.

POPULATION OBJECTIVES

WATERFOWL

Eastern Canada is an important waterfowl production area for many continentally significant species. Since 1990, systematic waterfowl surveys have been conducted across eastern Canada (see Section 5 Monitoring). In 2006, 10-year population objectives were set for the 13 high priority species, using the mean of the top three population counts from the surveys during the period 1996-2005 ([Table 4](#)). The full methodology used to develop the EHJV population objectives is described in an EHJV Technical Report: *Methods used to determine population baselines and objectives for the Eastern Habitat Joint Venture Implementation and Evaluation Plans 2007-2012*³. Most species' objectives were developed to keep populations stable but, in some cases, the objectives require small increases. The population objectives were focused on those waterfowl species for which the EHJV partners are responsible for monitoring, conserving or restoring populations to an acceptable level, and to provide, maintain or manage the habitat upon which those populations depend. Other waterfowl species were not specifically addressed as they were not considered as high a priority for conservation as the species listed in [Table 4](#). The exclusion of these other species should not be interpreted as their being less valuable, rather they are either considered to have robust or acceptable populations, their population trends suggest no further conservation action was required or their presence within the EHJV is peripheral to their major continental distribution. For species that have been included in other conservation programs for which management plans exist, the population objectives set out in those plans have been adopted.

Within the EHJV, the current overall waterfowl population goal is set at 1.5 million indicated breeding bird pairs for EHJV priority species.

The NAWMP 2012 Revision's long term goal of 2.7 million breeding populations of ducks for the ESA, which includes the EHJV, is seen as aspirational for waterfowl management in light of current economic, environmental, land and social pressures⁴. Within the EHJV, the current overall waterfowl population goal is set at 1.5 million indicated breeding bird pairs for EHJV priority species. The 2010-2014 estimates from the ESA indicate that American Black Duck populations remain below the NAWMP 2012 population goals and the EHJV population goal. Current EHJV

conservation actions aim towards achieving this Plan's goal to increase and sustain the population of American Black Ducks to 363,000 indicated breeding pairs in the EHJV ([Table 4](#)). For certain populations of Canada Goose and Snow Goose, for which there are different management concerns, the objectives were to reduce populations considerably. For example, the goal for resident Canada Geese in Ontario is to reduce the population by 50 per cent. The Atlantic and north Atlantic populations of Canada Geese are important birds to hunters in the Atlantic flyway and breed exclusively within the EHJV.

3 Bolduc, F. et al. 2008

4 North American Waterfowl Management Plan, 2014

TABLE 4
EHJV Priority Waterfowl Species and Current Population Objectives
for Breeding Species Contrasted with the Revised NAWMP Objectives and Population
Estimates from the Eastern Waterfowl Survey (EWS)

EHJV Priority Species and Population Objectives for Priority Breeding Waterfowl		NAWMP Revision Goals – Eastern Survey Area within the EHJV	Population Estimates from Eastern Survey Area within the EHJV	Population Estimates from the Eastern Survey Area within the EHJV
Species	Current EHJV Objectives (IBP ^a)	Long-term average (1990-2014) (thousands)	Average Population (1990-2014) ^c (thousands)	Average Population (2010-2014) (thousands)
American Black Duck	363,000	628,000	618,000	589,600
Mallard	232,800	409,000	392,000	425,200
Green-winged Teal	80,400	263,000	256,000	258,400
Ring-necked Duck	184,400	515,000	490,000	527,600
Lesser Scaup	-	-	-	-
Long-tailed Duck	-	-	-	-
Harlequin Duck - eastern population	-	-	-	-
Barrow's Goldeneye – eastern population	-	433,000 ^b	-	-
Black Scoter	-	-	-	-
Common Eider – <i>dresseri</i>	128,500	-	-	-
Common Eider – <i>borealis</i>	25,700	-	-	-
Tundra Swan	-	-	-	-
Greater Snow Goose	-	-	-	-
Canada Goose – Atlantic population	150,000	-	-	-
Canada Goose – North Atlantic Population	69,000	-	-	-
Canada Goose – southern James Bay population	50,000	-	-	-
Canada Goose – Mississippi Valley Population	187,500	-	-	-
Canada Goose – Resident	55,000	-	-	-
TOTAL	1,526,300			

a Indicated Breeding Pairs

b LTA for all Goldeneyes

c ESA population estimates are not available for all species

As part of the 2012 NAWMP Revision⁵, the NAWMP Plan Committee released revised objectives for waterfowl populations in September 2014. Rather than basing waterfowl population objectives on the population benchmarks of the 1970s as per earlier plans, the National Science Support Team (NSST) and NAWMP Plan revision authors developed more contemporary objectives that would be common amongst, and “stepped down” proportionally, to the Joint Ventures. In light of the dynamic nature of waterfowl populations (and the wetland habitats upon which they rely), both the long-term averages (LTA) of individual species and periodic abundance in total numbers, will serve as dual objectives for waterfowl populations. Population objectives for the 13 priority species within the EHJV will be updated for the 2020-2025 Plan.

OTHER BIRDS

Overall, from 1970 to 2010, breeding bird populations in Canada decreased – shorebirds and landbirds showed major declines. There are, however, variations across regions within the EHJV and across species groups within these regions⁶.

Population objectives for other wetland (interior and coastal) species and associated upland migratory and non-migratory bird species of high conservation concern are aligned with those specified in Bird Conservation Strategies for Bird Conservation Regions, species at risk recovery documents and bird group conservation plans.

At this time, population objectives have not been identified for these subsets of the priority bird species for the EHJV. These other species will be handled and integrated into the next Plan as the EHJV moves forward with all-bird conservation objectives.

LIMITING FACTORS

More than 65 per cent of Atlantic Canada’s coastal wetlands have been lost due to human encroachment or influence. More than 45,000 kilometres of stream banks and associated wetland habitat has been altered in EHJV watersheds. European settlement began in the 1600s and by the 1900s had resulted in substantial coastal (marine and riverine) and freshwater wetland loss. The loss was particularly accentuated in agricultural areas adjacent to the highest human density. It is estimated that 70 per cent of historical wetlands in southern Québec (St. Lawrence River Valley)⁷ have been lost to for agricultural and by the 1980s, 68 per cent of wetlands in southern Ontario had been converted to other uses.^{8,9}

The EHJV aims to prevent further loss by applying sound science and a partnership approach at the landscape level in its implementation of conservation programs and projects.

Not all landscape change has been detrimental. Changes in land-use practices have increased the availability of food for many species during the migration and over-wintering period, and open water areas created by human activity have provided increased areas for overwintering.

Historical wetland loss within EHJV boundaries has been significant – up to 90 per cent in some priority areas – and to this day, it continues (Table 5). The EHJV aims to prevent further loss by applying sound science and a partnership approach at the landscape level in its implementation of conservation programs and projects.

⁵ North American Waterfowl Management Plan, 2012

⁶ North American Bird Conservation Initiative Canada, 2012

⁷ Pellerin and Poulin, 2013

⁸ Ducks Unlimited Canada, 2010

⁹ Ontario Ministry of Natural Resources and Forestry, 2016

TABLE 5
Estimated Historical Wetland Loss in Hectares within the EHJV

Province	Historical Estimated Wetland Area (hectares)	Estimated Wetland Loss (hectares)	Estimated Remaining Wetlands Area (hectares)
Southern Ontario	2,026,591	1,465,745	560,844
Southern Québec (St. Lawrence Lowlands)	1,052,183	733,774	318,408
New Brunswick	-	-	391,301
Nova Scotia	-	-	377,522
Prince Edwards Island	-	-	36,118
Newfoundland and Labrador	-	-	12,535,951
Eastern Boreal Forest ^a	-	-	78,175,356

a These hectares are not additive as the boreal forest includes the whole of Newfoundland and Labrador, and portions of Ontario and Québec.

The Plan is based on the assumption that the overall waterfowl population is limited by the availability of suitable habitat (breeding, staging and wintering). The loss and degradation of wetlands continues to threaten species that depend on these habitats. In many urban and agricultural areas, wetlands have been reduced to a fraction of their original size. While the threat of wetland loss remains high in the settled areas of southern Ontario and Québec, the rate of wetland loss in southern Ontario has decreased over the last 10 years as a result of increased conservation efforts and effective policy. Losses have also been largely curtailed in the Maritime Provinces as a result of strong provincial wetland protection legislation.

The impacts of climate change across the EHJV landscape are increasingly apparent. Coastal marshes choked by invasive species, overland flooding and eroding coastlands, are just a few ways that climate change is affecting eastern Canada's wildlife populations and their habitats. Understanding the implications of climate change is a necessity for EHJV's partners and as such, it is emerging as an overarching theme for much of the Joint Venture planning, implementation and evaluation.

Precipitation events and storm surges are anticipated to become more severe and erratic over the next several decades. Upstream from settled areas and along coastal systems, Ducks Unlimited Canada's (DUC) water-control structures are designed to help account for the predicted impacts from flash floods, drought and coastal erosion. However, the significant loss of wetlands on the landscape has compounded the impacts of extreme weather events on rural landowners and city dwellers alike. DUC collaborated with the Credit Valley Conservation Authority and the Ontario Ministry of Natural Resources and Forestry to investigate the economic value of wetlands to control flooding in southern Ontario. The study, conducted by the Intact Centre for Climate Change Adaptation at the University of Waterloo, evaluated the role of wetlands at two southern Ontario sites – one urban and one rural. The study analyzed major flood events under two conditions: (1) wetlands that were

DUC collaborated with the Credit Valley Conservation Authority and the Ontario Ministry of Natural Resources to investigate the economic value of wetlands to control flooding in southern Ontario.

left in their natural state, and (2) wetlands that were lost due to development. The results were clear; by leaving wetlands in their natural state, the financial costs of flooding can be reduced by 29 per cent or \$3.6 million in rural settings, and up to 38 per cent or \$51.1 million in urban settings¹⁰.

Along the coast, communities and infrastructure are at risk from increasing sea levels and storm surges associated with more frequent and severe storm events. Coastal wetlands along the Atlantic coast, St. Lawrence River and the Great Lakes, provide a critical function in buffering the impact of these storms.

There is considerable effort underway to map and assess the extent of the impacts of sea level rise on EHJV coastal communities.

There is considerable effort underway to map and assess the extent of the impacts of sea level rise on EHJV coastal communities. For example, universities and local government agencies have led projects that use Light Detection and Ranging (LiDAR) to map a number of DUC's Conservation Priority Areas in the Maritimes, such as the Upper Bay of Fundy, Northumberland Strait and the entire Province of Prince Edward Island. These maps show landscapes, infrastructure and communities that are highly susceptible to sea level rise and storm surges¹¹. Results from the studies, and

from the Atlantic Regional Adaptation Collaborative, suggest that coastal communities should use multiple climate change adaptation approaches to reduce the impacts of climate change through policy and planning, vulnerabilities assessments and adaptation options. Some options include moving some or all of the existing infrastructure currently located near the coast farther inland (such as roads and railways), conserving existing salt marshes, restoring new salt marshes and protecting upland buffers¹². As such, DUC has focused coastal securement efforts on purchasing existing salt marshes and upland buffer strips. The upland buffer provides area for landward migration of salt marshes as sea levels rise. DUC has also focused on identifying potential sites for restoration of degraded coastal wetlands.

HABITAT SPECIES RELATIONSHIPS

The goal of the EHJV Science and Monitoring program is to continually work to improve the impact of investments on conservation actions. Sound science and a partnership approach are at the core of planning, implementation and evaluation. The EHJV collaborates with both the Black Duck Joint Venture (BDJV) and the Sea Duck Joint Venture (SDJV) on habitat- species linkages. By connecting habitat conditions to bird population trends and incorporating other environmental and landscape changes impacting birds into planning, biologists can determine the best use of conservation resources to apply the best actions.

BLACK DUCK JOINT VENTURE

The Black Duck Joint Venture (BDJV) was established in 1989 as the first species Joint Venture under NAWMP. It is a partner-based conservation program consisting of Canadian and U.S. federal, provincial and state agencies and non-government organizations. The goal of the BDJV is to lead a coordinated monitoring, research and communications program to manage American Black Ducks across its original breeding ground survey area, which includes the EHJV.

10 Moudrak, N.; Hutter, A.M.; Feltmate, B. 2017

11 <http://www.nrcan.gc.ca/environment/resources/publications/impacts-adaptation/reports/assessments/2008/ch4/10339>

12 Atlantic Climate Adaptation Solutions Association (May 2017) <https://atlanticadaptation.ca/en/content/adaptation>

The American Black Duck is the cornerstone species of the EHJV with 95 per cent of its continental population breeding within the EHJV region – it remains a species of international management concern. The American Black Duck can be found in saltwater marshes, brackish and freshwater impoundments, riverine and estuary marshes, woodland wetlands, shallow lakes, riparian areas and boreal bogs throughout the EHJV landscape. Habitat conservation and management of American Black Duck habitat are critical components of black duck conservation within the EHJV¹³. EHJV partners work to maintain high quality wetlands and upland habitats that sustain healthy and abundant populations of American Black Ducks as well as other migratory and non-migratory birds. These actions represent a concentrated effort to restore black duck populations and its habitat across the EHJV.

EHJV partners work to maintain high quality wetlands and upland habitats that sustain healthy and abundant populations of American Black Ducks as well as other migratory and non-migratory birds.



Grand Codroy River, Newfoundland/Heather Chaffey

SEA DUCK JOINT VENTURE

The Sea Duck Joint Venture (SDJV) covers all of Canada and the United States and focuses on coastal waters for migrating and wintering ducks and boreal forest and tundra for nesting ducks. The SDJV was established as a species Joint Venture under NAWMP in 1999 with partners from U.S. and Canadian federal governments and non-government organizations to address information gaps needed to improve the management and conservation of sea ducks in North America. Three of the EHJV priority species: Common Eider, Barrow's Goldeneye and Harlequin Duck are classified as sea ducks. The EHJV landscape supports 80 per cent of the continental breeding population of Common Eiders (southern race). EHJV partners work to maintain high quality coastal habitats that sustain healthy and abundant populations of sea ducks and other birds.

13 U.S. Fish and Wildlife Service and Canadian Wildlife Service, 2017



LANDSCAPE/HABITAT CHARACTERIZATION AND ASSESSMENT

The EHJV is North America's largest joint venture at nearly three million square kilometres and is a landscape of varying climatic conditions and habitat types, including wetlands, coastal shorelines, agricultural lands and diverse forest habitats like the boreal forest. Thirty per cent of the EHJV is occupied by wetlands while the boreal forest covers a large portion of Ontario, Québec and Newfoundland and Labrador. The EHJV also supports two-thirds of the Canadian human population within its boundaries.

The EHJV also supports two-thirds of the Canadian human population within its boundaries.

Based on the best available information, the EHJV has generated a table of the land cover types across the EHJV ([Table 6](#)).

DECISION SUPPORT TOOLS

DUCKS UNLIMITED CANADA (DUCS) WATERFOWL PRIORITY AREAS

DUC has prepared comprehensive plans for each Conservation Priority Area, which identify habitat threats, set habitat objectives and outline conservation actions needed to meet objectives.

Conservation Priority Areas (CPA) were established independently within each administration unit of DUC (Ontario, Québec and Atlantic Canada). The approach differed slightly across each province due to available data and unique landscape challenges. However, each area focused on where to work and what needed to be completed based on EHJV priority waterfowl needs, risk to habitat and available opportunities. DUC has prepared comprehensive plans for each CPA, which identify habitat threats, set habitat objectives and outline conservation actions needed to meet objectives.

TABLE 6
Land Cover Types within the EHJV in Hectares, where available

Land Cover Type	Province					
	Ontario ^a	Québec ^b	New Brunswick ^c	Nova Scotia ^d	Prince Edward Island ^e	Newfoundland and Labrador ^f
Agriculture	5,392,670	3,341,300	277,060	238,595	215,004	10,200
Abandoned Agriculture	-	-	-	-	22,319	8,000
Barren	1,201	6,434,400	-	111,904	-	-
Beach	-	-	-	5,031	-	-
Brush and Alders	-	46,002,500	-	45,067	-	-
Coastal	-	-	27,896	10245	-	-
Defense lands	-	-	22,566	-	-	-
Forest – Coniferous	-	49,225,200	-	2,273,138	-	22,704,460
Forest – Clear cut	150,000	-	-	228,198	-	-
Forest – Deciduous	5,764,563	1,953,400	-	501,654	-	-
Forest – Harvested/ Regenerating	-	-	-	-	25,550	-
Forest – Intolerant hardwood	-	-	783,725	-	-	-
Forest – Tolerant hardwood	-	-	683,745	-	-	-
Forest – Mixed	11,793,270	25,075,500	19,87,042	1,187,506	-	-
Forest – Natural	-	-	-	-	202,082	-
Forest – Plantation	-	-	-	-	22,252	-
Forest – Softwood	-	-	2,676,644	-	-	-
Forest – Unclassed	-	-	-	84,105	-	-
Inland Water	11,208,610	-	-	231,838	-	-
Natural non-forest	-	-	7,038	-	-	-
Recreation	-	-	6,696	-	-	-
Settlement	-	-	116,976	-	-	-
Transportation (includes pipeline, powerline, road, rail)	-	-	175,326	55,960	12,828	40,790
Water	-	15,611,700	191,805	-	-	-
Wetland (includes sand dunes, marsh, and open bogs)	7,616,078	18,959,200	341,117	383,636	39,366	12,535,950
Urban (includes industry, landfill, gravel pits)	1,600,000	140,900	33,285	165,513	29,689	272,600
Miscellaneous	-	-	-	7,042	-	-
TOTAL hectares	107,636,418	166,744,100	7,330,918	5,529,431	569,290	40,572,000

a Ministry of Natural Resources and Forestry, Science and Research Branch

b J. Beaulieu, pers. com. Ducks Unlimited Canada

c D. Beaudette, pers. com. NB-Department of Energy and Resource Development

d F. MacKinnon, pers. com. NS Department of Natural Resources (https://novascotia.ca/natr/forestry/gis/pdf/Forest_metadata_web_attrib.pdf)

e Prince Edward Island, State of the Forest 2010. Agriculture and Forestry, Forests, Fish and Wildlife 2013. Prince Edward Island

f <https://www.statcan.gc.ca/pub/16-201-x/2017000/app-ann/tbl/tbl-a1-eng.htm>

In each province, a Conservation Planning or Decision Support System (DSS), tool was developed using all available data. Digital data sets included the information from the Eastern Canada Waterfowl Survey, provincial land cover data, (including hydrology where available), orthophotos, satellite imagery, the results of waterfowl ecology studies (e.g., Mallard Ecology Study in Ontario) and historical wetland loss data. Using the digital information and augmenting it with additional data from DUC field staff, such as specific landscape level challenges or partnership opportunities, the assessment of the different types of wetland habitat within each Conservation Priority Area (CPA) was determined. Staff developed specific wetland attribute criteria to assist in determining potential population limitations in pairing habitat (small <0.4 hectares wetlands, drainage ditches, small watercourses), brood habitat (<1 large wetland/km²) or staging habitat. This type of assessment enables DUC to strategically secure and/or restore the most beneficial type of wetland habitat for waterfowl in the best locations. The individual CPA plans outline the landscape limitations and the best conservation action to address them. Finally, we ensure that the core

of DUC conservation projects (habitat retention, habitat restoration, habitat asset management and project rebuilds) are focused in CPAs for waterfowl.

The Nature Conservancy of Canada (NCC) aims to conserve the best of Canada's natural habitats for wildlife and adheres to an approach based on the Open Standards in the Practice of Conservation.

NATURE CONSERVANCY OF CANADA'S CONSERVATION SYSTEM

The Nature Conservancy of Canada (NCC) aims to conserve the best of Canada's natural habitats for wildlife and adheres to an approach based on the Open Standards in the Practice of Conservation. The conservation process at NCC works at three scales: i) ecoregions ii) natural areas and iii) properties and/or projects. Through the ecoregion planning process, NCC has identified close to 100 natural areas that are critical for the protection of

Canada's natural habitats and species – 34 are located within the EHJV. Within these natural areas, NCC developed specific strategies for identified species and habitats that need to be conserved or restored.

ENVIRONMENT AND CLIMATE CHANGE CANADA'S NATURE CONSERVATION AGENDA

Environment and Climate Change Canada (ECCC) is currently developing a framework for guiding conservation across Canada for the next 10 years. ECCC has identified four integrated strategic directions to guide the implementation of programs and activities – one of these is to concentrate ECCC work on focal areas, priority species and key threats using an integrated multi-species approach. A focal area will be identified within each of the ECCC regions located within the EHJV (Ontario, Québec and Atlantic). Integrated conservation action plans will be developed and implemented in coordination with partners for each of the focal areas. Depending on the focal area identification, it is anticipated that the EHJV help to the implementation these actions.

HABITAT OBJECTIVES

Habitat conservation and management is a shared responsibility: the federal government manages federal lands, marine and some aquatic habitats, while the provinces and territories manage most terrestrial habitats and freshwater and coastal habitats. Most of the habitat within the EHJV's conservation priority areas is privately owned which means that the habitat management and protection is reliant on private land stewardship and partnerships. In order to achieve the NABCI Vision of All Birds, All Habitats; Joint Ventures due to their partnership-driven action, become an important component in the implementation of not only NAWMP objectives for waterfowl, but also for objectives outlined in BCR conservation strategies and other bird group conservation plans. Integrated habitat conservation will be regionally based, biologically driven and landscape oriented.

Protecting habitats and species across the EHJV landscape happens through on-the-ground actions by a diversity of partners. Habitat conservation is guided by the biological planning document that identifies species and habitats at greatest risk and population and habitat objectives at multiple scales using a landscape approach to target highest priority habitat in landscapes and ecoregions.

Protecting habitats and species
across the EHJV landscape
happens through on-the-ground
actions by a diversity of partners.



Pugwash River Estuary, Nova Scotia/Sean Blaney

Quantitative habitat objectives are not described for shorebirds, waterbirds, landbirds and seabirds in the EHJV landscape. In most cases, limited knowledge exists on species distributions and habitat associations, which hinders the EHJV's ability to estimate bird population size and to quantify the impact of landscape change on populations.

Provincial implementation teams reviewed progress in achieving waterfowl habitat objectives during the 2007-2012 planning cycle and adjusted programs, as required, for the new implementation period. In most cases this review consisted of an analysis of program delivery over the past five years and incorporation of any significant program changes by delivery partners.

While habitat retention activities will continue to be pursued as a key mechanism of habitat protection in the 2015-2020 plan, it will be opportunistic and targeted so that the habitat of the highest ecological importance, or most at-risk, is secured.

The EHJV is a well established Joint Venture and has been working collaboratively on conservation projects for 26 years. It should therefore not come as no surprise that the conservation program presented in this Plan is significantly different from that delivered during the 2007-2012 period. Most notably, retention activities that comprised 59 per cent of the conservation effort in the 2007-2012 plan as compared to 34 per cent in the current plan. In the first two decades of the Joint Venture, partners spent a considerable amount of time, effort and resources on habitat retention but, largely due to the absence of strong wetland protection policies, important wetland habitat continued to be lost annually. Partners purchased wetlands and associated uplands or negotiated agreements to stem the loss. While habitat retention activities will continue to be pursued as a key mechanism of habitat protection in the 2015-2020 plan, it will be opportunistic and targeted so

that the habitat of the highest ecological importance, or most at-risk, is secured ([Table 7](#)). The focus during this implementation period will therefore be placed on the management of projects that have been secured during the first 26 years of the EHJV and on the restoration of existing sites to maximize their capacity to continue to support waterfowl and other biodiversity ([Table 8](#)).

TABLE 7
EHJV-wide Habitat Retention Objectives for 2015-2020 by Province (5 years)

Habitat Retention	2015-2020 Habitat Retention Objectives (hectares)		
	Permanent (purchase, donation, easement)	Medium (10-99 yrs)	Short (< 10yrs)
Wetland			
Ontario	2,220	7,650	-
Québec	3,995	1,274	2,115
New Brunswick	252	100	-
Nova Scotia	452	-	-
Prince Edward Island	293	7	-
Newfoundland and Labrador	100	1,210	-
Sub-total	7,312	10,241	2,215
Upland			
Ontario	2,520	16,200	-
Québec	3,002	546	250
New Brunswick	807	-	-
Nova Scotia	679	-	-
Prince Edward Island	195	5	-
Newfoundland and Labrador	100	805	15,000
Sub-total	7,303	17,556	15,250
Retention Total	14,615	27,797	17,365

TABLE 8
EHJV-wide Habitat Restoration Objectives for 2015-2020 by Province (5 years)

Habitat Restoration	2015-2020 Habitat Restoration Objectives (hectares)						
	Hydrological Restoration	Wetland BMP Implementation	Upland Habitat Agricultural BMP Implementation	Compensatory Mitigation	Ecological Restoration	Nest Structures	Extension
Wetlands							
Ontario	-	450	-	-	1,260	-	-
Québec	536	-	-	-	-	-	55
New Brunswick	220	-	-	365	-	-	-
Nova Scotia	200	-	303	75	40	-	-
Prince Edward Island	5	-	-	-	-	-	
Newfoundland and Labrador	-	-	-	-	-	-	-
Sub-total	961	450	303	440	1,300	0	55
Associated Upland							
Ontario	-	300	-	-	120	50	0
Québec	67	-	150	-	-	200	35
New Brunswick	-	-	-	-	-	-	-
Nova Scotia	20	-	1,416	20	-	-	-
Prince Edward Island	10	-	-	-	-	-	-
Newfoundland and Labrador	-	-	-	-	-	225	-
Sub-total	97	300	1,566	20	120	475	35
Total Restored	1,058	750	1,869	460	1,420	475	90

PROGRESS TOWARD OBJECTIVES

Each EHJV partner tracks and records their progress towards achieving habitat conservation goals using the Canadian National Tracking System (NTS). The NTS tracks partner financial contributions, expenditures and progress towards EHJV habitat objectives.



CONSERVATION PROGRAMS AND INITIATIVES

EHJV conservation activities are designed to help sustain waterfowl populations, and where possible, support other wetland-dependent, terrestrial and marine species. By working to ensure healthy wetland ecosystems, the positive outcomes of EHJV projects extend beyond waterfowl and other wildlife and plant species – all Canadians benefit from healthy ecosystems.

HABITAT RETENTION (PERMANENT, MEDIUM AND SHORT-TERM)

Habitat retention is the protection or preservation of functional waterfowl habitat and of suitable habitat for other bird species in perpetuity. It is one of the main ways that EHJV partners protect wetland and associated upland habitats for the benefit of waterfowl and other migratory and non-migratory bird species. The EHJV relies on the following activities to retain critical migratory and non-migratory bird habitat within its boundaries.

Purchase (Fee Simple Acquisitions)

Purchase of habitat by a partner agency resulting in a transfer of ownership. This activity can be relatively expensive and is therefore usually focused on wetland habitats with the highest risk of loss and the greatest benefit to waterfowl and other migratory and non-migratory bird species. The EHJV's 5-year goal is to purchase 14,369 hectares of habitat.

Conservation Encumbrance (Servitudes, Easements, Covenants, Agreements)

EHJV partners obtain an easement for a specific amount of time that restricts activity on the land. This approach is often more cost effective than outright purchase. Establishing encumbrances does however result in the ongoing obligation to monitor lands to ensure that the terms of the easement or agreement are honoured. The EHJV's goal is to secure 27,785 hectares of habitat over five years through these conservation actions.

Crown Designation

The title and right to manage a parcel of property is passed from one government department to another. This legal designation results in enhanced protection of Crown Land and often protects the land from resource extraction activities. It also includes the designation of abandoned lands to Crown ownership with conservation covenants. An example includes the designation of Wildlife Habitat Protection.

Lease

EHJV partner agencies rent the use of the land thereby providing conservation protection.

Stewardship and Extension

Stewardship and extension programs directly involve land managers and landowners (private, corporate and/or all levels of government) in conservation, by encouraging and helping to implement wildlife-friendly management techniques on their properties. Essentially, the land manager and/or landowner becomes a caretaker of the landscape, and by extension, educates and motivates other landowners to implement land-use practises to conserve the wildlife value of their land, while enhancing production and economic benefits. The role of EHJV partners is to provide expertise and guidance for undertaking and sustaining these collective landscape-approach programs which are critical to healthy habitat and wildlife populations. The 5-year goal of the EHJV is to influence 17,375 hectares through stewardship and extension programs.

Stewardship and extension programs directly involve land managers and landowners (private, corporate and/or all levels of government) in conservation, by encouraging and helping to implement wildlife-friendly management techniques on their properties.

HABITAT RESTORATION (WETLAND AND UPLAND)

The EHJV partnership implements numerous restoration techniques to conserve and improve wetland and upland habitat functions and habitat conditions, including:

- Restoring degraded wetlands using a range of engineering techniques, including the construction of earthen berms, the installation of water-control structures and/or excavation, to address impacts on wetland hydrology and to help control invasive species
- Securing upland areas associated with wetlands that serve as nesting through modification of common agricultural practices to benefit the producer and the environment
- Allowing vegetation re-growth, and planting native trees and shrubs on marginal agricultural lands to provide upland nesting cover and increase habitat diversity
- Installing cavity nest boxes and deploying eider nest shelters on coastal islands to improve nest success.

The EHJV's 5-year goal is to restore 8,799 hectares of wetland and 2,838 hectares of associated upland habitat.

LAND AND WATER POLICY

EHJV partners facilitate bird-habitat conservation initiatives, programs, policies and legislation. Policy activities are non-confrontational and informed by science. The EHJV works within existing policy frameworks to promote beneficial policies and legislation that support waterfowl and wetland habitat, as well as habitat for all birds. They also encourage sustainable land-use practices through the provision of science-based arguments, to support proposed regulatory and legislative changes. Policy efforts, if highly focused and outcome-oriented, can impact habitat- and land-management practices at the landscape scale. Influencing policy is an important mechanism for reversing the habitat loss and habitat deterioration trends that have been most responsible for the decline of North America's waterfowl populations.

The EHJV works within existing policy frameworks to promote beneficial policies and legislation that support waterfowl and wetland habitat, as well as habitat for all birds.

The EHJV has had notable success in the Maritime Provinces where strong wetland protection legislation has been enacted. The legislation includes a commitment to “no net loss” of wetlands and the adoption of a mitigation sequence that increases the scope of protection on over 800,000 hectares.

Currently, the EHJV provinces are leaders in wetland policy. Of the six provinces, three have enacted wetland policies (Prince Edward Island, New Brunswick and Nova Scotia), and Québec is in the process of developing one. In Ontario, the government recently developed a Strategic Plan for Wetlands. Wetlands in Ontario are protected under a variety of legislative, regulatory or policy instruments guiding land-use decisions. Newfoundland and Labrador has embarked on a large-scale mapping project that will identify and delineate provincial wetlands leading, hopefully, to a provincial wetland policy by the end of this Implementation Plan scope. In addition to provincial policies, the 1991 Federal Policy on Wetland Conservation provides national guidelines and contexts.

The primary focus of EHJV land and water policy efforts will include:

- Environmental scanning that leads to the identification of issues and actions for the EHJV
- Reviewing legislation and agency regulations and policies, and, where possible, influencing policy initiatives at all levels of government that are important for increasing the level of wetland protection.

MANAGEMENT OF HABITAT ASSETS

Management is defined in the Canadian NAWMP Common Language document as “the maintenance of waterfowl productivity of existing projects and the provision of suitable habitat for other bird species.”

Since 1989, the EHJV has secured and now manages over 1.9 million hectares of wetland and over 1.1 million hectares of associated upland habitat, providing habitat for over 400,000 breeding pairs of waterfowl and a host of other wetland-dependent wildlife. Management activities include engineering and biological inspections, repairs and maintaining and managing secured habitats to sustain their productive capacity for waterfowl and other wildlife. These activities also include the maintenance of signage, fishways, nest boxes and payment of land taxes on acquired lands.

CONSERVATION PLANNING

EHJV activities within each of the provinces are guided by a Steering Committee that includes representatives from its major active partners. Representatives at the provincial Steering Committee level can differ from the active partners on the overarching EHJV Management Board ([Appendix 1](#)). However, each Steering Committee is chaired by the provincial representative who also sits on the EHJV Management Board. The EHJV Management Board, currently chaired by a representative of Environment and Climate Change Canada, ensures that the various EHJV Steering Committees are working together towards the larger EHJV-wide vision and mission.

EHJV activities within each of the provinces are guided by a Steering Committee that includes representatives from its major active partners.

EHJV partners use of a variety of available tools to guide conservation actions and future activities within the Joint Venture. While some of these may be developed individually for specific purposes, others are developed jointly. These tools are discussed more fully under Decision Support Tools (see section 3). EHJV partners contribute to the overall conservation mandate of the EHJV. Some partners have mandates that are broader in scope than waterfowl and wetlands and, as result, operate across various landscapes. The EHJV affords partners a forum in which to communicate, coordinate activities and work together on specific projects allowing partners to maximize efficiency regarding the use of staff, funding, expertise and other resources.



Fosterville Marsh Habitat Restoration Project, New Brunswick/Ducks Unlimited Canada

SCIENCE

The goal of the EHJV Science and Monitoring Program is to continually work to improve the impact of investments on conservation actions. As with all EHJV efforts, sound science and a partnership approach are at the core of planning, implementation and evaluation.

Specifically, EHJV partners work to maintain high-quality wetland and upland habitats that sustain healthy and abundant populations of waterfowl and other birds, when possible. This is accomplished by understanding the habitats and environmental conditions needed to bolster target populations. By connecting habitat conditions (e.g., wetland abundance, land/water use, habitat quality and conservation actions) to bird population trends (e.g., recruitment, mortality and population growth rates), and by incorporating other environmental and landscape changes affecting birds into planning, biologists can determine the best use of conservation resources and actions.

To date, planning activities have focused on:

- Determining the relationship between land-cover data and waterfowl survey data at the BCR level
- Gaining a better understanding of the relationship between waterfowl populations and their habitats through active collaboration with the BDJV and SDJV
- Collaborating with the BDJV and the SDJV on species-habitat linkages and the development of explicit habitat population models for breeding and wintering grounds
- Developing a strategic plan to guide future EHJV policy and conservation actions
- Investigating climate change effects on EHJV priority habitats and species and flood attenuation benefits of wetlands within the Credit River Watershed, Ontario. This evaluation will help provide the scientific evidence that previously restored or natural wetlands help to address flooding and help watersheds adapt to extreme weather events associated with climate change
- Geo-referencing historical Eastern Waterfowl Survey data to assess landscape changes (including previously enhanced wetlands) over this timeframe and link to distribution and species composition of waterfowl across NB and NS
- Evaluation of site affinities of breeding, molting and wintering southern race Common Eider and American Black Duck to prioritize target areas for conservation actions. This also includes the development of a Key Site Atlas for sea ducks to inform habitat conservation decisions in partnership with the SDJV.
- Analysing band recovery data for female Common Eiders (American race) from breeding colonies across their range (Maine, NB, NS, NL and QC) to estimate recruitment and population growth rates to prioritize conservation actions needed to combat population declines
- Using waterfowl banding to assess brood production in *North American Wetlands Conservation Act* projects (current vs past)
- Wetland inventory and mapping in QC, NL and NB to improve wetland conservation efforts.

COMMUNICATIONS, EDUCATION AND OUTREACH

The EHJV is a diverse partnership with an even more diverse “client base” for habitat conservation delivery. Developing and implementing internal and external communications is essential to keep JV partners informed, engaged and coordinated, and to cultivate support from key target audiences. The process requires identification of relevant key messages, and appropriate methods of information dissemination. Evaluating the effectiveness of communications is also challenging, as public (and partner) attitudes, opinions and behaviors are not easily influenced or tracked.

A primary goal of EHJV outreach is developing products and initiatives that influence the actions of others. The Joint Venture must be effective and compelling at communicating goals and strategies to conservation stakeholders as well as the public and elected officials. Using various communications approaches is critical to reaching new public and private entities and to increase knowledge and resources for Joint Venture conservation.

The EHJV communications program consists of two parts: internal communications and external communications. The goal of internal communications is to share information among existing partners, particularly members of the Management Board and provincial Steering and Technical Committee, and to facilitate completion of EHJV habitat conservation, monitoring and research initiatives. The goal of external communications is to provide recommendations to management bodies, recruit new EHJV partners and raise awareness and support for bird conservation among stakeholders, the general public and policy makers. To address the communication needs of the EHJV, a 5-year communications plan will be developed. It will be designed to promote, coordinate and deliver bird habitat conservation that is founded on strategic habitat conservation planning and principles. The plan will guide EHJV efforts to implement innovative and targeted communications campaigns over five years from 2015-2020; it will also build on previous Joint Venture communications efforts.

The goal of external communications is to provide recommendations to management bodies, recruit new EHJV partners and raise awareness and support for bird conservation among stakeholders, the general public and policy-makers.

EXPENDITURE FORECAST

Table 9 outlines the total estimated resources required to undertake and achieve the habitat objectives over the next five years for EHJV conservation actions. Expenditures are for actions that benefit wetlands as waterfowl habitat. The expenditures do not indicate the full extent of the resources required to benefit all birds and all bird habitats targeted by the EHJV. A more detailed breakdown per province is available in [Appendix 5](#).



Marlborough Forest Board, Ontario/EHJV

TABLE 9
EHJV-wide Priority Programs and Associated Costs by Initiative

Initiative		Program/Activity	Area (ha) by habitat			Five-year Costs
			Wetland	Associated Uplands	Total	
Habitat Retention	Permanent	Acquisitions	7,312	7,303	14,615	\$34,199,709
	Medium-term	Conservation Agreements	9,024	16,751	25,775	\$5,155,000
		Municipal/Industry Agreements (i.e. SAM)	1,210	805	2,022	\$1,250,000
	Short-term	Stewardship / Incentives	2,125	15,250	17,375	\$3,525,000
		TOTAL	19,520	40,109	59,787	\$44,129,719
Habitat Restoration		Hydrological Restoration	961	97	1,058	\$5,175,652
		Wetland BMP Implementation	450	300	750	\$450,000
		Upland Habitat Agricultural BMP Implementation	303	1,566	1,869	\$4,313,601
		Compensatory Mitigation	440	120	460	\$1,800,000
		Ecological Restoration	1,330	120	1,420	\$11,520,000
		Nest Structures	-	475	475	\$260,000
		Extension	55	35	90	\$101,480
		TOTAL	3,509	2,613	6,122	\$23,620,706
Management of Habitat Assets (HAM)		Natural Wetlands	19,050	4,101	23,151	\$1,502,500
		Engineered Wetlands	79,321	6,754	86,075	\$6,690,000
		Upland and Associated Wetlands	47,295	301,833	349,128	\$1,759,000
		Wetland Rebuild	5,290	225	5,515	\$25,975,000
		Decommission Projects	128	-	128	\$652,000
		Nest Structures	-	-	-	\$435,000
		TOTAL HAM	145,794	312,913	458,482	\$11,038,500
		TOTAL Rebuild	5,290	225	5,515	\$25,975,000
Land and Water Policy			375	-	-	\$7,087,000
Science			-	-	-	\$8,407,530
Conservation Planning			-	-	-	\$5,812,865
Communication and Education			-	-	-	\$4,860,000
TOTALS ^a			19,520	40,109	59,787	\$130,931,220

a Habitat hectares retained, restored and managed are not additive. Hectares are first secured, may then be enhanced and are subsequently placed under management.



CONSERVATION TRACKING

The NatureCounts website, managed by Bird Studies Canada, is the first Canadian node of the Avian Knowledge Network, a group dedicated to the understanding of the patterns and dynamics of bird populations across the Western Hemisphere. It facilitates the collection, management, analysis and sharing of natural inventory and monitoring data, with a particular focus on birds. It includes bird population indices, data summaries and mapping tools. Using NatureCounts, it is possible to download raw data from various monitoring projects, including the Marsh Monitoring Program and the second breeding bird atlases for Ontario, Québec and the Maritimes. These atlases are a valuable tool for conservation managers and policymakers; they show recent changes in the distribution and abundance of bird species across much of the area covered by the EHJV.

POPULATION MONITORING PROGRAMS

SURVEYS FOR OTHER BIRDS

Monitoring bird populations is essential for tracking their status, and for identifying those species that may need conservation action. As the EHJV moves towards incorporating an all-bird approach, there are a number of long-term surveys that will be useful in helping inform decisions. The North American Breeding Bird Survey (BBS), which began in 1966, is the primary source of long-term, large-scale population trend data for many of the landbird species breeding within the EHJV. In Canada, this volunteer-based, standardized roadside survey is coordinated by EHJV partner Environment and Climate Change Canada (Canadian Wildlife Service). The data are analyzed annually to provide information on bird population trends, relative abundance and species composition and richness, at the local, regional and continental scale. Geographic coverage has improved over time, but is incomplete in the boreal and Arctic due to restricted road access and the limited number of birders in the regions. It is therefore poorly suited for providing

As the EHJV moves towards incorporating an all-bird approach, there are a number of long-term surveys that will be useful in helping inform decisions.

population trends for more northerly nesting species. In addition, the BBS is also inadequate for monitoring certain secretive and/or nocturnal species. These knowledge gaps are, however, filled by a number of complementary surveys, which include, but are not limited to, those highlighted below.

The Canadian Migration Monitoring Network (CMMN) provides data for determining population trends of bird species migrating to the boreal forest and further north to breed, including neotropicals and raptors. The network was established in 1998, and is coordinated by EHJV partners Bird Studies Canada and Environment and Climate Change Canada (Canadian Wildlife Service) and the member stations.

Within the EHJV, the Marsh Monitoring Program (MMP) contributes to conservation and management efforts in wetlands and related ecosystems by collecting data on wetland-associated birds and their habitats.

A dozen or so stations are active across the southern boundary of the EHJV and these rely on standardized banding programs and/or visual counts to monitor migrating birds. Data collected by CMMN member stations, as well as the results of population trend analyses, are available through Bird Studies Canada's NatureCounts website.

Within the EHJV, the Marsh Monitoring Program (MMP) contributes to conservation and management efforts in wetlands and related ecosystems by collecting data on wetland-associated birds and their habitats. The MMP was first launched in Ontario in 1995 by Bird Studies Canada, and expanded to Québec and the Maritimes in 2004 and 2012, respectively. While each chapter pursues regional priorities, the primary objective of the MMP is to

collect data on secretive freshwater and/or salt marsh wetland associated birds and a suite of species often poorly detected by other bird survey programs. In the Maritimes, the MMP expanded in 2015 to include forested wetlands – a habitat often not afforded the same protection as other wetlands. Information obtained from the MMP allows the EHJV to better direct management and conservation efforts for wetlands and wetland-dependent species. Data from the MMP are available through the NatureCounts website.

The Canadian Lakes Loon Survey established by Bird Studies Canada in 1981 also helps provide information on wetland bird populations across the EHJV. Participants monitor Common Loon reproductive success and report additional species observed. They also work as stewards within their communities, helping to protect the Common Loon and other aquatic species sharing the same water bodies. Data from this survey are available through NatureCounts.

The Ontario Shorebird Survey (OSS) and the Atlantic Canada Shorebird Survey (ACSS) help monitor population trends of shorebirds using the EHJV. These were developed by Environment and Climate Change Canada (Canadian Wildlife Service) in 1974 and are part of the Program for Regional and International Shorebird Monitoring. Volunteers are vital to the success of these surveys. The surveys help provide a better understanding of the timing and magnitude of shorebird migration at hundreds of important sites across the EHJV.



Allisary Creek at Mount Stewart, Prince Edward Island/Ducks Unlimited Canada

Several programs also exist for monitoring nocturnal bird species present within the EHJV. Among these is the Nocturnal Owl Survey coordinated by Bird Studies Canada. This volunteer program uses call-playback to obtain information on owl population trends. The survey has been running in Ontario since 1995, in Atlantic Canada since 2001, and in Québec since 2008. The data, which can help evaluate the effectiveness of land management programs, are available through NatureCounts.

In addition to the more focused monitoring programs active within the EHJV, an important amount of bird data is also collected through less formal, year-round checklist programs, such as eBird, the Christmas Bird Count and other Citizen Science programs.

EASTERN WATERFOWL SURVEY

Federal, provincial and state agencies conduct the Waterfowl Breeding Population and Habitat Survey (WBPHS) each spring to estimate the size of breeding waterfowl populations and evaluate habitat conditions. These surveys, conducted using airplanes and helicopters, cover over 5.0 million km² encompassing the principal waterfowl breeding areas of North America, and include the EHJV ([Figure 3](#))¹⁴.

Since 1990, the Canadian Wildlife Service has conducted a helicopter-based aerial plot survey in the core American Black Duck breeding regions of Ontario, Québec and the Atlantic Provinces, to estimate waterfowl abundance. Similarly, the U.S. Fish and Wildlife Service has conducted aerial transect surveys using airplanes in portions of the eastern survey area. Historically, data from these surveys were analyzed separately, but in 2004 the two organizations agreed to integrate the two surveys and to produce composite waterfowl population estimates using both datasets.

¹⁴ Bordage, D. et al. (editors) 2017

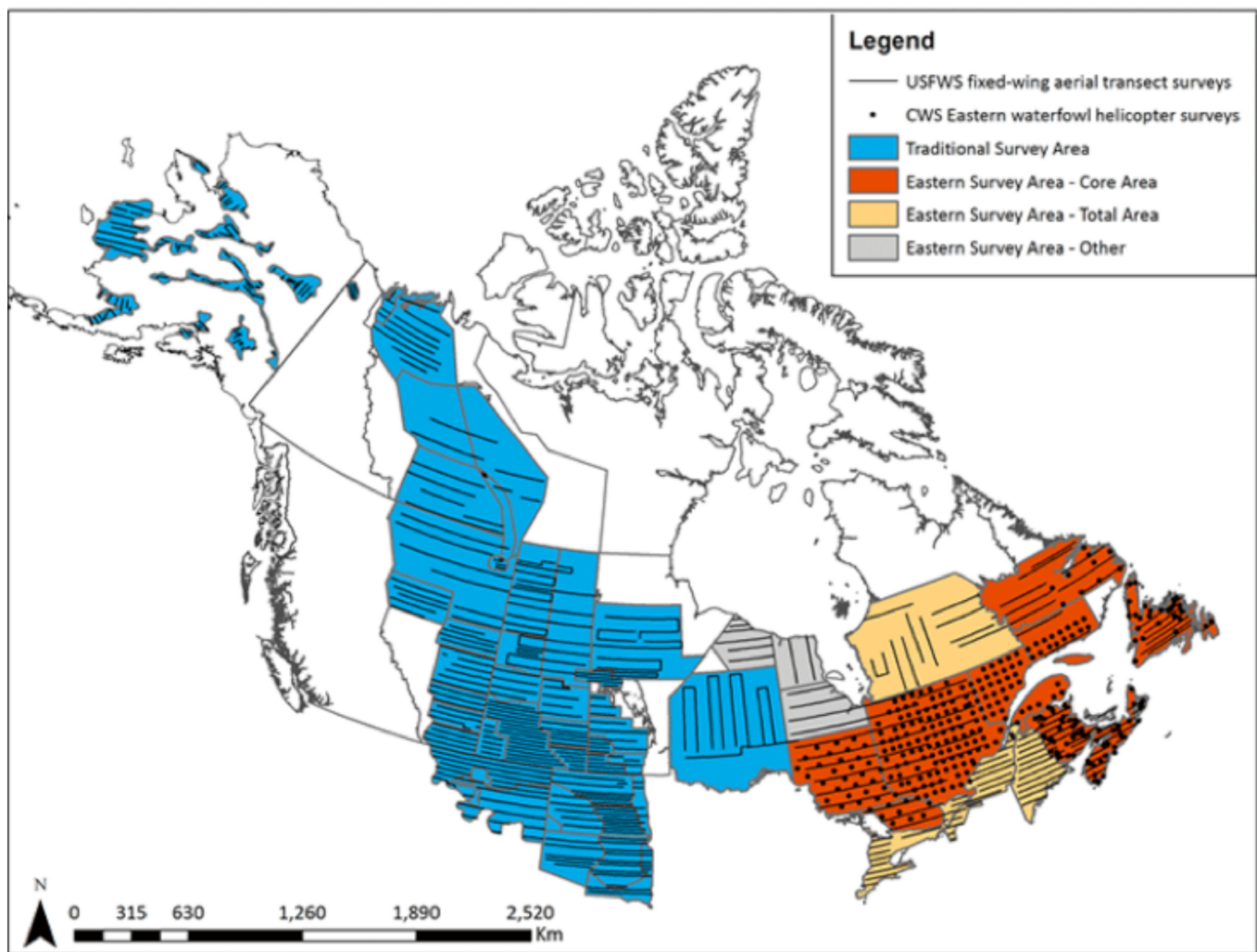


FIGURE 3
Waterfowl Breeding Population and Habitat Survey showing Eastern Survey Area^a

a Environment and Climate Change Canada, 2016



Sunpoke Lake Meadow near Oromocto,
New Brunswick/Margaret Campbell

6 HUMAN DIMENSIONS

Over 80 years ago Aldo Leopold referenced the study of human dimensions when he said, “There are two things that interest me: the relation of people to each other, and the relation of people to the land.”¹⁵ This recognition of the interaction between humans and natural resources is not new; what is new is a greater emphasis on the integration of these interactions and how they, however, can be more systematically understood.

Wildlife management has conventionally been represented as having three dimensions: wildlife, habitats and humans; natural resource conservation has traditionally been undertaken by biological scientists who have focused primarily on two of those areas, wildlife and habitat. However, it is now widely recognized that managing wildlife populations and their habitats (i.e., the biological sciences) alone cannot achieve conservation objectives and that greater stakeholder and public engagement and a better understanding of human values, attitudes and beliefs informed by social sciences must be integrated to achieve success.

In short, human dimensions deal with the assessment and application of social information to wildlife management decision making. It is that suite of issues related to how people value natural resources, how they want those resources to be managed and how they affect and are affected by those resources and related decisions. The human dimensions of natural resource management covers multiple disciplines including economics, sociology, psychology, geography, anthropology, political science and communications. Within these disciplines, there are a number of quantitative (e.g., surveys, stakeholder evaluations, demographic assessments and land use trends) and qualitative (e.g., focus groups and interviews) tools, as well as economic modeling and decision analyses and support tools.

Over 80 years ago Aldo Leopold referenced the study of human dimensions when he said, “There are two things that interest me: the relation of people to each other, and the relation of people to the land.”

The human dimensions of natural resource management covers multiple disciplines including economics, sociology, psychology, geography, anthropology, political science and communications.

¹⁵ Meine, C. D. 1991

The NAWMP 2012 Revision included, for the first time, the role that people have in the conservation of waterfowl, which is the human dimensions aspect, of waterfowl conservation. Goal 3 aims for “growing numbers of waterfowl hunters, other conservationists and citizens who enjoy and actively support waterfowl and wetlands conservation.” The objective is to address the needs of people relative to the conservation of bird habitats and bird populations, and Joint Ventures nationwide are reviewing their Implementation Plan to reflect this very important component.

The EHJV is working toward the goal of undertaking programs and projects that support and advocate for growing numbers of waterfowl hunters and other conservationists as well as citizens who enjoy and actively support waterfowl and wetlands conservation. Many EHJV partners have already undertaken activities that help achieve Goal 3; however, it has never been specifically included in the reporting of Joint Venture activities. While these activities may have not been focused solely on the specific outcome of waterfowl conservation, they certainly have had that outcome. EHJV partners will refine these human dimension activities and work with the NAWMP Human Dimensions Working Group to implement strategies appropriate for the EHJV.



Atocas Bay, Ontario, sign unveiling ceremony/Ontario Ministry of Natural Resources

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APPENDICES

APPENDIX 1:

EASTERN HABITAT JOINT VENTURE ORGANIZATIONAL STRUCTURE

Eastern Habitat Joint Venture Management Board

- Environment and Climate Change Canada (Canadian Wildlife Service – Ontario, Québec, & Atlantic Regions)
- Ontario Ministry of Natural Resources and Forestry
- Ministère des Forêts, de la Faune et des Parcs du Québec
- New Brunswick Department of Energy and Resource Development
- Nova Scotia Department of Natural Resources
- Prince Edward Island Department of Communities, Land and Environment
- Newfoundland and Labrador Department of Fisheries and Land Resources
- Ducks Unlimited Canada
- Nature Conservancy of Canada
- Bird Studies Canada
- Wildlife Habitat Canada

EHJV Coordinator (CWS)

CWS QC Regional Coordinator

(same person)

CWS ATL Regional Coordinator

Eastern Habitat Joint Venture Provincial Steering and Technical Committees *each with a Provincial Coordinator*

Ontario
Steering &
Technical
Committee

Québec
Steering
Committee

New Brunswick
Steering &
Technical
Committee

Nova Scotia
Steering &
Technical
Committee

Prince Edward
Island Steering
& Technical
Committee

Newfoundland
and Labrador
Steering &
Technical
Committee

Québec
Technical
Committee

APPENDIX 2:

PRIORITY SPECIES BY BIRD CONSERVATION REGIONS (BCR) AND WITHIN THE EHJV (ADAPTED FROM BCR STRATEGIES)

Priority Species	BCR 3	BCR 7	BCR 8	BCR 12	BCR 13	BCR 14	EHJV Priority
Landbirds							
Acadian Flycatcher			X		X		
Alder Flycatcher		X	X		X		
American Kestrel				X	X		
American Redstart						X	
American Three-toed Woodpecker		X	X	X		X	
Bald Eagle		X	X	X	X	X	
Baltimore Oriole					X		
Bank Swallow			X	X	X	X	
Barn Owl					X		
Barn Swallow			X	X	X	X	
Barred Owl					X		
Bay-breasted Warbler		X	X	X		X	
Belted Kingfisher		X	X	X	X	X	
Bicknell's Thrush			X			X	
Black-and-white Warbler			X				
Black-backed Woodpecker			X				
Black-billed Cuckoo			X	X			
Blackburnian Warbler			X	X		X	
Blackpoll Warbler		X					
Black-throated Blue Warbler				X		X	
Black-throated Green Warbler			X	X		X	
Blue-headed Vireo			X			X	
Blue-winged Warbler					X		
Bobolink			X	X	X	X	
Boreal Chickadee		X	X			X	
Boreal Owl			X	X		X	
Broad-winged Hawk				X			
Brown Creeper			X	X	X	X	
Brown-headed Cowbird						X	
Brown Thrasher				X	X	X	
Canada Warbler		X	X	X	X	X	
Cape May Warbler		X				X	

Priority Species	BCR 3	BCR 7	BCR 8	BCR 12	BCR 13	BCR 14	EHJV Priority
Cerulean Warbler				X	X		
Chestnut-sided Warbler			X	X			
Chimney Swift			X	X	X	X	
Cliff Swallow			X	X			
Common Nighthawk		X	X	X	X	X	
Common Yellowthroat				X			
Connecticut Warbler			X	X			
Eastern Kingbird			X		X	X	
Eastern Meadowlark			X	X	X	X	
Eastern Screech-owl					X		
Eastern Towhee				X	X		
Eastern Whip-poor-will			X	X	X	X	
Eastern Wood-Pewee				X	X	X	
Evening Grosbeak			X	X		X	
Field Sparrow				X	X	X	
Fox Sparrow		X	X				
Golden Eagle	X	X	X	X		X	
Golden-winged Warbler				X	X	X	
Grasshopper Sparrow					X		
Gray Catbird				X			
Gray Jay		X	X			X	
Gray-cheeked Thrush	X	X				X	
Great Gray Owl				X			
Gyrfalcon	X	X					
Harris's Sparrow		X					
Henslow's Sparrow					X		
Hoary Redpoll	X						
Hooded Warbler					X		
Horned Lark						X	
Kirtland's Warbler					X		
Least Flycatcher				X			
Le Conte's Sparrow		X					
Lincoln's Sparrow		X					
Loggerhead Shrike (migrans)				X	X		
Long-eared Owl			X		X		
Louisiana Waterthrush				X	X		
Magnolia Warbler			X			X	
Merlin		X					

Priority Species	BCR 3	BCR 7	BCR 8	BCR 12	BCR 13	BCR 14	EHJV Priority
Mourning Warbler			X	X		X	
Nashville Warbler			X	X			
Nelson's Sparrow		X			X	X	
Northern Bobwhite					X		
Northern Flicker			X	X	X	X	
Northern Goshawk			X	X		X	
Northern Harrier					X		
Northern Hawk Owl		X					
Northern Parula						X	
Northern Rough-winged Swallow				X	X		
Northern Saw-whet Owl			X	X	X	X	
Northern Shrike		X					
Northern Wheater	X						
Olive-Sided Flycatcher		X	X	X	X	X	
Orange-crowned Warbler			X	X			
Osprey						X	
Ovenbird			X	X		X	
Palm Warbler		X			X	X	
Peregrine Falcon (anatum/tundrius)	X	X	X	X	X	X	
Philadelphia Vireo			X				
Pine Grosbeak		X	X	X		X	
Prairie Warbler				X	X		
Prothonotary Warbler					X		
Purple Finch			X	X		X	
Purple Martin			X		X		
Red Crossbill (percna)			X	X			
Red-headed Woodpecker				X	X		
Red-shouldered Hawk				X	X	X	
Rock Ptarmigan	X						
Rose-breasted Grosbeak				X	X	X	
Rough-legged Hawk	X	X					
Ruby-crowned Kinglet			X	X			
Ruffed Grouse			X	X		X	
Rufous-sided Towhee					X	X	
Rusty Blackbird		X	X	X		X	
Savannah Sparrow					X	X	
Sedge Wren				X	X	X	
Sharp-shinned Hawk				X	X	X	

Priority Species	BCR 3	BCR 7	BCR 8	BCR 12	BCR 13	BCR 14	EHJV Priority
Short-eared Owl	X		X	X	X	X	
Snow Bunting	X						
Snowy Owl	X	X	X				
Song Sparrow				X			
Spruce Grouse		X	X			X	
Swamp Sparrow		X	X	X			
Tennessee Warbler		X	X	X		X	
Tree Swallow			X	X		X	
Veery				X		X	
Vesper Sparrow				X	X		
White-breasted Nuthatch						X	
White-throated Sparrow		X	X	X		X	
White-winged Crossbill		X					
Winter wren			X				
Wood Thrush				X	X	X	
Yellow-bellied Flycatcher			X	X			
Yellow-bellied Sapsucker			X	X			
Yellow-breasted Chat (virens)					X		
Yellow-throated Vireo					X	X	
Shorebirds							
American Golden Plover	X				X	X	
American Woodcock				X	X	X	
Black-bellied Plover					X	X	
Buff-breasted Sandpiper					X		
Dunlin		X				X	
Eskimo Curlew		X					
Greater Yellowlegs		X	X				
Hudsonian Godwit					X		
Killdeer				X	X	X	
Least Sandpiper	X	X					
Lesser Yellowlegs		X	X			X	
Marbled Godwit		X					
Piping Plover (cicuncinctus)				X	X		
Piping Plover (melodus)						X	
Purple Sandpiper							
Red Knot (rufa)		X		X	X	X	
Red Phalarope							
Red-necked Phalarope						X	

Priority Species	BCR 3	BCR 7	BCR 8	BCR 12	BCR 13	BCR 14	EHJV Priority
Ruddy Turnstone						X	
Sanderling						X	
Semipalmated Plover		X			X		
Semipalmated Sandpiper	X	X			X	X	
Short-billed Dowitcher (griseus)		X			X	X	
Solitary Sandpiper		X	X	X		X	
Spotted Sandpiper					X	X	
Upland Sandpiper					X	X	
Whimbrel						X	
White-rumped Sandpiper							
Willet							
Wilson's Phalarope					X		
Wilson's Snipe		X	X	X	X	X	
Waterbirds							
American Bittern		X	X	X	X	X	
American Coot				X	X		
American White Pelican			X	X			
Arctic Tern							
Atlantic Puffin						X	
Black-legged Kittiwake						X	
Black Guillemot						X	
Black Tern			X	X	X	X	
Black-crowned Night-Heron				X	X		
Bonaparte's Gull		X			X	X	
Caspian Tern				X	X		
Common Gallinule				X			
Common Loon	X	X	X	X	X	X	
Common Murre						X	
Common Tern				X	X	X	
Cory's Shearwater							
Double-crested Cormorant						X	
Dovekie							
Forster's Tern					X		
Great Black-backed Gull				X	X	X	
Great Blue Heron					X		
Great Cormorant						X	
Great Egret					X		
Great Shearwater							

Priority Species	BCR 3	BCR 7	BCR 8	BCR 12	BCR 13	BCR 14	EHJV Priority
Great Skua							
Green Heron				X		X	
Herring Gull			X	X		X	
Horned Grebe							
Horned Grebe (Magdalen Islands population)						X	
Horned Grebe (western population)			X	X	X		
Ivory Gull							
King Rail					X		
Leach's Storm-Petrel						X	
Least Bittern				X	X	X	
Little Gull					X		
Manx Shearwater							
Northern Gannet						X	
Pacific Loon		X					
Parasitic Jaeger		X					
Pied-billed Grebe				X		X	
Razorbill						X	
Red-necked Grebe			X	X	X		
Red-throated Loon	X						
Roseate Tern						X	
Sandhill Crane				X	X		
Sooty Shearwater							
Sora		X		X	X	X	
Thick-billed Murre							
Virginia Rail				X	X	X	
Yellow Rail		X	X	X	X	X	
Waterfowl							
American Black Duck		X	X	X	X	X	Yes
American Scoter						X	
American Wigeon			X				
Atlantic Brant		X					
Barrow's Goldeneye (eastern population)				X		X	Yes
Black Scoter		X	X	X			Yes
Blue-winged Teal				X	X		
Brant					X	X	
Bufflehead			X	X			
Canada Goose (Atlantic population)	X	X			X	X	Yes

Priority Species	BCR 3	BCR 7	BCR 8	BCR 12	BCR 13	BCR 14	EHJV Priority
Canada Goose (eastern temperate - breeding population)				X	X	X	Yes
Canada Goose (Mississippi Valley)							Yes
Canada Goose (North Atlantic)	X	X				X	Yes
Canada Goose (Resident population)					X		Yes
Canada Goose (southern James Bay)				X	X		Yes
Canvasback					X		
Common Eider (borealis)							Yes
Common Eider (dresseri)							Yes
Common Eider (sedentaria)						X	
Common Goldeneye			X	X	X	X	Yes
Common Merganser			X	X	X		
Greater Scaup				X	X		
Green-winged Teal			X	X	X	X	Yes
Harlequin Duck	X						
Harlequin Duck (eastern population)		X				X	Yes
Hooded Merganser				X	X		
King Eider							
Lesser Scaup			X	X	X		Yes
Long-tailed Duck	X		X	X	X	X	Yes
Mallard			X	X	X	X	Yes
Red-breasted Merganser		X				X	
Redhead					X		
Ring-necked Duck			X	X	X	X	Yes
Snow Goose					X		
Surf Scoter		X	X	X		X	
Tundra Swan					X		Yes
White-winged Scoter				X			
Wood Duck				X	X	X	

APPENDIX 3:

ADDITIONAL PROVINCIAL PRIORITY BREEDING WATERFOWL SPECIES

Province	Species
Ontario	
	Blue-winged Teal
	Canvasback
	Common Goldeneye
	Common Merganser
	Hooded Merganser
	Surf Scoter
	White-winged Scoter
	Wood Duck
Québec	
	Brant (Atlantic)
	Blue-winged Teal
	Common Goldeneye
	Gadwell
	Greater Scaup
	Harlequin Duck (eastern population)
	Hooded Merganser
	Redhead
	White-winged Scoter
	Wood Duck (eastern population)
New Brunswick	
	Common Goldeneye
	Wood Duck
Prince Edward Island	
	Blue-winged Teal
Newfoundland and Labrador	
	Common Goldeneye

APPENDIX 4:

EHJV PROVINCIAL SUMMARIES AND HABITAT OBJECTIVES

ONTARIO

Partners

Canada Environment Canada
and Climate Change – Canadian
Wildlife Service, Ontario
Ministry of Natural Resources
and Forestry

Ontario Ministry of Agriculture,
Food and Rural Affairs

Ducks Unlimited Canada

Nature Conservancy of Canada

Bird Studies Canada



Herb Keibel Wetland near Sparta, Ontario/David McLachlan

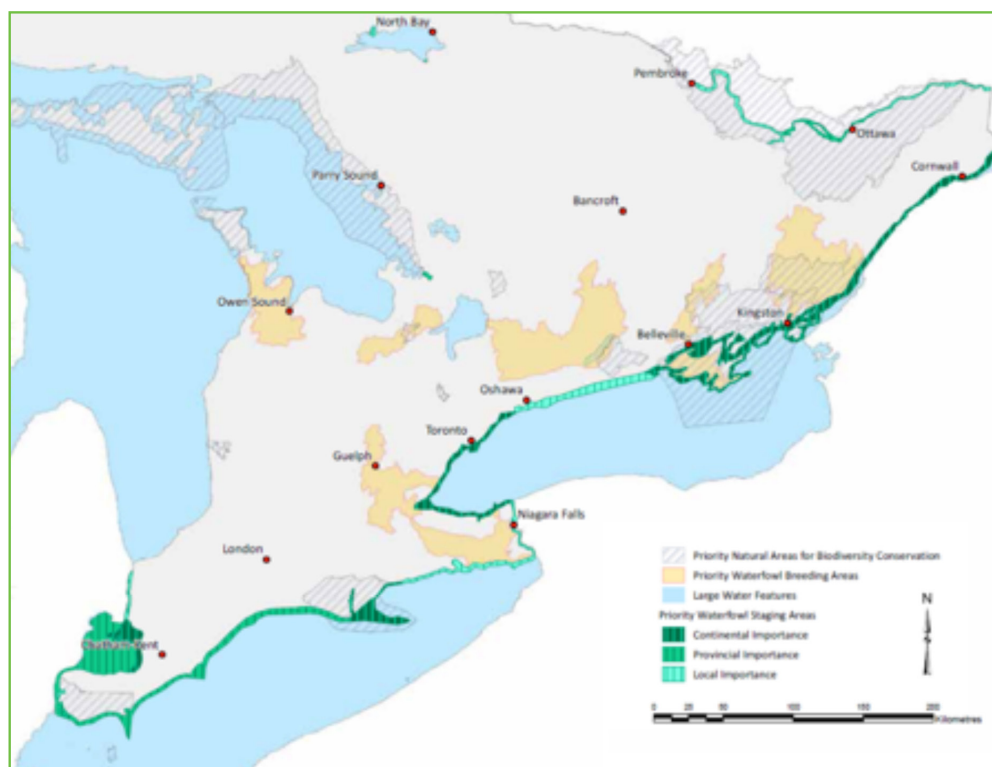


FIGURE 4
Ontario Priority Habitat Conservation Areas

The Ontario EHJV has identified priority habitat conservation areas within the province – most of these are in southern Ontario where wetland loss has been the greatest:

- Priority Natural Areas for Biodiversity Conservation
- Priority Waterfowl Breeding Areas
- Priority Waterfowl Staging Areas (continental importance, provincial importance, local importance)

Ontario EHJV Priority Habitat Conservation Areas

Habitat Retention

The Ontario EHJV defines habitat retention as activities where land is protected either long-term or in perpetuity through ownership or by conservation agreement for specified periods of time. Projects that are identified for habitat retention include acquisition of conservation land (either purchase or donation), conservation easements that are registered on title to land and conservation agreements with private landowners to protect their land for specified periods of time. Permanent (purchase, donation and easement) and medium term (10-99 years) projects are preferred due to the ecological benefits associated with long-term habitat retention.

Habitat Restoration

The Ontario EHJV supports activities that restore the ecological and/or hydrological function of wetlands that have been altered, damaged or degraded within the Province of Ontario. The habitat restoration initiative includes initiating actions such as invasive species control, vegetation planting, drainage control/alteration, the installation of water control structures and the installation of waterfowl nest boxes. Habitat restoration is broadly scoped and often site-specific and uses best management practices to achieve results (e.g., agricultural practices such as alternative watering devices for livestock and livestock exclusion fencing).

Habitat Management

Includes managing and maintaining habitat that has been retained (habitat retention) or restored (habitat restoration) through previously implemented projects. Habitat management is a broadly scoped initiative and includes actions such as the maintenance of cattle exclusion fencing, water control structures (e.g., dykes), maintenance and monitoring of waterfowl nesting structures and ongoing invasive species management (e.g., phragmites control). Habitat management is site-specific and uses best management practices established through previous management experiences to protect and maintain wetlands within Ontario.

Land and Water Policy

The Ontario Government has recently embarked on the development of a Provincial Wetland Conservation Strategy that includes a number of wetland related goals and actions to be implemented beginning in the year 2017. The Ontario EHJV is positioned to support the Ontario Government through activities that foster the development of policy approaches and improvement of policy tools to protect, restore and enhance wetlands in Ontario.

TABLE 10
Ontario Habitat Objectives and Projected Expenditures 2015-2020

Initiative	Wetland Hectares (ha)	Upland Hectares (ha)	Total Hectares (ha)	Resources Required (\$)
Habitat Retention	9,870	18,720	28,590	22,339,500
Permanent (purchase, donation, easement)	2,220	2,520	4,740	17,284,500
Medium Term (10–99 yrs)	7,650	16,200	23,850	3,255,000
Short Term (< 10 yrs)	-	-	-	1,800,000
Habitat Restoration	1710	470	2,180	15,250,000
Wetland Restoration	1,260	120	1,380	11,400,000
Nest Structure Installation	-	50	50	15,000
Wetland BMP Implementation	450	300	750	450,000
Upland Habitat Agricultural BMP Implementation	-	-	-	3,385,000
Habitat Management	106,065	289,525	395,590	26,427,000
Management of Existing Wetland Projects	102,417	289,300	391,717	3,150,000
Decommissioning Projects	48	-	48	492,000
Rebuild Projects	3,600	225	3,825	22,500,000
Nest Structure Maintenance	-	-	-	285,000
Policy	-	-	-	5,712,000
Science	-	-	-	5,164,500
Conservation Planning	-	-	-	352,000
Communication & Education	-	-	-	1,242,000
TOTAL	117,645	308,715	426,360	\$76,487,000

TABLE 11
Summary of Ontario Habitat Objectives and Projected Expenditures for 2015-2020

Initiative	Wetland Hectares (ha)	Upland Hectares (ha)	Total Hectares (ha)	Resources Required (\$)
Habitat Retention	9,870	18,720	28,590	22,339,500
Habitat Restoration	1,710	470	2,180	15,250,000
Policy	-	-	-	5,712,000
Habitat Management	106,065	289,525	395,590	26,427,000
Science	-	-	-	5,164,500
Conservation Planning	-	-	-	352,000
Communication & Education	-	-	-	1,242,000
TOTAL	117,645	308,715	426,360	\$76,487,000

Partners

Ducks Unlimited Canada
Environment and Climate
Change Canada, Canadian
Wildlife Service, Québec
Fondation de la Faune du
Québec
Ministère du Développement
durable, de l'Environnement
et de la Lutte contre les
changements climatiques
Ministère des Forêts, de la
Faune et des Parcs
Nature Conservancy of Canada –
Québec Region



Rivière du sud/Ducks Unlimited Canada

On the basis of new scientific knowledge and results obtained during the last Implementation Plan (2007-2012), EHJV Québec partners worked on three major objectives for the 2015-2020 planning:

- Develop a list of priority waterfowl taxa for the Québec EHJV
- Map the areas of intervention
- Identify a common project where all Québec EHJV partners collaborate

Figure 5 depicts the zones of conservation priorities as well as common language used to describe the zones within the Québec EHJV.

Québec EHJV Priority Habitat Conservation Areas

Intensive intervention area

The majority of programs are through:

- habitat protection
- restoration of wetlands and associated habitats
- habitat management

Extensive intervention area

EHJV partners will focus mainly on the programs associated with the land use and water management initiative.

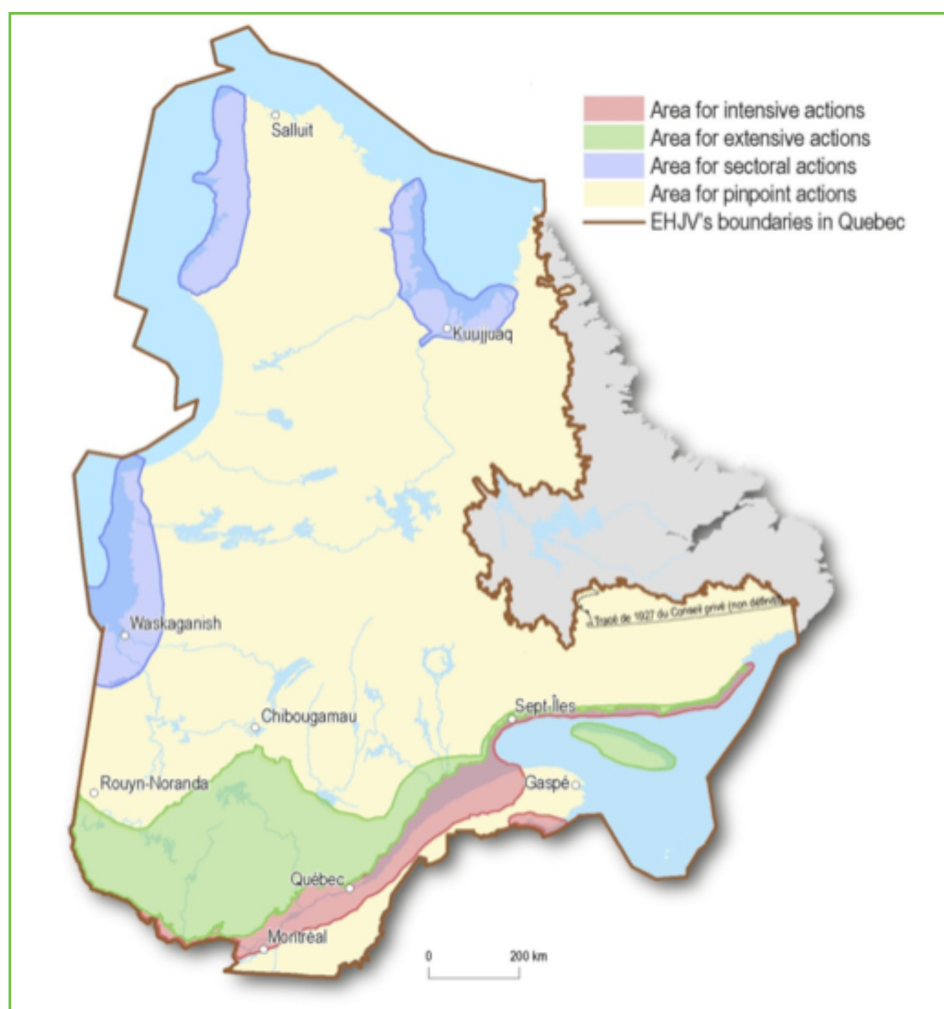


FIGURE 5
Québec Priority Habitat Conservation Areas

Sectoral intervention area

For EHJV partners this area presents a major challenge owing to its remoteness and inaccessibility, which has constrained knowledge acquisition concerning waterfowl (i.e., information has been gathered only through impact studies and inventories or research projects covering small areas). By 2020, we hope to have a preliminary picture of the waterfowl staging areas used during this critical phase in the life cycle s of the taxa found in this area.

Ad hoc intervention area

In this area, implementation of programs related to habitat intervention initiatives could be decided on the basis of specific criteria such as wetland class, integrity of the surrounding environment, areal extent, diversity of waterfowl habitats, connectivity with the hydrological system, anthropogenic pressure (type and magnitude) and the natural area prioritized for conservation.

Identification of a Common Program: Lac Saint-Pierre

Québec EHJV partners have agreed to collaborate, according to their individual capacities and priorities on the first phase of a joint project “Restoration and Protection of Wildlife Habitat at Lac Saint-Pierre (2017-2022)”. The first phase is the restoration or protection of 800 hectares of land. Several tools have been identified to achieve this target:

- Restoration (e.g., land use change, wildlife management)
- Strategic habitat protection (e.g., land acquisition, conservation easements, etc.)
- Use of legislative, regulatory or administrative frameworks
- Support local stakeholders and project promoters

Habitat Retention

Programs focusing on protecting habitat in perpetuity dominate this initiative in terms of resource requirements; they are represented primarily by fee simple acquisitions. Conservation encumbrances nonetheless account for about one third of the objectives in terms of areal extent, and the medium- and short-term actions account for two thirds. The programs will be implemented primarily in the intensive intervention area.

This initiative also includes activities associated with the production of detailed maps of the wetlands. These maps are decision-support tools for land management in southern Québec, primarily intended for municipalities. During this phase of the IP, EHJV partners intend to prioritize parts of the St. Lawrence Lowlands (the Outaouais region) and the Lac Saint-Jean plain (the physiographic unit defined in the Cadre écologique de référence du Québec produced by the MDDELCC). A subsequent stage will focus on completing all of the inhabited areas in southern Québec, for example, the Eastern Townships. The anticipated investment for achieving this objective is close to \$2 million.

In the short term, EHJV partners will increase the scope of conservation by disseminating information and raising awareness among landowners. These landowners may own property that is adjacent to land already protected by the EHJV or that includes natural areas sought after for protection by the EHJV. The purpose of these activities is to guide the landowners and encourage them to take actions and/or manage and use their land in ways that are compatible with the conservation of natural areas. There is also a possibility that some landowners, through experience, will be interested in taking further action in the medium term or in perpetuity. During the period covered by the current plan, the EHJV partners will conduct outreach efforts with the owners of 2,375 hectares of natural areas. The anticipated investment for achieving this objective is \$1.725 million.

Restoration of Wetlands / Associated Habitat

The purpose of habitat management is to offset wetland losses and degradation over time. It is a way of increasing the productivity of a site by re-establishing or re-creating habitat characteristics that have been lost or degraded.

Under this initiative, the predominant programs are those that focus on wetlands restoration. Most will be carried out in the intensive intervention area. Wetland restoration will focus primarily on wetland enhancement. Such projects are planned primarily in the Ottawa Valley and St. Lawrence corridor, primarily in the Lac Saint-Pierre floodplain. During the period covered by this plan, EHJV partners will work toward restoring 658 hectares of wetlands for a planned investment of \$2.86 million.

The restoration of associated habitat involves the implementation of agricultural best management practices, the creation and monitoring of nest structures and the use of planted nesting cover as waterfowl habitat. During the period covered by this plan, EHJV partners will work toward restoring 385 hectares of associated habitat for a planned investment of \$0.265 million.

TABLE 12
Québec Habitat Objectives and Projected Expenditures 2015-2020

Initiative	Wetland Hectares (ha)	Upland Hectares (ha)	Other hectares of habitat (if unable to break down into wetlands and assoc. hab.)	Resources Required (\$)
Habitat Retention	3,992	2,340	4,860	12,307,625
Permanent	1,867	2,090	3,040	8,682,625
Medium term	-	-	1,820	1,900,000
Short term	2,125	250	-	1,725,000
Habitat Restoration	486	407	150	3,125,706
Wetlands	486	22	150	2,860,625
Associated Habitat	-	385	-	265,081
Land Use and Water Management	375	-	-	805,000
Policy	-	-	-	495,000
Integrated Land Use Planning	375	-	-	310,000
Management of Habitat Assets	15,800	12,000	335	3,986,500
Wetlands	12,000	4,000	335	1,502,500
Upland and Associated Wetlands	3,400	8,000	-	1,234,000
Rebuild	400	-	-	1,250,000
Conservation Planning	-	-	-	3,344,765
Program Coordination	-	-	-	3,344,765
Science	-	-	-	1,783,030
Sciences	-	-	-	1,701,730
Habitat Program Evaluation	-	-	-	10,000
Habitat/Landscape Inventory	-	-	-	71,300
Communications and Education	-	-	-	1,118,000
Communications and Education	-	-	-	1,116,000
Outreach of Conservation Successes	-	-	-	2,000
Subtotal	20,653	14,747	5,345	26,470,626
TOTAL (all habitat combined)	117,645			\$26,470,626

Land Use and Water Management

This initiative comprises two components: Incentive-based Policy and Programs (initiatives under which partners attempt to increase funding for incentive based programs or how they are administered) and Regulatory-based Policy (regulatory initiatives and strategies that typically fall under government jurisdiction).

With respect to legislation on wetlands and hydric habitat, EHJV partners contribute in various ways to promoting the adoption of a strengthened legislative framework for the protection and sustainable use of wetlands and associated habitat, with a view to maintaining essential ecological services and water quality.

With respect to Integrated Planning and Land Use, EHJV partners will implement a project in the Bas-Saint-Laurent administrative region to demonstrate the feasibility of taking action to conserve wetlands and associated habitat to support bird species other than waterfowl that directly involve local community members.

Management of Habitat Assets

Projects under this initiative always involve protected property and include programs related to wetlands or associated habitat and the rebuilding of wildlife enhancements. The scope of this initiative will only cover southern Québec and will involve part of the intensive, extensive and sectoral interventions areas.

With respect to the management of assets relating to wetlands and associated habitat, the activities include, among other things, monitoring, meetings with local communities, management of users, installation of signage, basic maintenance and discharge of encumbrances.

With respect to Wetland Rebuild work, the end of the useful life of various existing assets justifies investment of resources in order to:

- Oversee maintenance of wildlife enhancements
- Re-assess wildlife objectives and review the design of each enhancement accordingly
- Re-sign agreements with landowners (where applicable)
- Reduce risks related to public safety (where applicable)
- Reduce use conflicts (where applicable)
- Upgrade or replace infrastructure

A number of wildlife enhancements near the Beauharnois Canal, along the shoreline of Lac Saint-Pierre and in Abitibi will be considered under this program. During the period covered by this plan, EHJV partners will work toward rebuilding 400 hectares with a planned investment of \$1.25 million.

Conservation Planning

Conservation planning is designed to establish actions in the different EHJV programs. It is therefore important to be familiar with the priority species and their habitat, to understand the issues that threaten them and to identify those actions that will be beneficial for the species. As a result, the Québec EHJV partner will coordinate all respective programs.

Science

The objective of the EHJV-Québec science and monitoring program is to improve the benefits of conservation actions for the investments made. The science initiative will enhance knowledge of priority species, their habitats, needs and the issues they face. This new information will then inform the priority actions to be undertaken (e.g., habitat protection, restoration and asset management).

The Science initiative will involve four programs:

- Physical Science
- Waterfowl/Wildlife Science
- Habitat Program Evaluation
- Habitat/Landscape Inventory

Communications and Education

The impacts of these programs are multi-faceted both in terms of scope and target audiences. Activities such as the EHJV's website, the promotion of legislative tools for the protection of wetlands and associated habitats and of the Implementation Plan are broad in scope. This initiative will also target school groups, owners, communities of farmers, hunters and vacationers, as well as users of wetlands and associated habitats. The topics covered are varied and include: interpretation of nature through guided tours, interpretive panels or communication tools (pamphlets and other documents, conferences and press releases), development and implementation of best management practices (agriculture, hunting, etc.) and discovery of natural environments in the context of activities for youth and others, etc.

Two specific programs will be directed at youth: the first to enable students to learn about wetlands and their associated habitats, as well as about their roles and the importance of preserving, and become ambassadors of their conservation; the second to support youth "waterfowlers" learn the ethics of hunting and respect for the environment.

TABLE 13
Summary of Québec Habitat Objectives and Projected Expenditures 2015-2020

Initiative	Wetland Hectares (ha)	Upland Hectares (ha)	Total Hectares (ha)	Resources Required (\$)
Habitat Retention	7,394	3,798	11,192	12,307,625
Habitat Restoration	591	452	1,043	3,125,706
Policy	375	-	375	805,000
Habitat Management	16,034	12,101	28,135	3,986,500
Science	-	-	-	1,783,030
Conservation Planning	-	-	-	3,344,765
Communications & Education	-	-	-	1,118,000
TOTAL	24,394	16,351	40,745	\$26,470,626

NEW BRUNSWICK

Partners

New Brunswick Department
of Energy and Resource
Development

New Brunswick Department of
Environment

Environment and Climate
Change Canada, Canadian
Wildlife Service, Atlantic

Department of National
Defense, Canadian Forces Base
Gagetown

Ducks Unlimited Canada

Nature Conservancy of Canada

New Brunswick Nature Trust



Ecologically Sensitive Area at Grindstone Island, New Brunswick/Don Vail

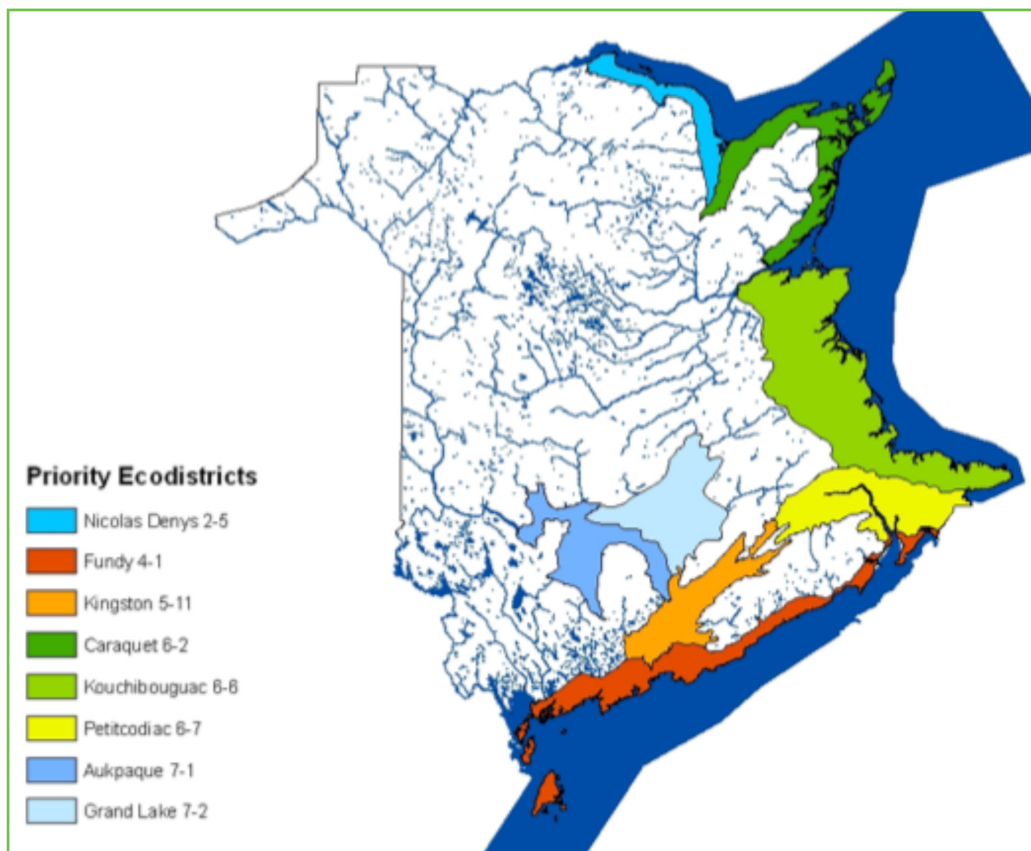


FIGURE 6
New Brunswick Priority Ecodistricts

Habitat Retention

The NB-EHJV will continue to focus habitat retention efforts within NAWMP priority ecodistricts. Habitat retention will secure 1,159 hectares (352 wetlands/807 uplands) across these ecodistricts with a primary focus on permanent retention measures. Medium-term habitat retention efforts such as 30-year conservation agreements will also be employed.

Restoration of Wetlands/Associated Habitat

Wetland restoration will focus on permanently secured lands and improving habitat productivity from degraded conditions. Hydrological restoration of old, poorly functioning projects will contribute 220 hectares toward NAWMP goals. Nesting structures for cavity nesting waterfowl will continue to be a focus for NB-EHJV priority species (e.g., Wood Duck, Common Goldeneye).

Wetland Compensation

Implementation of the New Brunswick Wetland Conservation Policy has led to the adoption of a mitigation sequence that calls for avoidance, minimization of impact, then compensation for wetland alteration or loss. Net gains in wetland habitat resulting from compensation will contribute to achieving the NB-EHJV habitat goals on approximately 365 hectares. Establishment of the wetland compensation process in the Province provides an additional tool for tracking wetland habitat change over time. This is essential in evaluating the success of the wetland policy and the net change to wetlands in New Brunswick.

Management

This activity is conducted on secured wetland and/or upland habitats to maintain the carrying capacity for migratory waterfowl and other wildlife at optimal levels. The NB-EHJV will manage 15,870 hectares of secured habitats to sustain and increase capacity of the landscape by maintaining the quality of existing habitats of NB-EHJV lands.

Land and Water Policy

There has been considerable interest in the delineation and classification of wetlands and wet areas in New Brunswick. The basic need for setting clear policy, management objectives and operational guidelines require the development of inventories identifying the location, size and type of all wetlands across the Province.

Currently in New Brunswick, wetlands are mapped through aerial photo interpretation as part of an integrated land classification system. Since 2013, LiDAR has been used in New Brunswick to produce an Enhanced Forest Inventory (EFI) for forested lands. The current EFI describes forest structure, and is used in combination with traditional photo-interpretation for forest management. To support conservation efforts, the feasibility of using LiDAR data to model the distribution and quantity of priority forested wetland and riparian habitat is being evaluated. Other satellite based remote sensing approaches are being considered for integrated into future inventory updates.

In addition to assessing the effectiveness of existing policies and regulations, mapping of provincial wetlands is an essential tool in the identification and tracking of habitat change over time. These tools will continue to be updated as an essential mechanism in the delineation of wetlands across the Province and for the tracking of habitat changes for priority waterfowl species and other migratory and non-migratory birds.

Science

Marsh Monitoring

Since 2012, in partnership with Bird Studies Canada, the NB-EHJV implemented a Marsh Monitoring program (MMP) to help assess and monitor the status of all wetland-associated species and their habitats. In particular, the MMP focuses on obtaining baseline information for secretive, solitary-breeding wetland species that are not captured by other surveys. The program has since been expanded to include forested wetlands and helps evaluate current EHJV conservation efforts, direct and prioritize wetland restoration and securement and establish wetland species population trends. The MMP is a tool that also encourages local advocates and stewards for freshwater, coastal and forested wetlands.

Conservation Planning

Planning and coordination activities associated with NB-EHJV conservation program delivery involves governmental and non-governmental coordination through the development of plans and strategies to direct conservation activities in wetland and upland habitats across the Province.

Communications and Education

NB-EHJV partners develop outreach projects that include Project Webfoot (DUC's youth education program), conservation volunteer programs and land stewardship projects. Partners reach out to the public through media and education (e.g., public relations materials, interpretive displays, brochures, press conferences, presentations and websites).

TABLE 14

Summary of the New Brunswick Habitat Objectives and Projected Expenditures 2015-2020

Initiative	Wetland Hectares (ha)	Upland Hectares (ha)	Total Hectares (ha)	Resources Required (\$)
Habitat Retention	352	807	1,159	2,057,903
Habitat Restoration	545	40	585	1,690,000
Policy	-	-	-	310,000
Habitat Management	14,330	1540	15870	2,465,000
Science	-	-	-	625,000
Conservation Planning	-	-	-	822,000
Communications & Education	-	-	-	1,450,000
TOTAL	15,227	2,387	17,614	\$9,419,903

NOVA SCOTIA

Partners

Nova Scotia Department of
Natural Resources

Nova Scotia Department of
Agriculture

Environment and Climate
Change Canada, Canadian
Wildlife Service, Atlantic

Ducks Unlimited Canada

Nature Conservancy of Canada



Deep Cove/Nature Conservancy of Canada

Habitat Retention

Nova Scotia EHJV Partners will focus permanent habitat retention efforts primarily on restorable land and significant wetlands under threat. This will also include the Owners Unknown Land Securement program with priorities for salt marsh and coastal island habitats. Medium term habitat retention efforts include signing 30-year Conservation Agreements with new private landowners. Habitat retention efforts will secure 1,131 hectares of habitat (452 hectares of wetlands and 679 hectares of associated upland).

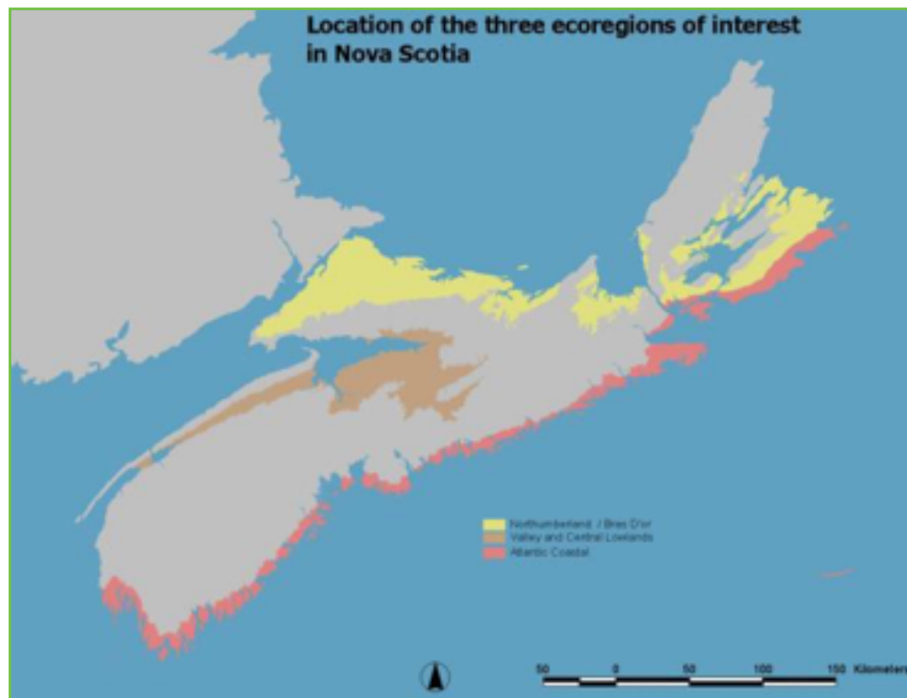


FIGURE 7
Nova Scotia Priority Ecoregions

Wetland and Upland Restoration

Agricultural Best Management Practice (BMP) Implementation: The Nova Scotia Agricultural Biodiversity Program, a key stewardship program on farms, promotes BMPs through the development of Agricultural Biodiversity Conservation plans. These plans outline activities that producers can implement on farms, such as wetland/upland restoration, watercourse fencing and delayed hay harvesting, to increase habitat for wildlife. This program will positively influence approximately 1,719 hectares (303 hectares of wetlands and 1,416 hectares of associated uplands).

Compensatory Mitigation: The delivery of wetland compensation projects in the Province by Ducks Unlimited Canada (DUC) is based on permitted impacts per year through Nova Scotia's Wetland Conservation Policy. The program is expected to restore 95 hectares of habitat (75 hectares of wetlands and 20 hectares of uplands).

Ecological Restoration: Nature Conservancy of Canada is leading restoration of Big Meadow Bog and associated marshland on Brier Island that have had a long history of ditch development and drainage impacting the natural ecology of the area. The program is expected to restore 40 hectares of wetland habitat.

Hydrological Restoration: DUC is leading the restoration of several pre-EHJV wetland projects and new projects not funded through mitigation. This program is expected to restore 220 hectares of habitat (200 hectares of wetlands and 20 hectares of uplands).

Land and Water Policy

Wetland Policy: DUC will continue to support provincial wetland policy and participate during stakeholder consultation and assist governments where appropriate and possible.

Management (Habitat Assets)

Engineered Wetlands: Small repair and general maintenance and management of existing North American Wetland Conservation Act (NAWCA) projects in Nova Scotia total approximately 15,128 hectares of habitat (10,268 hectares of wetlands and 4,860 hectares of uplands).

Wetland Rebuilds: Major repairs and water control replacement of NAWCA projects in Nova Scotia total approximately 200 hectares of wetland habitat.

Decommission Wetlands: The naturalization of specific projects that will function better in their historic state. These activities will result in improved wetland function and reduced future maintenance/management costs (80 hectares).

Science

Habitat Program Evaluation: Direct research to evaluate long-term maintenance of managed projects to support the development of a management strategy to address sustainable productivity. Expenses include student support, equipment and staff time. It also includes monitoring programs to evaluate how effective conservation efforts are in terms of the health of ecosystems (wetlands) and reaching species (waterfowl) targets.

Physical Science: Using a newly developed "restoration research wetland", EHJV partners plan to investigate water introduction to restored areas and how water chemistry parameters change as wetlands are restored. This science activity will also include continued salt marsh restoration research and applying results to the design of new restoration projects.

Habitat/Landscape Inventory: Various initiatives including improvements to forested wetland inventory and eelgrass mapping in Pugwash and Musquodoboit Harbour estuaries and updating the Nova Scotia Wetland Inventory.

Waterfowl/Wildlife Science: Includes investments towards improving fish passage in wetland management projects, exploring local American Black Duck and Mallard interactions, Common Eider ecology and conservation research, evaluating changes in waterfowl distributions across the province and studies to assess the ecological integrity of forested wetlands using bird communities, stand structure and juxtaposition relative to land cover/land-use parameters.

Conservation Planning

Program Coordination and Planning Tools: Planning and coordination activities associated with EHJV/NAWMP conservation program delivery in Nova Scotia involve government and non-governmental coordination, including the development of plans and strategies to direct conservation activities in wetland and upland habitats across the Province.

Communications and Education

This captures EHJV partner efforts to reach the public to increase wetland value awareness including various projects delivered under the NS-EHJV Wetland Stewardship Program, Project Webfoot (DUC's youth education program) and public communications through media and education (e.g., public relations materials, interpretive displays and brochures).

TABLE 15
Summary of Nova Scotia Habitat Objectives and Projected Expenditures

Initiative	Wetland Hectares (ha)	Upland Hectares (ha)	Total Hectares (ha)	Resources Required (\$)
Habitat Retention	452	679	1,131	4,736,043
Habitat Restoration	618	1,456	2,074	3,220,000
Policy	-	-	-	60,000
Habitat Management	10,548	4,860	15,408	2,460,000
Science	-	-	-	460,000
Conservation Planning	-	-	-	877,000
Communications & Education	-	-	-	550,000
TOTAL	11,288	6,375	18,613	\$12,363,043

PRINCE EDWARD ISLAND

Partners

Prince Edward Island
Department of Communities,
Lands and Environment
Environment and Climate
Change Canada, Canadian
Wildlife Service, Atlantic
Ducks Unlimited Canada
Nature Conservancy of Canada

Habitat Retention

Permanent Habitat retention by NCC on Prince Edward Island will focus on coastal salt marsh and off-shore islands through fee simple land securement by purchase and/or donation. Up to 242 hectares in total are expected to be secured by

NCC over the 5-year period. DUC will partner with the Province to purchase lands (up to 250 hectares) near Wildlife Management Areas and in coastal areas over the next five years. In addition, a project to identify the extent of coastal wetlands expected to be impacted by sea level rise will help guide securement efforts in the near future. Medium habitat retention efforts will include 30-year Conservation Agreements with private landowners.



Gill Marsh Project, Prince Edward Island/Tom Duffy

Wetland and Upland Restoration

Compensatory Mitigation: The PEI Wetland Conservation Policy will continue to be implemented by the Province with an emphasis on prevention and avoidance, followed by mitigation, and as a last resort compensation. It is expected that up to 2 projects (potentially 15 hectares) may result from compensation action.

Land and Water Policy

The PEI Wetland Conservation Policy will continue to be implemented with an emphasis on avoidance.

Management (Habitat Assets)

Engineered wetlands: General maintenance and repair and management of existing NAWCA projects on PEI totaling approximately 4,220 hectares of habitat (1,880 hectares of wetlands and 2,340 hectares of uplands).

Wetland rebuilds: Major repair and water control rebuilds of NAWCA projects on PEI (approximately 40 hectares of wetland habitat).

Science

Habitat Program Evaluation: NCC Effectiveness Monitoring Program to evaluate how effective conservation efforts are contributing to the health of ecosystems (wetlands) and species (waterfowl) targets.

Coastal Salt Marsh – Sea Level Rise Impact Project: The purpose of this project was to: i) Identify properties that are good candidates for securement based on the 2050 salt marsh extent predictions; ii) Identify barriers to salt marsh migration using sea-level rise predictions and iii) Investigate the susceptibility of freshwater impoundments to flooding as a result of sea-level rise.

Conservation Planning

Conservation Planning for Prince Edward Island includes the following:

- NCC – Aquatic Blueprint / Planning Tools – \$167,000 for the development of a conservation blueprint to direct conservation efforts in aquatic and riparian habitats
- NCC – PEI Coast and Forest Natural Areas Conservation Plans (NACP) – \$30,000 for the development of Natural Area Conservation Plans to direct conservation activities
- Coastal Salt Marsh – Sea Level Rise Impact Project: The purpose of this project is to: i) Identify properties that are good candidates for securement based on the 2050 salt marsh extent predictions; ii) Identify barriers to salt marsh migration using sea-level rise predictions and iii) Investigate the susceptibility of freshwater impoundments to flooding as a result of sea-level rise (\$100,000)

Communications and Education

Public communications through media and education (\$50,000 over five years) includes costs for public relations materials, and products such as displays, brochures, press conferences, presentations and websites.

TABLE 16
Summary of Prince Edward Island Habitat Objectives
and Projected Expenditures 2015-2020

Initiative	Wetland Hectares (ha)	Upland Hectares (ha)	Total Hectares (ha)	Resources Required (\$)
Habitat Retention	300	200	500	400,000
Habitat Restoration	5	10	15	225,000
Policy	-	-	-	50,000
Habitat Management	2,418	1,894	4,312	1,100,000
Science	-	-	-	175,000
Conservation Planning	-	-	-	267,000
Communication & Education	-	-	-	50,000
TOTAL	2,723	2,104	4,827	\$2,267,000

NEWFOUNDLAND AND LABRADOR

Partners

Newfoundland and Labrador
Department of Fisheries and
Land Resources

Environment and Climate
Change Canada, Canadian
Wildlife Service, Atlantic

Ducks Unlimited Canada

Nature Conservancy of
Canada

Stewardship Association of
Municipalities, Inc.

Habitat Retention

A primary goal of the Nature Conservancy of Canada (NCC) in the NL-EHJV is protecting habitat in perpetuity primarily by fee simple acquisitions. These include straightforward purchase and sale, land donations and donations of land as a partial or complete Ecological Gift under Environment and Climate Change Canada's Ecological Gifts Program.

With this habitat retention program comes associated activities including detailed mapping of habitat and inventory of species using the land. NCC will continue to identify high priority areas for conservation and reach out to landowners in the area to see if they are interested in seeing their lands protected. During the period covered by the current plan, NCC aims to secure private lands with wetlands and associated buffers, private lands in riparian zones, private lands with forest habitat and private lands that provide natural buffers to seabird colonies.

Guided by the EHJV, the Department of Fisheries and Land Resources seeks to engage citizens in the conservation of important habitat for wildlife. The goal is to identify productive wildlife habitat and work with municipalities, non-profit organizations, landowners, developers and corporations to seek a balance which meets the needs of present generations but also ensure the long-term conservation of the habitat to support wildlife. This is formalized via the signing of agreements between the parties. Although the agreements serve, first and foremost, to secure important habitat, the overarching goal of these long-term agreements is to increase awareness and the sense of personal responsibility and conservation ethics, of decision makers and individual community residents, for wildlife and



The Hermitage/Heather Chaffey

habitat conservation. This is accomplished through ongoing education and engagement of agreement signatories. Formal input on proposed developments also occurs as part of ongoing implementation of approved agreements enshrined in municipal planning documents and development regulations.

The Department seeks to increase the profile of more productive and rare habitat types, such as wetlands, in municipal, provincial and federal land-use planning. This includes efforts working towards the implementation of the provincial Natural Areas Systems Plan.

Habitat Restoration

Ducks Unlimited Canada will assess opportunities for wetland restoration on a priority basis and as funding permits.

The Department of Fisheries and Land Resources seeks to engage citizens in the restoration and enhancement of important habitat for wildlife, primarily wetlands for migratory bird species. This includes working with existing municipal stewardship agreement signatories to actively restore and enhance damaged and degraded wetland habitat. In particular, the Department supports partners with seed funding, in preparing funding proposals and in implementing projects directed towards the stewardship of wetlands and migratory bird habitat.

Opportunities for restoring and enhancing wetlands are not well known, nor prioritized in the Province. The Stewardship Association of Municipalities Inc. (SAM) partnership establishes and maintains a database of potential wetland restoration and enhancement projects, in particular, those associated with sites of historical development, often found within municipal planning boundaries. SAM is also actively partnering with its member municipalities and Newfoundland and Labrador conservation organizations in on-the-ground wetland restoration projects.

Management of Habitat Assets

DUC will continue to maintain managed wetland sites comprising about 890 hectares as well as conservation lands owned by DUC totalling 280 hectares at locations across Newfoundland.

Land and Water Policy

In order to maintain the current wetland habitat base, a national priority for DUC is to support wetland conservation policy development and implementation in all provinces and territories including Newfoundland and Labrador. DUC will continue to encourage policies and regulations that protect wetlands for multiple values. DUC will also support strategic protected areas designations such as the establishment of the proposed Upper Humber Wildlife Reserve and the Natural Areas System Plan.

Advocating for improved provincial habitat management policies, namely a new wetland conservation policy, it is SAM's goal that such a policy would provide municipal and provincial governments, members of the public, corporations and developers clarity when handling proposed developments impacting wetlands. SAM is also collaborating with C-CORE/Looknorth and Memorial University researchers and other NL-EHJV partners on a wetland mapping project designed to better classify wetland types, prioritize conservation actions and support the implementation of a provincial wetland conservation policy.

The Department of Fisheries and Land Resources leads the implementation of the NL-EHJV in part through its involvement in a suite of committees associated with national and provincial conservation planning such as the EHJV Management Board and NL-EHJV Steering and Committees. The Department is also leading an effort to cooperatively develop a provincial wetlands strategy and supporting wetland inventory to guide development and avoid or reduce negative effects on valuable wetlands. The strategy will provide a formal framework to support conservation work currently undertaken by municipalities. The primary purpose of a provincial wetland conservation policy would be to conserve wetlands in Newfoundland and Labrador through management practices that balance the need for protection with the need for sustainable economic development.

Conservation Planning

In NL, the NCC is currently working in two Natural Areas: the Southwest Newfoundland Natural Area and the Avalon Peninsula Natural Area. Both of these Natural Areas have 10-year Natural Area Conservation Plans (NACPs) in place. In addition to land acquisition goals, NCC plans to carry out active stewardship on all current NCC Nature Reserves by conducting annual property monitoring. NCC will also be actively participating in a number of research partnerships with Memorial University, including a moose browse and forest modeling study to plan for the long-term health of forest habitat on NCC's land and a social science study to learn how to best collaborate and work within a community on the Avalon Peninsula.

DUC will work to revise the provincial Boreal Conservation Strategy.

Communications and Education

A key action for NCC in the Province is engaging the public in conservation volunteer and outreach events. NCC's Conservation Volunteer program recruits people from local communities to assist in caring for NCC's nature reserves while learning about the unique habitat, animals and plants that are just beyond their backyard. Local land stewards are engaged to help manage NCC nature reserves, getting out on the land when NCC cannot. NCC is also committed to giving presentations in schools, local naturalist clubs and hosting events to share messages of conservation. As well, NCC will continue to build relationships with our conservation partners in the Province to help collaborate on conservation initiatives and conservation science wherever possible.

SAM continues to support the work of the Department of Fisheries and Land Resources by working with its existing 37 municipal members to help build and sustain conservation ethic through education, awareness and involvement by town residents and decision makers, often via involvement in habitat restoration or enhancement activities.

To improve wetland conservation awareness, DUC will expand and deliver youth education programs primarily through the Project Webfoot Wetland Education Program targeted towards the elementary school level and seek to establish a Wetland Centre of Excellence School at an intermediate or high school level. DUC will further aim to engage current supporters and volunteers in conservation through targeted communications and by providing hands-on stewardship opportunities. This may include building and installing nest box shelters aimed at supplementing habitat for cavity nesting of waterfowl or Common Eider in coastal areas, two programs DUC will continue to implement through community partnerships.

DUC will pursue collaborations and partnerships with other groups, volunteers, indigenous communities, industry and various levels of government, in order to expand capacity to deliver an effective conservation program in the Province through habitat conservation, scientific research, public policy initiatives, community outreach and environmental education programs.

TABLE 17
**Summary of Newfoundland and Labrador Habitat Objectives
and Projected Expenditures 2015-2020**

Initiative	Wetland Hectares (ha)	Upland Hectares (ha)	Total Hectares (ha)	Resources Required (\$)
Habitat Retention	1,310	15,905	17,215	2,288,648
Habitat Restoration	-	225	225	110,000
Policy	-	-	-	150,000
Habitat Management	3,188	2,566	6,668	575,000
Science	-	-	-	200,000
Conservation Planning	-	-	-	150,000
Communication & Education	-	-	-	450,000
TOTAL	4,498	18,696	24,108	\$3,923,648

APPENDIX 5:

EHJV-WIDE PRIORITY ACTIVITIES AND ASSOCIATED COSTS BY INITIATIVE AND PROVINCE

Initiative		Program	WETLAND (ha)						UPLANDS (ha)					
			ON	QC	NB	NS	PEI	NL	ON	QC	NB	NS	PEI	NL
Habitat Retention	Permanent	Acquisitions	2,220	3,995	252	452	293	100	2,520	3,002	807	679	195	100
	Medium-term	Conservation Agreements	7,650	1,274	100	0	0	0	16,200	546	0	0	5	0
		Municipal/Industry Agreements (i.e. SAM)	0	0	0	0	7	1,210	0	0	0	0	0	805
	Short-term	Stewardship / Incentives	0	2,125	0	0	0	0	0	250	0	0	0	15,000
		TOTAL	9,870	7,394	352	452	300	1,310	18,720	3,798	807	679	200	15,905
Habitat Restoration		Hydrological Restoration	0	536	220	200	5	0	0	67	0	20	10	0
		Wetland BMP Implementation	450	0	0	0	0	0	300	0	0	0	0	0
		Upland Habitat Agricultural BMP Implementation	0	0	0	303	0	0	0	150	0	1,416	0	0
		Compensatory Mitigation	0	0	365	75	0	0	0	0	0	20	0	0
		Ecological Restoration	1,260	0	0	40	0	0	120	0	0	0	0	0
		Nest Structures	0	0	0	0	0	0	50	200	0	0	0	225
		Extension	0	55	0	0	0	0	0	35	0	0	0	0
		TOTAL	1,710	591	585	618	5	0	470	452	0	1,456	10	225
Management of Habitat Assets (HAM)		Natural Wetlands	0	12,234	5,558		846	412	0	4,101	0	0	0	0
		Engineered Wetlands	58,522	0	7,895	10,268	1,512	1,124	0	0	0	4,860	1,894	0
		Upland and Associated Wetlands	43,895	3,400	0	0	0	0	289,300	8,000	2,417	0	0	2,116
		Wetland Rebuild	3,600	400	200	200	60	830	225	0	0	0	0	0
		Decommission Projects	48	0	0	80	0	0	0	0	0	0	0	0
		Nest Structures	0	0	0	0	0	0	0	0	0	0	0	0
		TOTAL HAM	102,465	15,634	13,453	10,348	2,358	1,536	289,525	12,101	2,417	4,860	1,894	2,566
		TOTAL Rebuild	3,600	400	200	200	60	830	225	0	0	0	0	0
Land and Water Policy		0	375	0	0	0	0	0	0	0	0	0	0	
Science		0	0	0	0	0	0	0	0	0	0	0	0	
Conservation Planning		0	0	0	0	0	0	0	0	0	0	0	0	
Communication and Education		0	0	0	0	0	0	0	0	0	0	0	0	
TOTALS*			9,870	7,394	352	452	300	1,310	18,720	3,798	807	679	200	15,905

* Habitat hectares retained, restored and managed are not additive. Hectares are first secured, may then be enhanced and are subsequently placed under management.

TOTAL			COSTS						5 year Costs
Wetland	Upland	Total	ON	QC	NB	NS	PEI	NL	
7,312	7,303	14,615	\$17,284,500	\$8,682,625	\$2,057,903	\$4,736,043	\$400,000	\$1,038,648	\$34,199,719
9,024	16,751	25,775	\$3,255,000	\$1,900,000	\$ -	\$ -	\$ -	\$ -	\$5,155,000
1,217	805	2,022	\$ -	\$ -	\$ -	\$ -	\$ -	\$1,250,000	\$1,250,000
2,125	15,250	17,375	\$1,800,000	\$1,725,000	\$ -	\$ -	\$ -	\$ -	\$3,525,000
19,678	40,109	59,787	\$22,339,500	\$12,307,625	\$2,057,903	\$4,736,043	\$400,000	\$2,288,648	\$44,129,719
961	97	1,058	\$ -	\$2,860,625	\$1,690,000	\$400,000	\$225,000	\$ -	\$5,175,625
450	300	750	\$450,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$450,000
303	1,566	1,869	\$3,385,000	\$28,601	\$ -	\$900,000	\$ -	\$ -	\$4,313,601
440	20	460	\$ -	\$ -	\$ -	\$1,800,000	\$ -	\$ -	\$1,800,000
1,300	120	1,420	\$11,400,000	\$ -	\$ -	\$120,000	\$ -	\$ -	\$11,520,000
0	475	475	\$15,000	\$135,000	\$ -	\$ -	\$ -	\$110,000	\$260,000
55	35	90	\$ -	\$101,480	\$ -	\$ -	\$ -	\$ -	\$101,480
3,509	2,613	6,122	\$15,250,000	\$3,125,706	\$1,690,000	\$3,220,000	\$225,000	\$110,000	\$23,620,706
19,050	4,101	23,151	\$ -	\$1,502,500	\$ -	\$ -	\$ -	\$ -	\$1,502,500
79,321	6,754	86,075	\$2,625,000	\$ -	\$1,365,000	\$2,000,000	\$400,000	\$300,000	\$6,690,000
47,295	301,833	349,128	\$525,000	\$1,234,000	\$ -	\$ -	\$ -	\$ -	\$1,759,000
5,290	225	5,515	\$22,500,000	\$1,250,000	\$1,100,000	\$300,000	\$700,000	\$125,000	\$25,975,000
128	0	128	\$492,000	\$ -	\$ -	\$160,000	\$ -	\$ -	\$652,000
0	0	0	\$285,000	\$ -	\$ -	\$ -	\$ -	\$150,000	\$435,000
145,794	312,913	458,482	\$3,927,000	\$2,736,500	\$1,365,000	\$2,160,000	\$400,000	\$450,000	\$11,038,500
5,290	225	5,515	\$22,500,000	\$1,250,000	\$1,100,000	\$300,000	\$700,000	\$125,000	\$25,975,000
375	0	375	\$5,712,000	\$805,000	\$310,000	\$60,000	\$50,000	\$150,000	\$7,087,000
0	0	0	\$5,164,500	\$1,783,030	\$625,000	\$460,000	\$175,000	\$200,000	\$8,407,530
0	0	0	\$352,000	\$3,344,765	\$822,000	\$877,000	\$267,000	\$150,000	\$5,812,765
0	0	0	\$1,242,000	\$1,118,000	\$1,450,000	\$550,000	\$50,000	\$450,000	\$4,860,000
19,678	40,109	59,787	\$76,487,000	\$26,470,626	\$9,419,903	\$12,363,043	\$2,267,000	\$3,923,648	\$130,931,220

APPENDIX 6:

ACRONYMS AND ABBREVIATIONS

ACSS	Atlantic Canada Shorebird Survey
BBS	Breeding Bird Survey
BCR	Bird Conservation Region
BDJV	Black Duck Joint Venture
BMP	Best Management Practise
BSC	Bird Studies Canada
CMMN	Canadian Migration Monitoring Network
CPA	Conservation Priority Area
CWS	Canadian Wildlife Service
DUC	Ducks Unlimited Canada
ECCC	Environment and Climate Change Canada
EHJV	Eastern Habitat Joint Venture
ESA	Eastern Survey Area
EWS	Eastern Waterfowl Survey
GIS	Geographic Information System
IP	Implementation Plan
IBP	Indicated Breeding Pairs
JV	Joint Venture
LTA	Long-term Average
MMP	Marsh Monitoring Program
NABCI	North American Bird Conservation Initiative
NACP	Natural Areas Conservation Plan
NAWCA	North American Wetlands Conservation Act
NAWMP	North American Waterfowl Management Plan
NB	New Brunswick
NCC	Nature Conservancy of Canada
NL	Newfoundland and Labrador
NS	Nova Scotia
ON	Ontario
OSS	Ontario Shorebird Survey
PEI	Prince Edward Island
QC	Québec
SDJV	Sea Duck Joint Venture
USFWS	U.S. Fish and Wildlife Service
WBPHS	Waterfowl Breeding Population Habitat Survey
WHC	Wildlife Habitat Canada



North Enmore Percival River/Nature Conservancy of Canada

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