September 2017

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HabitatMatters

2017 Canadian NAWMP Report

"Tranquil Waters – Canada Geese" from the 2017 Canadian Wildlife Habitat Conservation Stamp series.

Artist: Angela Lorenzen, Thorndale, Ontario

North American Waterfowl Management Plan

Plan nord-américain de gestion de la sauvagine

Plan de Manejo de Aves Acuáticas Norteamérica

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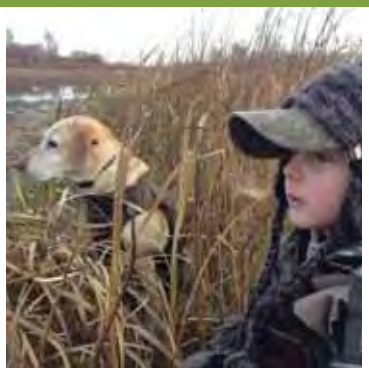
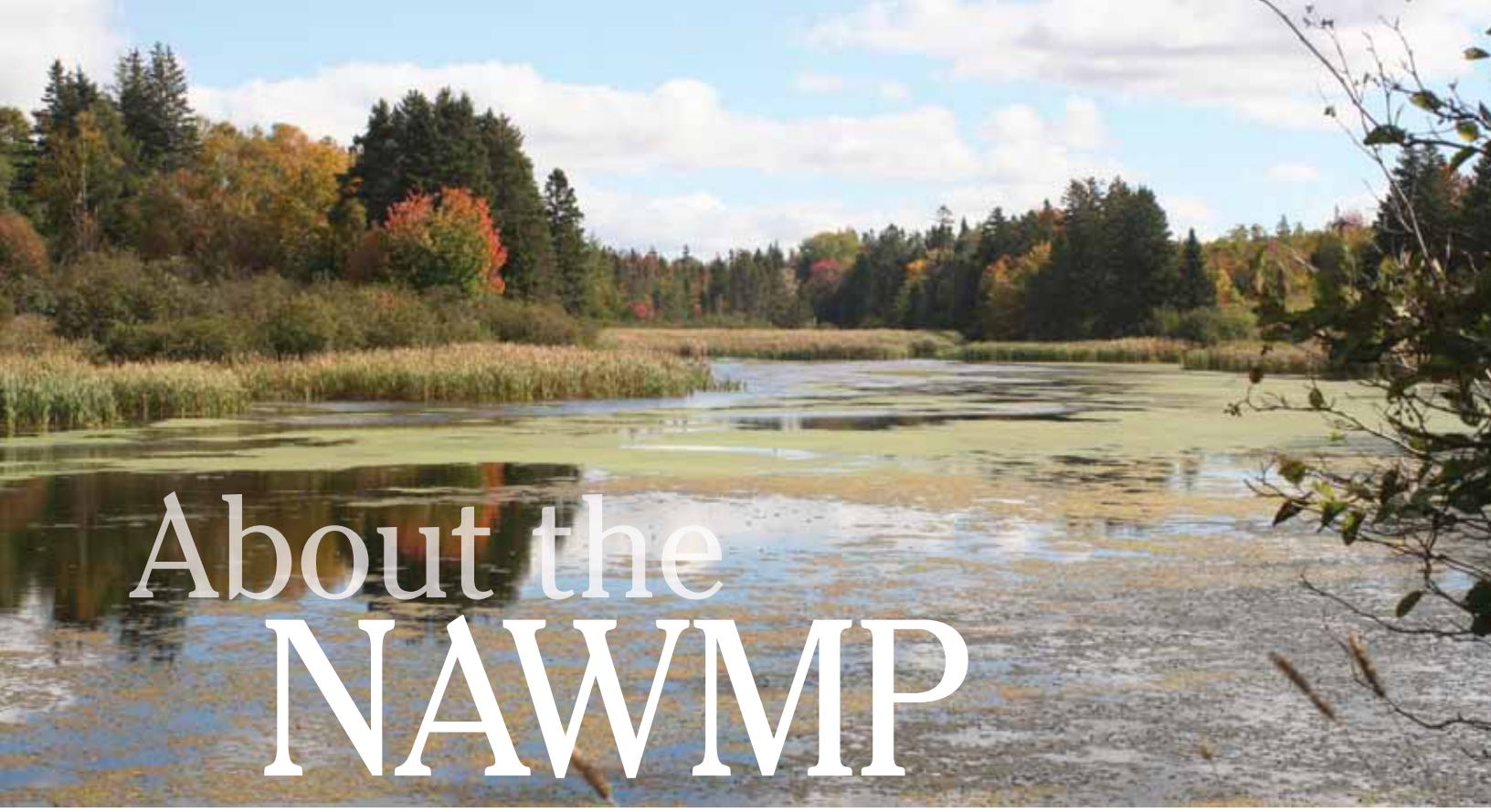




About the NAWMP

Open water and shallow marsh at MacLeans Pond, Vernon River, Prince Edward Island.

Molly Tomlik

The North American Waterfowl Management Plan (NAWMP or 'the Plan') is an international partnership to restore, conserve and protect waterfowl populations and associated habitats through management decisions based on strong biological foundations. The ultimate goal is to achieve abundant and resilient waterfowl populations and sustainable landscapes. The Plan engages the community of users and supporters committed to conservation and valuing waterfowl.

In 1986, the Canadian and American governments signed this international partnership agreement, laying the foundation for international cooperation in the recovery of declining waterfowl populations. Mexico became a signatory to the Plan with its update in 1994. As a result, the NAWMP partnership extends across North America, working at national and regional levels on a variety of waterfowl and habitat management issues.

Since the creation of the Plan, NAWMP partners have worked to conserve and restore wetlands, associated uplands and other key habitats for waterfowl across Canada, the United States and Mexico. The partners have had wide-ranging influence: shaping land-use, agricultural and public policies; integrating science and monitoring systems into planning; and delivering habitat programs. The results of these efforts are notable. Many waterfowl populations are substantially larger now than they were in 1986, and NAWMP partners have reached out to collaborate with other bird conservation initiatives.

In Canada, NAWMP partner activities are directed by public–private Joint Venture partnerships, which focus on areas or species of concern identified in the Plan. Each Joint Venture includes a range of partners from federal, provincial and local governments to conservation organizations. Implementation and Strategic Plans, developed based on the Plan's goals as well as on pressures specific to the Joint Ventures, form the basis of each Joint Venture's programs and individual projects.

Terminology used in this report

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

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

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

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

National Overview

Green-winged Teal.
Jean-Maxime Pelletier

Accomplishments by Habitat Joint Ventures (1986–2017)

20.9
Million acres of habitat secured
(8.5 M Hectares)
Involves the protection of habitat through land title transfer or binding legal agreements with landowners (10-year minimum).

140.6
Million acres of habitat influenced
(56.9 M Hectares)
Involves direct actions that protect or enhance habitat without legal or binding agreements. These actions result in applied land-use change.

3.8
Million acres of habitat enhanced
(1.5 M Hectares)
Involves actions that increase habitat carrying capacity for waterfowl and other wildlife.

12.5
Million acres of habitat managed
(5.1 M Hectares)
Involves activities that manage and maintain habitat carrying capacity for waterfowl and other wildlife.

Accomplishments by Habitat Joint Ventures (2016–2017)

928.6
Thousand acres of habitat secured
(375.8 K Hectares)

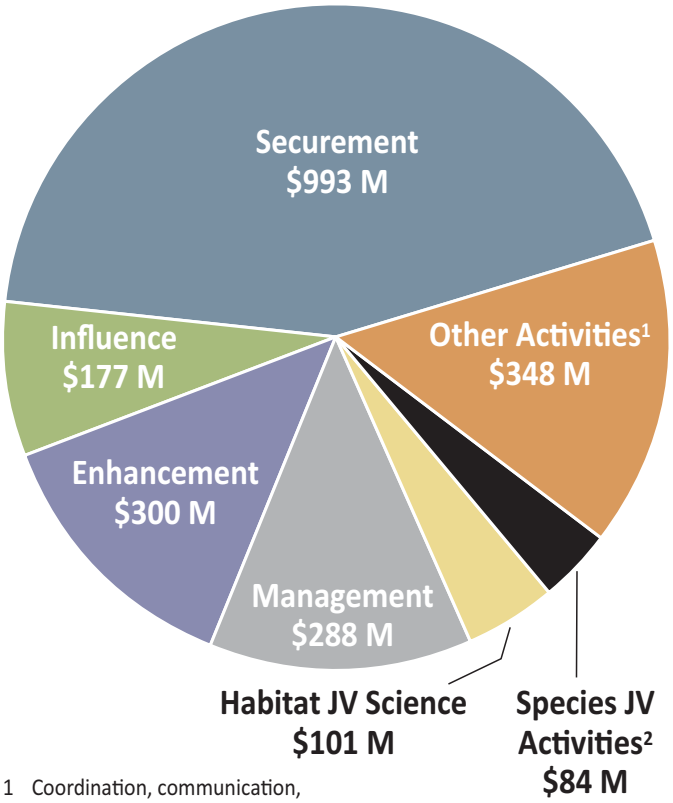
1,882.0
Thousand acres of habitat influenced
(761.6 K Hectares)

130.3
Thousand acres of habitat enhanced
(52.7 K Hectares)

863.0
Thousand acres of habitat managed
(349.2 K Hectares)

Expenditures

By activity 1986 to 2017 ($2,291 M CAD)



1 Coordination, communication, policy and crop damage

2 Banding, survey and research

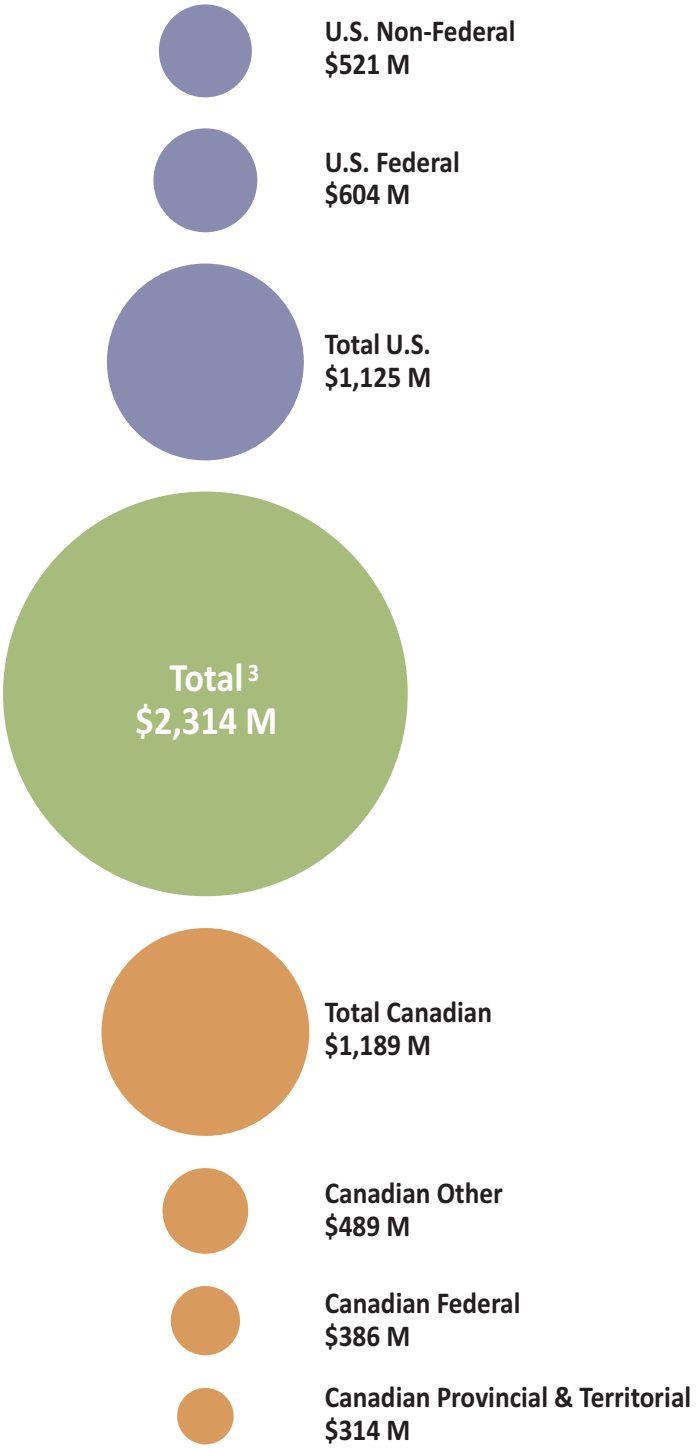
The successful implementation of Canada's NAWMP program has been enabled by the continuous support of partners in both Canada and the United States, including federal, provincial/territorial and state governments, non-governmental organizations and individuals. In particular, funding received under the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

1986-2017 consists of the January 1, 1986 to March 31, 2017 time frame.

2016-2017 consists of the April 1, 2016 to March 31, 2017 time frame.

Contributions

In support of the NAWMP in Canada 1986 to 2017 ($2,314 M CAD)



3 Includes $0.24 M in international contributions

A Renewed NAWMP: The Importance of Individuals and Communities

Snow Geese on Bylot Island, Nunavut.
Christian Marcotte

> Without hunters, birders, landowners, volunteers and citizen scientists, conservation work in this country wouldn't be where it is today.

North America's remarkable landscapes have been home for century upon century to diverse and bountiful wildlife, including great flocks of waterfowl, shorebirds and other birds, both migratory and resident. The Indigenous Peoples living in these landscapes worked closely with the land and wildlife, making a deep and lasting impression on their cultures and descendants. Much more recently, European explorers and then settlers arrived to discover this expansive continent with seemingly endless forests, grasslands, coastlines and freshwaters, all containing an astonishing array of species.

In 2017, Canada marked 150 years of Confederation, leading Canadians to reflect on this country's and this land's past and to look toward its future. Canada's first 150 years as a country have included both ups and downs as its Indigenous Peoples, settlers and immigrants built a shared history. Canada has come to mean many things, a few of which are a land of great diversity in people and cultures, a land of stunning natural beauty, a land filled with vast tracts of wilderness and a land with numerous plant and animal species.

As a result of human settlement and development since the time of European exploration, Canada is also a land with habitats and species in need of protection and often restoration. Over the past century, various treaties and protection laws have come into effect in an effort to reverse some of the environmental degradation in an effort to conserve remaining habitats, communities and wildlife populations. One of the first was the *Migratory Birds Convention* (MBC) between Canada and the United States. Signed in 1916, the MBC was intended to regulate migratory bird harvesting and ensure the long-term conservation of migratory birds.

Seventy years later, in 1986, Canada and the United States signed the North American Waterfowl Management Plan (NAWMP), followed, in 1989, by the United States enacting the *North American Wetlands Conservation Act* (NAWCA). NAWCA has provided a vital funding mechanism and leveraging tool for conservation projects that advance the NAWMP goals.

A boy and his retriever getting ready for duck hunting in the Prairies.
Jason Caswell

The NAWMP is a highly effective waterfowl conservation strategy that has paved the way for many achievements and continues to provide guidance for ongoing recovery and conservation efforts for migratory waterfowl and other birds. Five years ago, Canada, the United States and Mexico reinvigorated their commitment to waterfowl and key habitats by signing the *NAWMP 2012: People Conserving Waterfowl and Wetlands*, a document to guide the NAWMP community into the future.

The NAWMP 2012 focuses in particular on expanding an engaged community of users and supporters, including hunters and non-hunters alike. Regardless of their interests, these people are all committed to conserving and valuing waterfowl and their habitats as essential characteristics of the North American landscape. Three goals are identified in the NAWMP 2012:

Goal 1: Abundant and resilient waterfowl populations to support hunting and other uses without imperilling habitat.

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.

Goal 3: **Growing numbers of waterfowl hunters, other conservationists and citizens who enjoy and actively support waterfowl and wetlands conservation.**

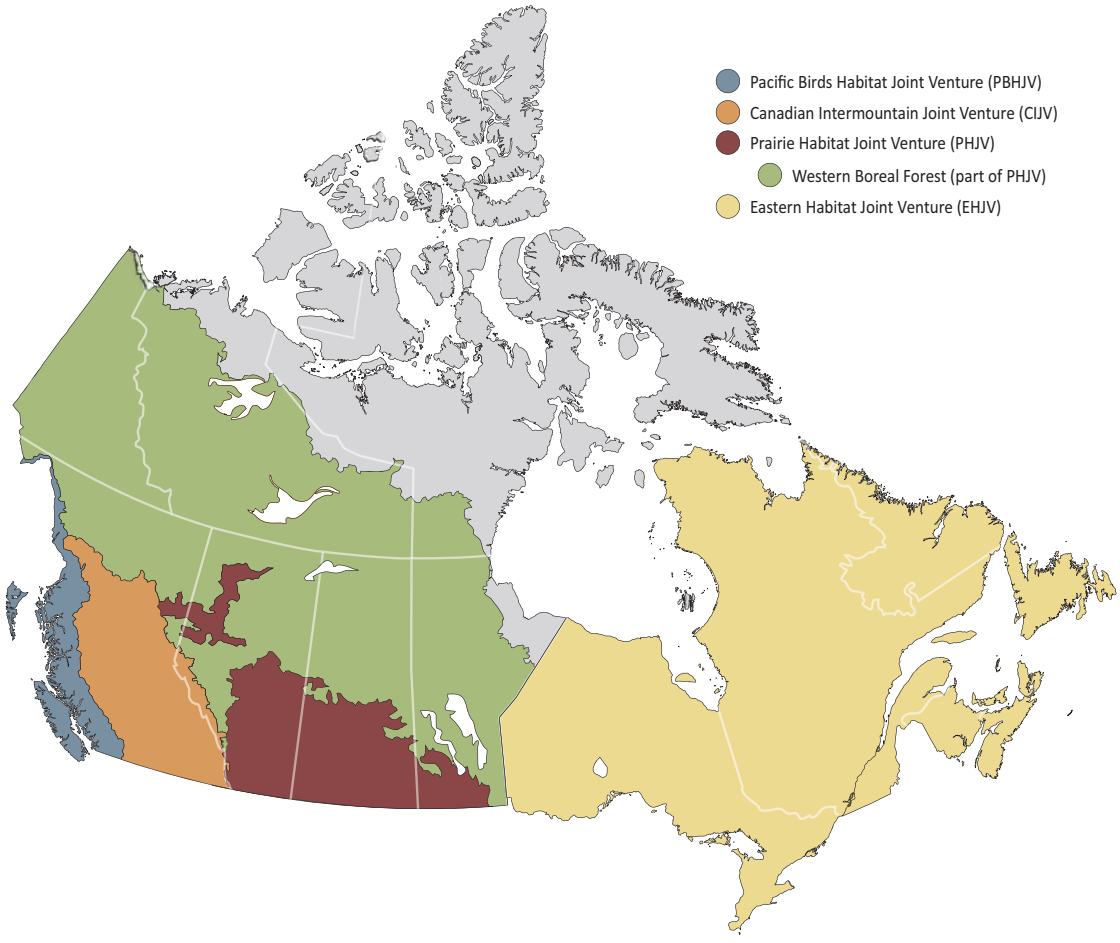
The first two of these goals, dealing with populations and habitats, have been foundational to the NAWMP, while the third goal identifies people as an explicit part of it. Successful waterfowl conservation stems from committed and passionate involvement by waterfowl hunters, birders and other nature enthusiasts, agricultural producers and other landowners, and the many citizen scientists and other volunteers who contribute to conservation projects and activities nationwide.

Habitat Matters has featured many important achievements by partners and stakeholders, all of whom have shown tremendous dedication to North American birds and habitats. This year, the report highlights stories from across Canada where many different communities have come together to give their time, passion and even land to conservation and restoration. Their contributions and dedication to wildlife and the land reinforce Canada's values of inclusiveness and diversity. Without hunters, birders, landowners, volunteers and citizen scientists, conservation work in this country wouldn't be where it is today.

Habitat Joint Ventures

A salt marsh in the Maritimes.
Margaret Campbell

The Canadian portions of the Habitat Joint Ventures integrate planning, science, governance, partnerships and management to achieve NAWMP goals in Canada through a programmatic approach. A science-based Implementation Plan is created to address local, regional and continental goals. Joint Venture partners actively research, monitor and evaluate waterfowl populations and deliver habitat conservation programs at a regional level.



Pacific Birds Habitat Joint Venture

A channel in the Salmon River estuary.
Karen Barry

www.pacificbirds.org

The PBHJV is an international joint venture that includes portions of British Columbia (BC), Washington, Oregon and California, and all of Alaska and Hawaii. The BC coastline has over 440 estuaries, which are a focus of many PBHJV programs due to their food-rich combination of tidal wetlands and adjacent floodplains. Near urbanized areas, floodplains have often been highly modified and converted to intensive, non-forage agricultural crops, resulting in the loss of considerable natural habitat and food supply. Throughout the PBHJV, 40 species of ducks, swans and geese occur regularly at various stages of their life cycles, and an estimated one million waterfowl winter along the BC coast. The Fraser River Delta in southern BC supports the highest density of wintering waterfowl in Canada. Key species in the BC portion of the Joint Venture include the Wrangel Island Snow Goose (nearly half the population), the Pacific Coast's Trumpeter Swan (half the population), American Wigeon, Cackling Goose and Western High Arctic Brant.

The international Pacific Birds Habitat Joint Venture (PBHJV or "Pacific Birds") includes the long coastline of British Columbia (BC), which has hundreds of estuaries and wetlands frequented by many species of ducks, swans and geese. This year, the report highlights agricultural stewardship for waterfowl, an estuary monitoring program, a significant land donation with far-reaching benefits and implications, and habitat restoration along a Vancouver Island river.

Investing in agricultural stewardship for waterfowl

The Fraser River Delta in southwestern BC is the most important estuary in Canada for wintering waterfowl, such as Lesser Snow Goose, Trumpeter Swans and American Wigeon, and one of the most important estuaries along the Pacific Flyway in all of North America. The delta has been largely diked for agriculture, replacing the forage for waterfowl from plants associated with high tidal marsh habitats to agricultural crops.

Lesser Snow Geese.
Delta Farmland and Wildlife Trust

For decades, this land has sustained waterfowl populations with winter forage through partnerships with Environment and Climate Change Canada (ECCC) and partners like Ducks Unlimited Canada (DUC), the Delta Farmland and Wildlife Trust (DFWT) and local farmers. A crop survey undertaken by ECCC, DUC and DFWT showed significant changes in 10 years to the crop composition in the Fraser River Delta, resulting in losses of crops that sustain waterfowl and increasing pressure on remaining vegetable, grain and grass forage crops. These crop changes make the partners' work that much more valuable for waterfowl conservation.

Each year, the DFWT provides local farmers with $375,000 CAD of cost-share funding through six stewardship programs. This funding supports farmers' abilities to invest in the long-term health of their soil while providing habitat for a diversity of wildlife, including birds migrating along the Pacific Flyway.

For example, in 2016–2017, farmers established and maintained 3,475 acres (1,406 hectares) of winter cover crops on private farm fields within the lower Fraser River Delta through the DFWT's Winter Cover Crop Stewardship Program. Since establishing this program in 1990, DFWT has monitored and evaluated its effects on wintering waterfowl and found that waterfowl regularly use these winter cover-cropped fields through the winter season, showing a good investment.

On September 12, 2016, the DFWT held its annual "Day at the Farm" event, which connects urban residents with the local farmers that feed them, as well as showcases the importance of agricultural land for supporting important wildlife habitat in the Fraser Delta. The event includes booths that demonstrate how birds and other wildlife benefit from agricultural stewardship practices, as well as the importance of these areas to waterfowl at a continental scale.

Designing an estuary monitoring program

DUC and other PBHJV partners have been working together for many years in a partnership program called the Vancouver Island Conservation Lands Management Program (VICLMP). The VICLMP initially focused on Vancouver Island and has since expanded to include associated coastal work along the BC mainland. The VICLMP partners have long identified a need for developing a monitoring program to detect trends in natural estuary processes and conditions and to evaluate restoration and management techniques in BC's key estuaries. Many of these estuaries have been the focus of PBHJV conservation actions in the past.

In 2016, VICLMP partners identified 15 estuaries on the BC coast to include in a monitoring program. Three estuaries were selected from each of five Joint Venture planning areas, based on distinct marine and upland ecological features. These 15 estuaries experience a range of threats, such as urban development of floodplains, port development of intertidal mudflats, forestry practices upstream from the estuary and discharge of industrial effluent.

Six elements of estuarine condition—elevation, sediments, habitat structure, water quality, vegetation and fauna—have been included in the program. For each of these elements, up to four variables were chosen to measure important estuary processes using consistent, feasible and affordable methods.

Conducting comprehensive fish and bird surveys and collecting other data in several estuaries over the course of a year can be prohibitively expensive and beyond

> With [Delta Farmland and Wildlife Trust] funding, farmers can invest in the long-term health of their soil while providing habitat for a diversity of wildlife, including birds migrating along the Pacific Flyway.

Members of the Nuxalk Guardian Watchmen install an instrument to measure sediment deposition in the Asseek Estuary located within the traditional territory of the Nuxalk First Nation, British Columbia.

Karen Barry

Mallard.

Karine Duffy

the resources of the staff at partner agencies. So, to bring down costs, DUC and other VICLMP partners are exploring alternative methods and partnerships, including:

- Collaborating with the University of Victoria, on Vancouver Island, to pilot the use of new technology such as unmanned aerial vehicles equipped with LiDAR remote sensing equipment to collect elevation data consistently over an entire estuary.
- Installing data loggers to collect water depth, salinity, and temperature information automatically throughout the entire year.
- Piloting a volunteer data collection program for bird surveys along parts of the BC coast, with the intention of expanding to include a greater number of sites in the future. The volunteer bird surveys complement data collected by a PBHJV partner, Bird Studies Canada, through its network of volunteers who conduct winter surveys as part of the BC Coastal Waterbird Survey.
- Working with First Nations communities, Fisheries and Oceans Canada and non-governmental organizations to assist with fish data collection.

Monitoring efforts in the past were inconsistent and incomplete because they were often unaffordable with the vast BC coastline presenting a formidable obstacle in terms of access. The components of this proposed monitoring program are designed to be affordable and achievable so that we can develop a baseline condition to compare into the future.

Donating an entire lakebed

The Somenos lakebed is a 233.5-acre (94.5-hectare) wetland near the town of Duncan in Vancouver Island's Cowichan Valley. The conservation of this habitat is imperative to increasing the number of species of waterfowl, birds and other wildlife that use the area, which is known for attracting thousands of Trumpeter Swans, Mallards, Northern Pintail and American Wigeon, as well as thousands of Canada Geese that winter at Somenos Lake.

PBHJV conservation partners have been working together to conserve the area for over 44 years, and in 2016, an agreement between TimberWest, Canada's largest private timberland company, and DUC marked a milestone in this journey. TimberWest donated the entire Somenos lakebed to DUC, which will share responsibility with its partners for managing the area to benefit the 200-plus species of birds and waterfowl that use the habitat.

"Never has an entire lakebed been legally surveyed and donated to a single non-government organization," said Leslie Bogdan, DUC's Director of Regional Operations for BC/ Boreal Region. For his part, Jeff Zweig, President and CEO of TimberWest, said, "Somenos is a special place for many bird species, and it is an iconic location for outdoor enthusiasts, bird-watchers and hikers alike. We are grateful to [DUC] for their continued passion and dedication to conservation on [Vancouver] Island, and we are extremely honoured to deed Somenos lakebed to them."

Restoring habitat along the Salmon River

The Nature Trust of British Columbia began a project in 2016 to restore wetland and riparian habitats and inventory at-risk species on 165 acres (67 hectares) of previously acquired land along the lower Salmon River on Vancouver Island.

Somenos Marsh and Lake.

Michelle Ronning

The Salmon River on Vancouver Island, British Columbia.

Karen Barry

The property, which expanded the Salmon River Estuary Conservation Area to 459 acres (186 hectares), contained valuable habitat, but some areas had been previously disturbed by logging and other human activities.

The project involved restoring the Salmon River's riparian zone where vegetation was limited or absent. Native species were planted to provide a 98-foot (30-metre) wildlife corridor and bird nesting habitat, improve stream shading, increase bank stabilization, provide large woody debris and allow formation of undercut banks for juvenile salmon cover. The project also improved wetland habitat by planting native wetland plants, removing old debris, re-grading steep shorelines and installing woody structures. Shoreline regrading will improve foraging habitat values for Great Blue Heron and other migratory birds.

The species inventory documented habitat use by breeding birds and amphibians and helped to identify important habitat requirements of Great Blue Heron, Western Screech-Owl, Northern Pygmy-Owl and other species at risk.

The project was coordinated by the Vancouver Island Conservation Land Management Program, with involvement by Vancouver Island University. Financial support came from ECCC's National Wetland Conservation Fund and the Fish and Wildlife Compensation Program (a partnership between BC Hydro, the Province of BC, Fisheries and Oceans Canada, First Nations and public stakeholders).

For more information, contact Tasha Sargent, Pacific Birds Habitat Joint Venture Coordinator, (604) 350-1903, tasha.sargent@canada.ca.

Pacific Birds Habitat Joint Venture Contributions ($CAD)

	2016-2017	*Total (1991-2017)*
Total	2,878,502	208,562,051

Accomplishments (Acres)

	2016-2017	*Total (1991-2017)*
Secured	3,209	136,722
Enhanced	43,422	171,072
Managed	4,508	132,443
Influenced	601	6,780,334

Secured, enhanced and managed acres are not additive.

2016-2017 consists of the April 1, 2016 to March 31, 2017 time frame.

1991-2017 consists of the January 1, 1991 to March 31, 2017 time frame.

Native species are planted to help restore the Salmon River's riparian zone.

Karen Barry

Northern Pintail.
Brian Wolitski, Ducks Unlimited Canada

Canadian Intermountain Joint Venture

A wetland in the South Okanagan, British Columbia.
Bruce Harrison

www.cijv.ca

With an area of 123.5 million acres (50 million hectares), the CIJV covers portions of British Columbia and Alberta. The CIJV encompasses a diverse landscape of grasslands, dry and moist coniferous forests, riparian areas and wetlands, alpine tundra and even pocket desert, with 24 breeding waterfowl species. The JV's estimated 1.45 million birds represent 70% of BC's and roughly 4% of Canada's breeding waterfowl population.
The CIJV supports roughly one quarter of the world's breeding population of Barrow's Goldeneye, along with significant breeding populations of Mallard, Hooded Merganser and Ruddy Duck.

The many partners of the Canadian Intermountain Joint Venture (CIJV) continue to make significant progress in addressing habitat conservation for waterfowl and all bird species. This year's project highlights include a local government creating a new, dedicated conservation fund; a family with multi-generational ties to the land ensuring their property benefits birds and wildlife in perpetuity; and private landowners coming on board to restore shallow, seasonal wetlands on their farmlands. These projects all show the value of community involvement in achieving conservation goals.

Creating a dedicated conservation fund for the South Okanagan

Community groups and organizations in the British Columbia (BC) towns of Summerland, Penticton and Oliver, as well as five surrounding electoral areas, now have a new source of funds available to help support conservation efforts to protect natural areas. In December 2016, the Regional District Okanagan Similkameen (RDOS) approved an Environmental Conservation Service bylaw that is the basis for establishing the South Okanagan Conservation Fund. The bylaw will requisition up to $450,000 CAD each year that can go toward conservation efforts, such as activities or projects that protect water, wildlife or habitat, within the participating areas.

The South Okanagan Conservation Fund is the third fund of its kind to be established in BC. The other two, established for the Columbia Valley, BC, in 2008 and Kootenay Lake, BC, in 2014, are also in the land area covered by the CIJV. All three of these conservation funds are dedicated sources of funds from property taxes requisitioned and held by local governments for the purposes of undertaking environmental conservation and natural areas protection efforts.

The RDOS manages the Conservation Fund, and community groups and organizations can apply for support for their environmental conservation projects. The South Okanagan Similkameen Conservation Program (SOSCP) will help administer the granting process, which involves a committee of technical experts tasked with helping ensure that proposed projects are technically sound and contribute to important conservation goals. Local government decision makers will make the final decisions about how funds are spent.

For its role in helping to protect biodiversity by establishing this Conservation Fund, the RDOS received the first-ever Species and Ecosystems At Risk Local Government Working Group (SEAR-LGWG) Award from the LGWG. “We are thrilled the RDOS Board has deservedly won the very first SEAR-LGWG Award,” said Bryn White, SOSCP Program Manager. “This innovative fund will protect species and ecosystems for generations to come. It also will work regionally across electoral area and municipal borders, engaging all citizens of the South Okanagan to come together to protect the wonderful region in which we live, work and raise our families. Their vision will leave a significant legacy for nature and a positive future for our communities.”

Mallards paddle on the Osoyoos oxbows in the South Okanagan of British Columbia.
Tim Feeney

The Nature Conservancy of Canada's Barb Pryce with Jimmy Pendergraft in the South Okanagan.
Tim Feeney

> The first landowners to be involved in the project agreed to restore more habitat on their land, and additional landowners have signed on.

Conserving Osoyoos oxbows with the Pendergraft family

When Jimmy Pendergraft's father purchased land just north of Osoyoos Lake in the South Okanagan in the mid-1900s, he did so for its value as agricultural land. The priority in the region at that time was to develop land for farming, even if that meant redirecting rivers and filling in wetlands. Over the many decades that the Pendergraft family grew hay and ran cattle on their land, Jimmy saw the area become increasingly developed. Farmers' fields became housing developments and small ranches. Jimmy saw nature being edged out even more than it already had been. So in early 2017, Jimmy decided to sell the Pendergraft property to the Nature Conservancy of Canada (NCC) and Ducks Unlimited Canada (DUC) in order to see it returned to a more natural state. "I like knowing that NCC is going to look after this land, for the Curlews and other birds," said Pendergraft. "This land has been important to my family for a long time."

The 90-acre (36-hectare) property lies along the Okanagan River in an expanse of wetland known as the Osoyoos oxbows. The Osoyoos Oxbows—Ted Pendergraft and Sons Conservation Area is the latest addition to a complex of conservation lands that parallel Highway 97 between the towns of Osoyoos and Oliver. The property contains some of the last remaining marshes in an area that was once a significant chain of wetlands. Plans to restore the land to more natural wetlands are underway. Recreating historic oxbow channels will provide habitat for numerous species, including waterfowl like Barrow's Goldeneye, Red-breasted Merganser and Mallard, other birds like Killdeer and Yellow-breasted Chat, and amphibians and reptiles.

DUC is a key partner in NCC's work in the Osoyoos oxbows. In addition to contributing funds to purchase this land, DUC is also a co-title holder and will collaborate with restoration work on the site. Many funders contributed to the success of this project, including the Government of Canada through the Natural Areas Conservation Program, U.S. Fish and Wildlife Service, Habitat Conservation Trust Foundation, British Columbia Conservation Foundation, Oliver-Osoyoos Naturalists' Club, South Okanagan Naturalists' Club, Okanagan Similkameen Parks Society, Burrowing Owl Winery and many individual donors.

Restoring wetlands with private landowners at Meadow Creek

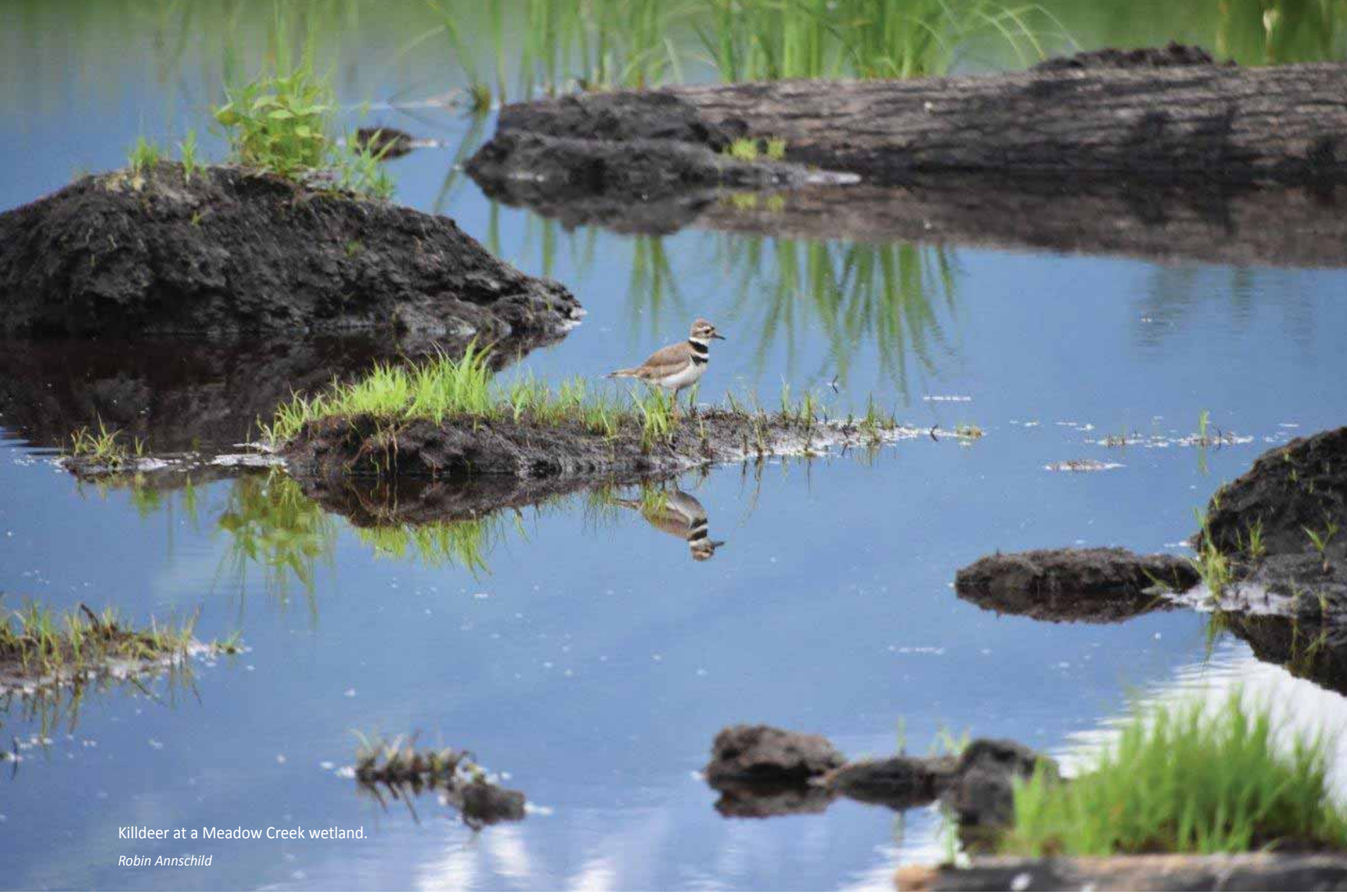
In 2016–2017, more wetlands were restored in the small agricultural community of Meadow Creek, north of Kootenay Lake, adding to work that began in 2014–2015 when the British Columbia Wildlife Federation (BCWF) partnered with a private landowner to restore shallow and seasonal wetlands on their land. Located on a floodplain, the area had been historically cleared and farmed, but some fields are now too wet to farm using modern equipment. Partners restored unproductive fields to seasonal and shallow marsh and swamp habitat, re-establishing habitat connectivity across the valley bottom.

At first, local residents were concerned that the restorations would impact both the aesthetic value of the area and adjacent farmlands. The project partners adjusted restoration designs to address community concerns and actively engaged the community by using local media, hosting open houses and having community events and tours at the restored sites.

Wildlife started using the new wetlands right away. The local community was so pleased with the results that initial opposition has changed to full community support for habitat restoration. The first landowners to be involved in the project agreed to restore more habitat on their land, and additional landowners have signed on.

Aerial view of some of the restored wetlands at Meadow Creek.

Michele Halleran



Killdeer at a Meadow Creek wetland.
Robin Annschild

Supported by ECCC's National Wetland Conservation Fund, this project has continued each year since 2014 with additional wetland restoration in the area. The Nature Trust of British Columbia became involved and restored wetlands on an adjacent conservation property, while BCWF restored additional wetlands on the first property and two more adjacent private properties. The private landowners have signed conservation agreements to protect the restored wetlands on their properties.

Currently, a complex of 39 small wetlands, covering 37.3 acres (15.1 hectares), has been enhanced through restoration and more work is planned for the coming year. The restored wetlands now regularly host migrating and breeding waterfowl, including Trumpeter Swans, Canada Geese and a variety of ducks. A diverse array of other birds and wildlife also frequent the area, including sandpipers, raptors, bears, elk, muskrat, salamanders and frogs.

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

Canadian Intermountain Joint Venture
Contributions ($CAD)

	2016-2017	*Total (2003-2017)*
Total	5,522,693	64,441,350

Accomplishments (Acres)

	2016-2017	*Total (2003-2017)*
Secured	1,306	353,680
Enhanced	6,332	191,407
Managed	78,345	813,507
Influenced		50,906

Secured, enhanced and managed acres are not additive.

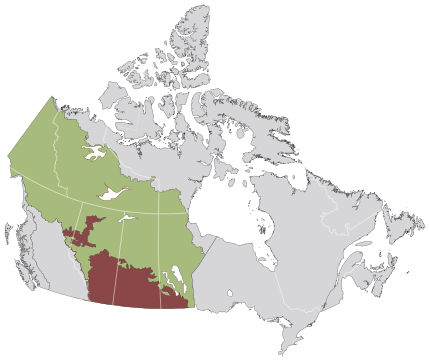
2016-2017 consists of the April 1, 2016 to March 31, 2017 time frame.

2003-2017 consists of the January 1, 2003 to March 31, 2017 time frame.

Prairie Habitat Joint Venture

Blue-winged Teal.

Jeff Williams, Arkansas Game and Fish Commission



www.phjv.ca

The PHJV encompasses 158.4 million acres (64.1 million hectares) in the traditional area of prairie and aspen parklands. It includes Alberta, Saskatchewan, Manitoba and the Peace-Parkland Region of British Columbia (BC). The PHJV also covers the western boreal forest (WBF), which covers parts of BC, Alberta, Saskatchewan, Manitoba, the Yukon and the Northwest Territories. The WBF contains a range of wetland types from small prairie potholes to marshes and bog systems.

Together, the Prairie-Parkland and WBF regions of Canada provide habitat for most North American duck species. They also provide habitat for hundreds of priority species identified during the Bird Conservation Region planning process. For example, the WBF has 57 priority species of non-game birds and 30 boreal specialists. Linkages among habitats and species are highlighted in the Prairie-Parkland and WBF Implementation Plans.

The remarkable diversity and abundance of bird species across the Prairie Habitat Joint Venture (PHJV) result from the region's highly productive and diverse wetland and upland habitats and the movement of birds among prairie, parkland and western boreal forest biomes.

The importance of people in the PHJV's efforts toward achieving sustainable bird populations can't be overstated. At the core of this support we recognize the hunting community as a primary driver of conservation. The PHJV recognizes and appreciates the tremendous support of hunters, landowners, industry and our local communities for their invaluable contributions toward PHJV and NAWMP goals. Below is a snapshot of how local communities, farmers, industry partners and average citizens get involved in helping to achieve results in the PHJV.

Prairie Canada wetlands.
Jeff Williams, Arkansas Game and Fish Commission

Prairie Parklands

Alberta: Working Collaboratively on Wetland Education and Outreach

Wetland education has long been recognized for its important role in engaging key stakeholders to further the goals of wetland conservation, restoration and management. However, in Alberta, wetland education and outreach efforts had been occurring in an independent, uncoordinated fashion.

Alberta North American Waterfowl Management Plan (NAWMP) partners recognized the need for a more collaborative approach and developed a working group to create a conceptual framework for a Wetland Education Network. The framework was very well received by a broad group of stakeholders, and in 2016–2017 a Wetland Education Network Pilot was performed.

The pilot involved a coordinator bringing together a cross-section of individuals in four different sector groups, referred to as Action Groups. The groups were Agriculture, Industry, Municipal and Public/Education. Group members were asked to identify the specific wetland education and outreach needs of their audiences, the key messages to get across to them, and the tools and programs that could be effective for delivering the content.

One theme that became apparent over the course of the pilot was the importance of distinguishing wetlands and creating an opportunity for individuals to relate to wetlands on either a personal or a professional level. This was evident in the key messages the Action Groups wanted to get across to their audiences:

One theme that became apparent . . . was the importance of distinguishing wetlands and creating an opportunity for individuals to relate to wetlands on either a personal or a professional level.

- How are wetlands relevant to my operation? (Agriculture Action Group)
- Wetlands affect how you work on the landscape. (Industry Action Group)
- Wetlands are a shared responsibility and we can help you. (Municipal Action Group)
- Why wetlands? (Public/Education Action Group)

The pilot was followed with a workshop that involved the broader wetland education community, and the Wetland Education Network concept received an incredible amount of support. Alberta NAWMP has decided to formalize the Wetland Education Network in the coming year.

Manitoba: The Hagan Family: At Home on the Range

The NAWMP National Blue-winged Teal Award is presented to individuals, partnerships or programs whose one-time, periodic or ongoing activities at the national or regional level result in substantial nation-wide benefits to waterfowl, other wetland-associated migratory bird populations or wetland habitats.

Manitoba's most recent recipients of a NAWMP Blue-winged Teal award trace their roots in the province's Oak Lake region back to 1915. The Hagan family now has three generations of cattle and horse ranchers and includes Shawne and his wife Joceleyn, sons Alistair and Thomas, and their spouses, Erin and Felicity. Three grandchildren are also growing into the operation.

Ranching and conservation go hand in hand with the Hagans. Their operation has expanded in the heart of the Virden NAWMP target landscape. As cattle ranchers, horse breeders and avid hunters, they recognize the benefits of grasslands, wetlands and other natural habitats.

Recognizing that their land's natural values helped support their farm operation, their lifestyle and their conservation ethic, Shawne signed the family's first conservation easement (CE) in 2003 with the Manitoba Habitat Heritage Corporation (MHHC), a Canadian NAWCA grantee organization. It was the first CE completed by any conservation organization in that locality, and it influenced other landowners to come on board.

As the family's farm operations expanded, so too did their conservation commitments. Today, the Hagan extended family has completed 18 CEs, permanently protecting 4,885 acres (1,977 hectares) of natural lands, including 2,020 acres (817 hectares) of wetlands. The Hagan CEs are the most extensive collection that MHHC has achieved within a single farm operation—by a large margin.

This landscape harbours a tremendous diversity of migratory birds, including at least 14 species of waterfowl. Because the conserved areas are continuous blocks of wetland and upland habitats, the conservation values are especially high. Scores of other wildlife species are also present, including five at-risk grassland bird species.

Thomas summed up his family's approach to their land and farm operation when he said, "You realize that you have to take care of everything living on your land."

The Hagans are committed to the ranching lifestyle, and conservation is an integral part of that life. Their goal is to build a farming business for future generations that will not compromise the health of the land or the region.

The Hagan Family receiving the NAWMP Blue-winged Teal Award.

Manitoba Habitat Heritage Corporation

Two citizen scientists collecting data at Matador Grasslands, Saskatchewan.

Kiel Drake

Saskatchewan: Building Conservation Support by Engaging Citizens in Science

Bird Studies Canada is striving to make every outdoor walk count! This year represents the launch of a five-year project to engage everyone from professional biologists to urban backyard birders in the Saskatchewan Breeding Bird Atlas. This ambitious project teams citizen scientists with professionals to deliver a province-wide account of the distribution and relative abundance of populations of breeding birds in all habitats, including wetlands. Participating in the Atlas is a great way to engage the public in programs that have tangible conservation outcomes. The program has been advertised through media outlets in Saskatchewan, and people can easily register online.

People represent the cornerstone of successful conservation programs, yet society has become increasingly disconnected from the natural world. The NAWMP has recognized that a variety of strategies and approaches will be required to engage the public in conservation. The Saskatchewan Breeding Bird Atlas provides an opportunity to begin engaging the broader public, including urban residents. The Atlas broadens the net of engagement by offering opportunities for citizens of all birding experience levels to engage in data collection that will have real conservation outcomes. Citizens require only a pair of binoculars, some bird watching experience and/or the desire to learn. Actively engaging the public in projects such as the Atlas is foundational to building broad support for conservation.

The Breeding Bird Atlas broadens the net of engagement by offering opportunities for citizens of all birding experience levels to engage in data collection that will have real conservation outcomes.

The Saskatchewan Breeding Bird Atlas represents a collaborative effort between conservation organizations, government, the private sector and the public. Data collection for the Atlas began in 2017 and will continue through summer 2021. The Atlas will provide an invaluable tool for wildlife conservation, education and research in the province. The collaborative project is led by Bird Studies Canada, in partnership with Environment and Climate Change Canada, the Saskatchewan

DUC and forestry partners discussing wetland conservation interests.

Ducks Unlimited Canada

Ministry of Environment, Nature Conservancy of Canada, Nature Saskatchewan and the Saskatchewan Wildlife Federation. In addition to engaging a broad range of people and building support for conservation, this project will contribute important data to the PHJV that will be used to refine and improve habitat modelling for "all-birds" and refine and enhance provincial implementation targets.

Western Boreal Forest

DUC and the Forest Industry Unite Around Wetland Stewardship

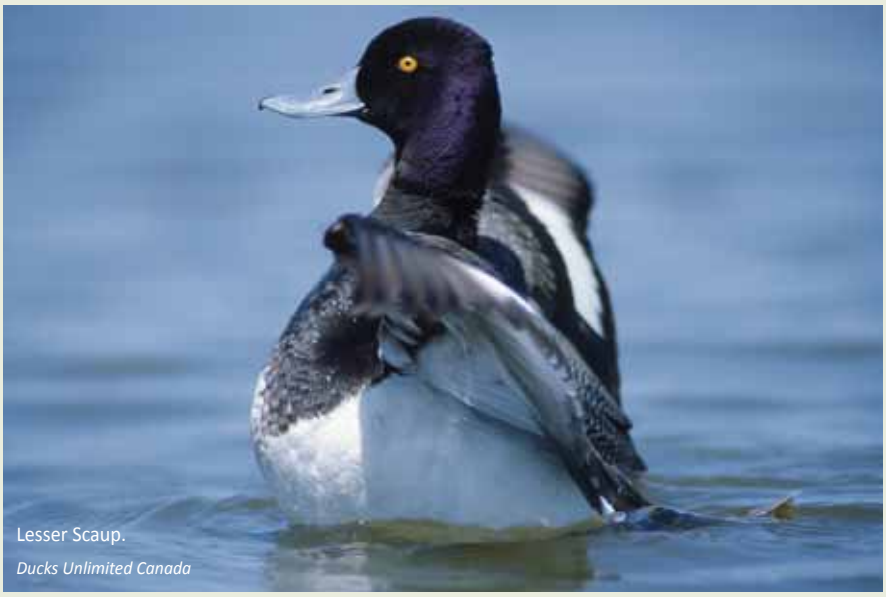
Many hands make light work, and when it comes to conservation in the boreal forest, many hands make positive change happen. With numerous stakeholders whose lives and livelihoods rely on the forest, the transformational power of collaboration is enormous. That's why Ducks Unlimited Canada (DUC) and the forest industry are teaming up to find new ways of sharing resources, advancing wetland and waterfowl conservation knowledge, and sharing the responsibility of caring for the land they all depend on.

> The Forest Management and Wetland Stewardship Initiative supports projects that advance sustainable forest management and the collective stewardship of wetlands and waterfowl habitats.

The Forest Management and Wetland Stewardship Initiative is a visionary approach. It calls for a coalition of partners to come together under a three-year collaborative agreement. The initiative supports projects that advance sustainable forest management and the collective stewardship of wetlands and waterfowl habitats that the coalition is responsible for managing within the boreal region. Partners in the three-year initiative include Alberta-Pacific Forest Industries Inc., Canfor, Millar Western Forest Products Ltd., Tolko Industries Ltd., West Fraser, Weyerhaeuser Company and the Forest Products Association of Canada.

The coalition will work with DUC to establish guiding principles to conserve wetlands and waterfowl in forest management planning and operations and to develop associated best management practices that complement forest certification programs. DUC's

In June 2016, the Government of Saskatchewan approved Weyerhaeuser Company's 20-year Forest Management Plan that included Conservation Zones (CZs) for the protection of Woodland Caribou totalling approximately 512,000 acres (207,000 hectares). As a component of the Canadian Boreal Forest Agreement, Ducks Unlimited Canada's Enhanced Wetland Classification was made available for use in this planning initiative. Approximately 80% of the CZs are wetlands including important waterfowl habitat.



Lesser Scaup.
Ducks Unlimited Canada

expertise, science-based solutions and conservation products, including wetland mapping, will guide and inform these activities.

"We are pleased to work with this important industry sector to strengthen wetland stewardship in this region," said Kevin Smith, DUC National Boreal Programs Manager. "By taking an innovative and collaborative approach, we will be able to achieve shared goals for a landscape that supports both a healthy economy and abundant wildlife habitat."

In a challenging economy, organizations have to think carefully about how to advance their commitment to environmental performance and achieve their goals with limited resources. By working together through the Forest Management and Wetland Stewardship Initiative, forestry companies can do more with less. They can also work faster and have greater impact.

The idea to leverage multiple resources that resulted in this initiative came from Wendy Crosina, Weyerhaeuser's Canadian Forest Stewardship Manager. Weyerhaeuser has been a strong supporter of DUC since 2005 and has taken a lead role in advancing sustainable forestry and best management practices across Canada.

"When it comes to forest stewardship and conservation of wetlands in the boreal forest," said Crosina, "working together in these collaborative partnerships makes it easier to find win-win solutions."

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

Prairie Habitat Joint Venture – Prairie Parklands
Contributions ($CAD)

	2016-2017	*Total (1986-2017)*
Total	53,749,598	1,237,500,113

Accomplishments (Acres)

	2016-2017	*Total (1986-2017)*
Secured	63,248	6,886,369
Enhanced	40,583	2,749,995
Managed	596,415	9,463,277
Influenced	919,093	6,232,246

Secured, enhanced and managed acres are not additive.

2016-2017 consists of the April 1, 2016 to March 31, 2017 time frame.

1986-2017 consists of the January 1, 1986 to March 31, 2017 time frame.

Prairie Habitat Joint Venture – the Western Boreal Forest
Contributions ($CAD)

	2016-2017	*Total (1986-2017)*
Total	7,652,107	141,893,895

Accomplishments (Acres)

	2016-2017	*Total (1986-2017)*
Secured	840,730	12,091,184
Enhanced		107
Managed		107
Influenced		53,526,503

Secured, enhanced and managed acres are not additive.

2016-2017 consists of the April 1, 2016 to March 31, 2017 time frame.

1986-2017 consists of the January 1, 1986 to March 31, 2017 time frame.

Eastern Habitat Joint Venture

Surveying a marsh in New Brunswick.
A. Patrick

www.ehjv.ca
www.pche.ca

The EHJV contains 780 million acres (315 million hectares) spanning Ontario, Quebec, New Brunswick, Nova Scotia, Prince Edward Island and Newfoundland and Labrador. The EHJV supports 30% of Canada's wetlands, including more than 120.8 million acres (48 million hectares) of fresh and tidal wetlands. Important habitats include coastal bays and salt marshes, lakeshore marshes, floodplain wetlands and boreal forest wetlands. The JV has 13 priority waterfowl species: American Black Duck, Mallard, Ring-necked Duck, Common Goldeneye, Common Eider (three races), Green-winged Teal and Canada Goose (5 populations). The habitat within the EHJV supports 95% of the continental population of American Black Duck and 80% of the southern race of Common Eider. The Atlantic and North Atlantic populations of Canada Goose breed exclusively within the EHJV.

The provinces encompassed by the Eastern Habitat Joint Venture (EHJV) contain a rich diversity of bird species, including migratory birds, that use the wetlands and associated upland areas that are so abundant in this region. Numerous other wildlife species also benefit from these habitats, as do local citizens. The number of people living within the EHJV boundaries amounts to nearly two thirds of Canada's population. The infrastructure that accompanies human settlement provides a significant challenge for the preservation of wetlands, but at the same time, the human presence offers opportunities for involving citizens in wetland programs. In this article, we highlight the role played by everyday Canadians in contributing data to monitoring programs and securing funding to restore wetland habitats, as well as a new opportunity for citizens to experience protected areas.

Least Bittern.
E. Buck and J. Bensette

Citizen scientists: The core of Bird Studies Canada's Marsh Monitoring Program

Traditional users have long recognized the beauty of a marsh in early morning and the importance of wetland conservation, and now new marsh enthusiasts are adding their support to better understand the ecological importance of these habitats. Every spring and summer, hundreds of citizen scientists, boots in the mud and clipboards in-hand, head to local wetlands across the EHJV to take part in Bird Studies Canada's Marsh Monitoring Program (MMP).

Established by Bird Studies Canada in partnership with other EHJV partners, the MMP operates within southern and central Ontario, southern Quebec, the Maritimes and across the Great Lakes states. Engaging volunteer participants—birders, outdoor enthusiasts, anyone interested in natural history—the MMP surveys wetland birds and frogs as indicators of wetland health. The program uses specialized survey methods to improve detections of elusive marsh birds like rails, bitterns, coots and gallinules, many of which are poorly surveyed by other monitoring programs. And although tracking bird and frog populations and their habitats are the main scientific objectives, the MMP also aims to get people out into their local marshes to develop strong personal connections with these special places.

Collecting data in a Maritime marsh.
Laura Achenbach

The MMP started in the Great Lakes in 1995, Quebec in 2004 and in the Maritimes in 2012. Nearly 2,000 volunteers have participated in the project, producing a "gold mine" of information. In all, over 80,000 individual counts have been completed at nearly 7,000 unique locations that amount to over 75 square miles (200 square km) of surveyed area across the EHJV.

The MMP is an integral part of delivering the key components of the EHJV Implementation Plan 2015–2020, including monitoring waterfowl populations and overall wetland health. The EHJV strives to conserve and protect wetland habitat for waterfowl, as well as for all other bird species, using multiple approaches, such as creating easements on private land, building water control structures and restoring degraded wetlands. Data collected by MMP volunteers provide a link between the effects of these actions and the species using the habitats. Efforts in the Maritimes in 2016–2017 to expand the MMP into forested wetlands will help to describe a new suite of species–habitat connections. This information in turn helps guide EHJV conservation and management actions for all bird species.

One of the most significant outcomes of the MMP is the knowledge and action that it instills in volunteers. Bird Studies Canada often gets comments like, "I now have a different level of awareness of wildlife in wetlands," or "We used our MMP data as testimony to successfully stop a golf course coming to the park near this valuable wetland." By combining a thorough survey protocol with the enthusiasm

Inviting Community to Experience Waterfowl

Though most Nature Conservancy of Canada (NCC) properties have always been accessible, NCC's Nature Destinations program marks the first time the organization is actively inviting visitors to experience and explore their sites. The program aims to help people experience protected areas across Canada, promote greater awareness of the benefits of nature and foster a conservation ethic. These aims underlie a deeper purpose: to secure a long-term sustainable future for conservation in Canada.

Birders in the Codroy Valley, on the west coast of Newfoundland.
Mike Dembeck

"Time spent outside in nature is critically important to fostering and inspiring an appreciation for conservation," said Erica Thompson, who leads the Nature Destinations program. "That's why the NCC team has been thinking carefully about how we can play a role in building bonds between people and nature while we continue conserving priority habitat across Canada." The program was launched in 2017 with 20 properties across Canada, with more to be added every year.

One Nature Destinations site, the Grand Codroy Estuary, on the southwest coast of Newfoundland, is a Ramsar Wetland of International Importance that supports more than 19 species of waterfowl, including Wood Duck, Blue-winged Teal and American Wigeon, as well as a wide variety of other birds. A Wetland Interpretation Centre, run by NCC's partner the Codroy Valley Area Development Association, and NCC interpretive trails provide information about species to spot. Since 1996, NCC, with the help of conservation partners such as the Newfoundland and Labrador provincial government and Ducks Unlimited Canada, has helped to protect more than 600 acres (243 hectares) around the Grand Codroy Estuary.

of volunteers, we can have the best of both worlds: doing good science to track the health of our wetlands, while also encouraging a wider public enjoyment, appreciation and advocacy for these important habitats across eastern Canada.

> The community's impressive response meant that in only a few months, the marsh's future had been secured with donations.

Restoration cure: A community bands together to give a local marsh a new lease on life

Montmagny Marsh, on the south bank of the St. Lawrence River downstream from Quebec City, is an oasis for birds such as American Black Duck, Least Bittern, Pied-billed Grebe, Wood Duck, Mallard, Ring-necked Duck and Great Blue Heron, as well as other wildlife like turtles. People also visit the marsh to enjoy the surroundings. It's hard to believe that this local landmark nearly didn't exist, but fortunately for the birds, other wildlife and people of Montmagny, it does, thanks to collaboration between the City of Montmagny and Ducks Unlimited Canada (DUC) and to the community at large that responded to a call for assistance.

Children taking in the beauty of Montmagny Marsh.
Daniel Thibault

In the late 1980s, Bernard Filion, who is now DUC's Provincial Manager in Quebec, had convinced Montmagny's then-mayor that the site, which had been drained for farmland, had incredible potential as a wetland habitat. DUC and the City joined forces to recreate and conserve the rich and diversified habitat of Montmagny Marsh. The work at that time consisted of erecting two dikes and installing a water-level control structure at the ditch outlet. A strip around the marsh was planted with a mixture of grasses to provide quality nesting habitat for waterfowl. In addition, a cereal crop was maintained in the western part of the site to create migration habitat for the Greater Snow Goose.

Over the years, a municipal park with bike path, rest area and bird-watching structure has also been developed nearby to allow people to access and enjoy this site. Montmagny Marsh is highly frequented by the bird-watching community, which has inventoried nearly 100 bird species at this location.

After nearly 30 years, the water control structures had reached the end of their useful lifespan, so DUC and the City called on the community with an urgent request to help collect the funds needed to update the structures. The community's impressive response meant that in only a few months, the marsh's future had been secured with donations from many local residents, a local member of the provincial parliament and numerous businesses including the Caisse Populaire Desjardins bank. These funds complemented the funding provided by NAWMP partners, including Fondation de la faune du Québec, Environment and Climate Change Canada, the U.S. Fish and Wildlife Service, Ducks Unlimited Inc., and numerous State partners (Georgia, New Hampshire, New Jersey, Pennsylvania, Vermont, Virginia, Connecticut, West Virginia and Maryland) that have committed to conserving Quebec's waterfowl habitat.

With funding in place, DUC immediately began the restoration work in the fall of 2016 and completed the project within a few weeks, just before the winter's first snowfall. Montmagny Marsh now has a new lease on life, to the immense benefit of the waterfowl and other wildlife that depend on this habitat and also to the joy of birdwatchers and others in the Montmagny community.

For more information, contact Tania Morais, Canadian Eastern Habitat Joint Venture Coordinator, (506) 364-5085, tania.morais@canada.ca.

Eastern Habitat Joint Venture Contributions ($CAD)

	2016-2017	*Total (1989-2017)*
Total	20,819,427	561,218,775

Accomplishments (Acres)

	2016-2017	*Total (1989-2017)*
Secured	20,099	1,466,026
Enhanced	39,940	648,793
Managed	183,739	2,119,548
Influenced	962,288	73,959,885

Secured, enhanced and managed acres are not additive.

2016-2017 consists of the April 1, 2016 to March 31, 2017 time frame.

1989-2017 consists of the January 1, 1989 to March 31, 2017 time frame.

Montmagny Marsh, Quebec.
Ducks Unlimited Canada

Species Joint Ventures

Flock of Snow Geese at Oak Hammock Marsh, Manitoba.

Chris Benson

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

Arctic Goose Joint Venture

Black Brant.
Chris Nicolai

The AGJV covers 924 million acres (374 million hectares) spanning North America and including other circumpolar countries. It focuses on 26 populations among seven species: Greater White-fronted, Emperor, Snow, Ross's, Brant, Cackling and Canada Geese. Arctic geese use all four flyways.

North America is home to about 25 million migratory arctic geese. These birds play an important role in our natural world and provide a variety of benefits and opportunities to citizens, generating millions of dollars in economic benefits each year. Improved scientific understanding is required to properly manage this valuable resource.

The Arctic Goose Joint Venture (AGJV) is a partnership that brings together federal, state/provincial/territorial and non-government conservation agencies across the continent to improve our knowledge and management of North America's geese. Through broad partnerships and efficient management, the AGJV has leveraged limited public funding to achieve many successes. AGJV-supported projects and programs have involved two main components: population monitoring (55%) and research (44%). Only 1% of AGJV funding has been spent on administrative overhead.

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

Over the course of its history, the AGJV base funding, received from the U.S. Fish and Wildlife Service and Environment and Climate Change Canada's (ECCC's) Canadian Wildlife Service, has leveraged:

- Additional funding support from 86 agencies in the United States and Canada.
- An additional $8 for every dollar of federally appropriated U.S. funds.

In addition to this broad agency support, scientists also rely on the interest and engagement of tens of thousands of United States and Canadian citizens to collect goose-related information. A key example of this citizen science is the large volume of information provided by hunters through harvest questionnaire surveys, species composition surveys and band recoveries. Hunters "sample" the population of marked birds by reporting their band recoveries and seasonal harvests of geese, and by submitting parts (i.e., tail fans and wing tips of harvested geese) for determining the species/age/sex composition of the annual harvest.

Each year, at least 80,000 hunters respond to harvest questionnaire surveys in the United States, and another 12,000 or so in Canada. In addition, hunters report approximately 60,000 hunter-shot band recoveries each year.

The information collected from this massive citizen "workforce" is used to estimate abundance, determine survival rates and monitor the size and distribution of harvest

> Information collected from the hunting community is critical to monitoring efforts aimed at ensuring the long-term sustainability of arctic geese.

Father and son hunting geese in northern Manitoba.
Frank Baldwin

A Canada Goose hunting area in prairie Canada.
Brody Edmondson

for most populations of arctic geese in North America. Given the large numbers, remote breeding areas, and large and expanding geographic distributions of these populations, traditional monitoring techniques, such as aerial surveys, are either logistically impractical or prohibitively expensive. Thus, the information collected from the hunting community is critical to monitoring efforts aimed at ensuring the long-term sustainability of these species.

The Arctic Goose Joint Venture expresses sincere gratitude to all partner agencies, scientists and the thousands of hunters who contribute to the knowledge base needed to manage North American geese. In particular, the AGJV would like to thank the U.S. Fish and Wildlife Service and ECCC's Canadian Wildlife Service for providing the base funding that is critical for leveraging broad financial support for continent-wide research and monitoring of arctic geese.

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

Arctic Goose Joint Venture Expenditures ($CAD)

	2016-2017	*Total (1991-2017)*
Banding	705,195	15,584,065
Research	1,363,534	21,928,808
Surveys	295,962	10,528,213
Collar Observations		1,324,185
Management		272,992
Conservation Planning	43,770	651,256
Total	**$2,408,461**	**$50,289,519**

2016-2017 consists of the April 1, 2016 to March 31, 2017 time frame.

1991-2017 consists of the January 1, 1991 to March 31, 2017 time frame.

Sea Duck Joint Venture

Harlequin Ducks.
Tim Bowman

www.seaduckjv.org

The 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 JV includes all 22 recognized populations among the 15 sea duck species (tribe ***Mergini***): Common Eider, King Eider, Spectacled Eider, Steller's Eider, Black Scoter, White-winged Scoter, Surf Scoter, Barrow's Goldeneye, Common Goldeneye, Bufflehead, Long-tailed Duck, Harlequin Duck, Common Merganser, Red-breasted Merganser and Hooded Merganser. As a group and depending on the season, sea ducks use all four flyways.

It has been 19 years since the Sea Duck Joint Venture (SDJV) was initiated, largely because of concerns about population declines. Two sea duck species are federally listed in Canada as species of special concern under the *Species At Risk Act* (eastern Barrow's Goldeneye and eastern Harlequin Duck) and another two are listed in the United States as threatened under the *Endangered Species Act* (Spectacled Eider and Steller's Eider). As such, one of the SDJV's goals was to learn enough about sea ducks to reverse declines and keep other species from being listed. But with so many species, distinct populations and knowledge gaps, the task was daunting. The SDJV began by supporting basic research and monitoring projects, and then, based on what had been learned, more narrowly focused its program on obtaining information most needed by managers to make better decisions about harvest and habitat conservation.

One of the SDJV's flagship projects has been the Atlantic and Great Lakes Sea Duck Migration Study. More than 400 sea ducks of four species (Black, Surf and White-winged Scoters and Long-tailed Ducks) were marked with satellite transmitters and tracked throughout the year to identify migration routes and important habitats and to document their use of wintering areas near proposed offshore wind projects along the U.S. Atlantic coast. The project has produced a wealth of information to redefine

Barrow's Goldeneye tagged for satellite telemetry, which has proved an important tool for studying sea ducks.

Tim Bowman

range maps, illustrate seasonal habitat use and provide insights into links between breeding areas and wintering areas, as well as the origin of harvested ducks.

The SDJV is now developing a Sea Duck Key Habitat Sites atlas, which will identify and document habitats in North America essential to sea duck well-being. It incorporates data from satellite telemetry studies and surveys and focuses on the habitats most crucial to sea ducks. The atlas is intended as a resource for habitat conservation efforts and to educate and increase collaboration with communities and other partners in marine issues.

Enough has been learned about sea duck distribution, abundance and biology to enable the first assessment of harvest on several species of sea ducks to answer the question, how sustainable is the current level of harvest by sport and subsistence hunters? The analysis raises some concerns and also highlights the need for better estimates of population size and of demographic parameters such as survival, nesting success, duckling survival and recruitment.

Since 2001, more than 50 peer-reviewed publications have resulted from about 150 projects supported by the SDJV, with many more products in the works. An international sea duck conference has been held every three years since 2002 and brings together scientists and managers from around the world (mostly North America) to help advance the state of knowledge of sea duck biology and management. The SDJV partnership remains strong and enthusiastic, with excellent collaborative relationships between U.S. and Canadian management agencies and conservation organizations.

The good news is that no more sea duck species have been listed under species-at-risk or endangered species legislation. But there are still concerns about low populations and continuing population declines, and the relative importance of limiting factors remains uncertain. The SDJV will continue to focus on species of highest conservation concern (due to population declines or harvest level) and interact with constituencies such as the flyway councils, state agencies, non-government organizations and industry to meet their needs and help ensure that sea duck populations remain healthy.

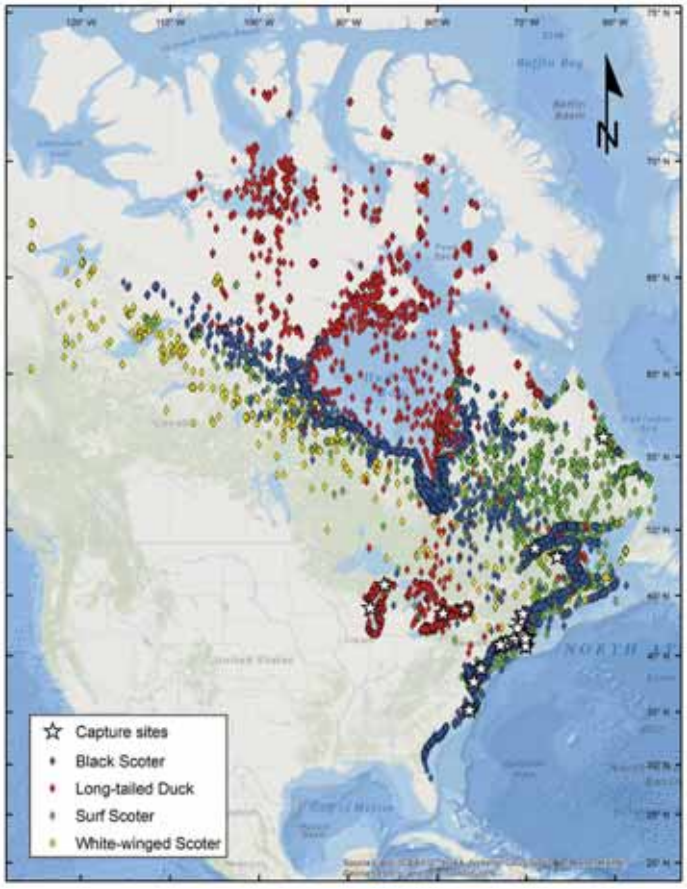
For more information, contact Garry Donaldson, Canadian Co-chair of the Sea Duck Joint Venture, (506) 364-5018, garry.donaldson@canada.ca.

Sea Duck Joint Venture Expenditures ($CAD)

	2016-2017	*Total (1998-2017)*
Banding		695,345
Research	870,172	9,241,803
Surveys	28,896	2,666,914
Conservation Planning	99,052	985,463
Education and Communication	9,604	54,108
Total	**$1,007,724**	**$13,643,633**

2016-2017 consists of the April 1, 2016 to March 31, 2017 time frame.

1998-2017 consists of the January 1, 1998 to March 31, 2017 time frame.



Locations of sea ducks marked in the Atlantic Flyway and tracked with satellite transmitters between 2009 and 2017.

Black Duck Joint Venture

American Black Duck.
Glen Parsons

www.blackduck.cmi.vt.edu

The BDJV includes Ontario, Quebec, New Brunswick, Nova Scotia, Prince Edward Island, Newfoundland and Labrador and 14 eastern U.S. states. The American Black Duck can be found in saltwater marshes, brackish and freshwater impoundments, riverine and estuary marshes, woodland wetlands, shallow lakes and boreal bogs. Black ducks use the Mississippi and Atlantic Flyways.

Through population monitoring, research and communications, the Black Duck Joint Venture (BDJV) provides information needed to effectively manage an iconic North American bird, the American Black Duck (hereafter black duck). As well as being the species most likely to come to mind when thinking of eastern North American ducks, black ducks are highly valued by hunters.

In the 1980s, the black duck population reached an all-time low prompting the establishment of tight hunting regulations. In Canada, regulations are established for two-year intervals for each province, within which are zones with different bag limits. In the United States, the regulations since the 1980s have placed a bag limit of one black duck per day. However, in 2017, the U.S. regulations were changed so that duck hunters can now take two black ducks per day. The regulations were examined and changed in light of three factors.

1. Declining hunters, yet stable ducks

The number of duck hunters in eastern Canada and the eastern United States has declined since the 1980s, as has the number of black ducks harvested. In two decades, from the late 1990s to current, the annual black duck harvest fell from more than 300,000 birds to fewer than 200,000 (both countries combined). Yet, the black duck population has remained stable during these years (see graph).

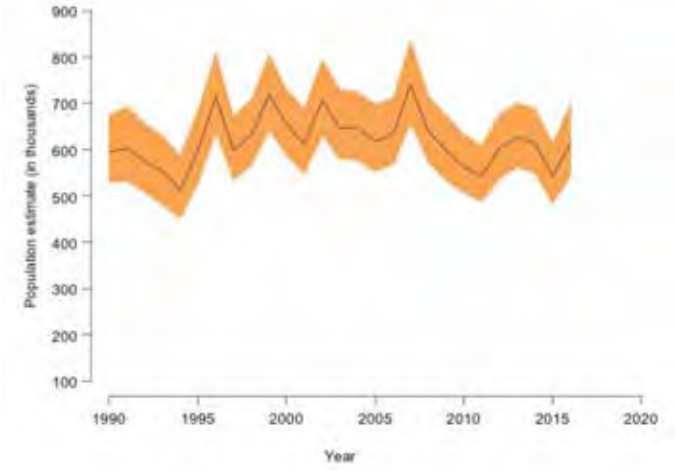
2. Having better information

Since the 1990s, concerted efforts have been made by BDJV partners to gather and analyze biological information on black ducks. Annual surveys of the breeding black duck population have provided a much clearer picture of the population size and how it fluctuates from year to year. The data indicate that the black duck population is currently stable. Additional information comes from a black duck banding program. Band reporting by hunters has allowed biologists to estimate harvest rates and survival rates and gain a better understanding of how harvesting affects the black duck population.

3. Developing a harvest strategy

U.S. and Canadian biologists used the decades of monitoring data to build a model of the black duck population. This modelling work then fed into an International Black Duck Harvest Strategy, which was adopted by both the United States and Canada in 2012. The Harvest Strategy has three objectives: (1) Maintain a sustainable black duck population; (2) Maintain a robust black duck hunting tradition; and (3) Maintain the historical and relatively equal proportion of the black duck harvest between Canada and the United States.

These three factors gave biologists a chance to look closely at how hunting affects the black duck population. Results from the population model showed that recent levels of hunting were not affecting the overall black duck population numbers on a year-to-year basis, and that's why the hunting regulations were relaxed for 2017–2018. Population and harvest monitoring will continue, and if the Harvest Strategy model detects a population decline, then the regulations for the United States will be changed again. In Canada, if the current policy recommendations remain unchanged, then the liberalization of hunting regulations would be recommended for 2018–2019. The objectives on both sides of the Canada–U.S. border are always to ensure a healthy black duck population and sustainable harvest into the future.



Annual population estimates of American Black Duck, 1990–2017.

Black Duck Adaptive Harvest Management Working Group

For more information, contact Tania Morais, Canadian Black Duck Joint Venture Coordinator, (506) 364-5085, tania.morais@canada.ca.

A hunter with his dog and two American Black Ducks.

Orrin Jones, III

Black Duck Joint Venture Expenditures ($CAD)

	2016-2017	*Total (1989-2017)*
Banding	316,594	8,152,943
Research	359,733	2,064,830
Surveys		7,980,152
Conservation Planning		351,980
Communication & Education	24,000	42,600
Total	**$700,327**	**$18,592,505**

2016-2017 consists of the April 1, 2016 to March 31, 2017 time frame.

1989-2017 consists of the January 1, 1989 to March 31, 2017 time frame.

Partners

Mallard brood.

Brian Wolitski, Ducks Unlimited Canada

Thank you to all our partners who contributed in 2016–2017:

Canadian Agencies

Acadia University
Agriculture and Agri-Food Canada
Alberta Conservation Association
Alberta Environment and Sustainable Resource Development
Alberta Fish and Game Association
Alberta Treasury
Alberta-Pacific Forest Industries Inc.
Anderson Exploration Ltd.
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ARC Resources Ltd.
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Association of Sustainable Forestry
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Atco Electric Ltd.
BC Hydro
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British Columbia Conservation Foundation
British Columbia Ministry of Environment
British Columbia Waterfowl Society
Canada Private
Canadian Natural Resources Ltd.
Canadian Nature Federation
Cenovus Energy Inc.
Clean Annapolis River Project
Columbia Basin Trust
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Delta Waterfowl Foundation
Ducks Unlimited Canada
Echo Foundation
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Edwards Land (Calgary) Ltd.
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Enbridge Pipelines Inc.
EnCana Corporation
Environment and Climate Change Canada
Evolve Surface Strategies Inc.
Flagstaff (County of)
Fondation de la faune du Québec
Forest Products Association of Canada
Friends of Cornwallis River Society
Halifax (Regional Municipality of)
Hamilton Community Foundation
Harvest Energy
Imperial Oil Charitable Foundation
Indigenous and Northern Affairs Canada
John David and Signy Eaton Foundation
Kinder Morgan, Inc.
Kings County (Muncipality of)
Lamont (County of)
Landwest Resource Services Ltd.
Manitoba Conservation and Water Stewardship
Manitoba Habitat Heritage Corporation
Manitoba Wildlife Federation Habitat Foundation
Minburn County (No. 27)
Ministère des Forêts, de la Faune et des Parcs du Québec
Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques du Québec
Mistik Management Ltd.
Mosaic Company
Mountain Equipment Co-op
NAL Resources Limited
Natural Areas Conservation Program
Natural Resources Canada
Natural Sciences and Engineering Research Council of Canada
Nature Conservancy of Canada

Natural peatland, Havre-Saint-Pierre, Quebec.

Christian Marcotte

New Brunswick Department of Environment
New Brunswick Department of Natural Resources
New Brunswick Wildlife Council
Newfoundland-Labrador Department of Environment and Conservation
Nexen Inc.
Norbury Foundation
Northrock Resources Ltd. (Canada)
Nova Scotia Crown Share Land Legacy Trust
Nova Scotia Department of Agriculture
Nova Scotia Environment
Nova Scotia Federation of Agriculture
Nova Scotia Federation of Anglers and Hunters
Nova Scotia Natural Resources
Omers Energy Inc.
Ontario Ministry of Natural Resources
Paramount Energy Trust
Parks Canada
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Saskatchewan Environment
Saskatchewan Water Security Agency
SaskPower
SaskTel
Shell Canada Products Ltd.
Sitka Foundation
Soil Conservation Council of Canada
St Paul (County of)
Strathcona (County of)
TD Canada Trust
The Catherine and Fredrik Eaton Charitable Foundation
The Nature Trust of British Columbia
Trent University
Trident Exploration Corp.
Tula Foundation
Turtle Mountain Conservation District
Université du Québec à Montréal
Vancouver Foundation
Vancouver International Airport Authority
Victoria Foundation
Weston Fellowship (McGill University)
Weyerhaeuser
Wildlife Habitat Canada
Yellowstone to Yukon Conservation Initiative Foundation
Yukon Department of Energy, Mines and Resources

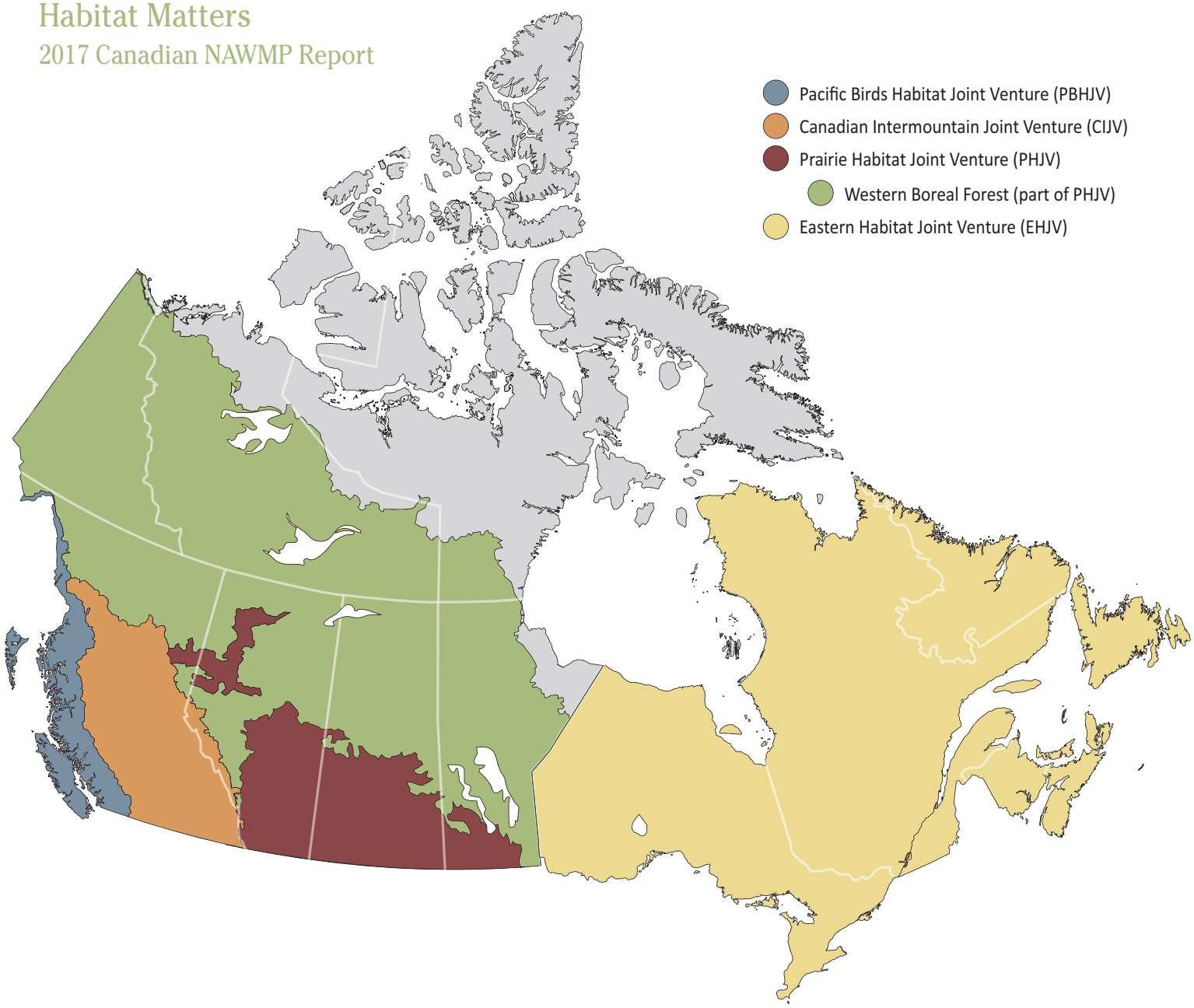
Drake and hen Northern Shoveler.

Shannon Badzinski

U.S. Agencies

Alabama Department of Conservation and Natural Resources
American Friends of the Nature Conservancy of Canada
Arkansas Game and Fish Commission
Atlantic Flyway Council
Bayer CropScience Inc.
Biodiversity Research Institute
California Department of Fish and Wildlife
Central Flyway Council
Colorado Parks and Wildlife
Connecticut Department of Energy and Environmental Protection
Delaware Division of Fish and Wildlife
Ducks Unlimited, Inc.
Florida Fish and Wildlife Conservation Commission
Georgia Department of Natural Resources
Idaho Department of Fish and Game
Indiana Department of Natural Resources
Kansas Department of Wildlife, Parks and Tourism
Kentucky Department of Fish and Wildlife Resources
Louisiana Department of Wildlife and Fisheries
Louisiana Pacific Corporation
Maine Department of Inland Fisheries and Wildlife
Maryland Department of Natural Resources
Massachusetts Division of Fisheries and Wildlife
Michigan Department of Natural Resources
Minnesota Department of Natural Resources
Mississippi Department of Wildlife, Fisheries and Parks
Mississippi Flyway Council
Missouri Department of Conservation
National Fish and Wildlife Foundation
Nebraska Games and Parks Commission
Nevada Department of Wildlife
New Hampshire Fish and Game
New Jersey Division of Fish and Wildlife
New Mexico Department of Game and Fish
North Carolina Wildlife Resources Commission
North Dakota Game and Fish Department
Ohio Division of Wildlife
Oklahoma Department of Wildlife Conservation
Open Space Institute
Oregon Department of Fish and Wildlife
Pennsylvania Game Commission
PEW Charitable Trusts
Rhode Island Department of Environmental Management
Rhode Island Department of Environmental Management, Division of Fish and Wildlife
South Carolina Department of Natural Resources
South Dakota Game, Fish and Parks Department
Southern Illinois University
Tennessee Wildlife Resources Agency
Texas Parks and Wildlife Department
The Rhode Island University
U.S. Fish and Wildlife Service
U.S. Geological Survey, Biological Resources Division
University of Delaware
Vermont Agency of Natural Resources
Virginia Department of Game and Inland Fisheries
West Virginia Division of Natural Resources
Wisconsin Department of Natural Resources
Wisconsin Waterfowl Hunters Association
Wyoming Game and Fish Department
Yellowstone to Yukon Conservation Initiative—U.S.

Habitat Matters
2017 Canadian NAWMP Report



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To view this publication electronically
nawmp.wetlandnetwork.ca

North American Wetlands Conservation Act Funding in Canada
nawcc.wetlandnetwork.ca

North American Bird Conservation Initiative
nabci.net

Map of Bird Conservation Regions
nabci-us.org/resources/bird-conservation-regions/