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HabitatMatters

2021 Canadian NAWMP Report



"On Golden Pond – Common Goldeneye" from the
2021 Canadian Wildlife Habitat Conservation Stamp series.

Artist: Ric Sluiter



*North American Waterfowl
Management Plan*

*Plan nord-américain de
gestion de la sauvagine*

*Plan de Manejo de Aves
Acuáticas Norteamérica*

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We would like to acknowledge that the lands on which the North American Waterfowl Management Plan is implemented in Canada are the traditional, treaty and unceded territories of First Nations, Inuit and the Métis Nation. The act of acknowledging the land, and the signed treaties where applicable, is an expression of respect and gratitude for the land. This action is to remind us that our places of work, where we live and where we gather are on the lands of First Nations, Inuit and the Métis Nation and is a recognition that we are all accountable to these relationships on a daily basis.



About the NAWMP

The North American Waterfowl Management Plan (NAWMP) 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 NAWMP engages the community of users and supporters committed to conserving and valuing waterfowl and wetlands.

In 1986, the Canadian and American governments signed this partnership agreement, laying the foundation for international cooperation in the recovery of declining waterfowl populations.

Wood Duck.
Jean-Maxime Pelletier

Mexico became a signatory to the NAWMP with its update in 1994. As a result, the NAWMP partnership extends across North America, working at international, national and regional levels on a variety of waterfowl and habitat management issues.

Since its creation, the NAWMP’s 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 NAWMP. Each Joint Venture includes a range of partners from federal, provincial and local governments to conservation organizations. Strategic and Implementation Plans, developed based on the NAWMP’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



Common Goldeneye.
Jean-Maxime Pelletier

Accomplishments by Habitat Joint Ventures (1986–2021)

23.1

Million acres of habitat secured

(9.4 Million hectares)

Involves the protection of habitat through land title transfer or binding legal agreements with landowners (10-year minimum).

180.7

Million acres of habitat influenced

(73.1 Million hectares)

Involves direct actions that protect or enhance habitat without legal or binding agreements. These actions result in applied land-use change.

3.9

Million acres of habitat enhanced

(1.6 Million hectares)

Involves actions that increase habitat carrying capacity for waterfowl and other wildlife.

Accomplishments by Habitat Joint Ventures (2020–2021)

120.8

Thousand acres of habitat secured

(48.9 Thousand hectares)

4,700

Thousand acres of habitat influenced

(1,900 Thousand hectares)

388.5

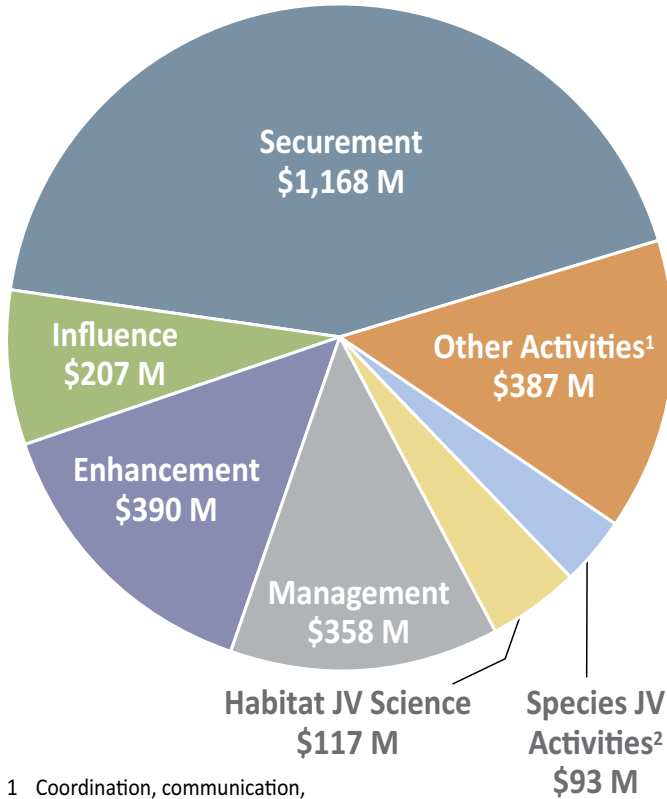
Thousand acres of habitat enhanced

(157.2 Thousand hectares)

Note: Managed acres are no longer reported in *Habitat Matters* to prevent redundant data, as all managed acres occur on secured land.

Expenditures

By activity 1986 to 2021
(\$2,720 M CAD)



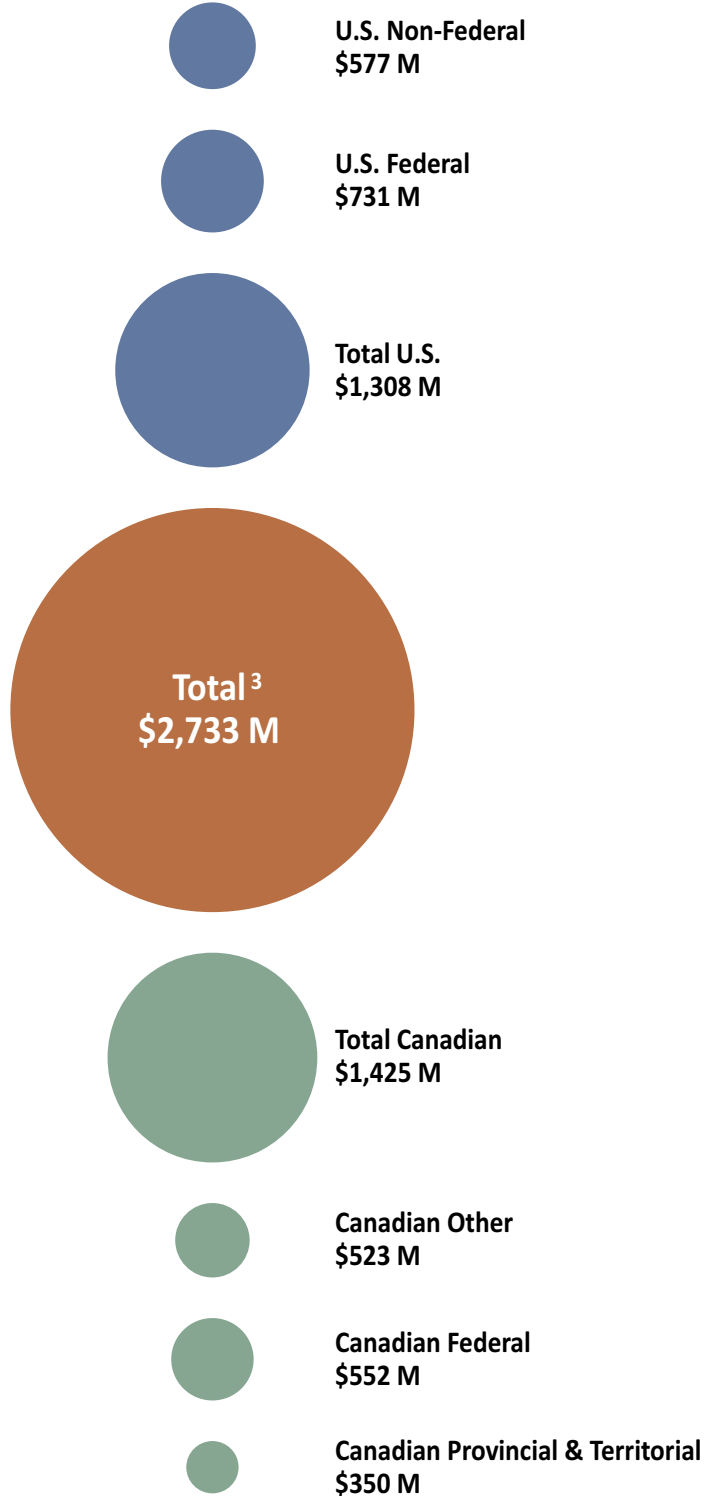
- 1 Coordination, communication, policy, crop damage and compensatory mitigation
- 2 Banding, survey and research

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.

1986-2021 consists of the January 1, 1986 to March 31, 2021 time frame.
2020-2021 consists of the April 1, 2020 to March 31, 2021 time frame.

Contributions

In support of the NAWMP in Canada 1986 to 2021
(\$2,733 M CAD)



³ Includes \$0.29 M in international contributions



Resilience and Adaptation: Conservation During a Pandemic

Female Mallard and ducklings.

Jean-Maxime Pelletier

There has been little escape from the impacts of the SARS-CoV-2 virus, and conservation work has been no exception.

When the unexpected hits, how will we respond? It's safe to say that 2020 was a year full of the unexpected.

The devastating impact of COVID-19 has been felt throughout the economy as worldwide lockdowns brought our everyday activities to a grinding halt. There has been little escape from the impacts of the SARS-CoV-2 virus, and conservation work has been no exception. Closures and travel restrictions resulted in widespread job losses and reduced fieldwork and monitoring, with habitat restoration and securement projects being curtailed and important scientific data sets being left with gaps. These losses have increased the vulnerability of wildlife and wild areas, some of which rely heavily on tourism for their protection.

Yet, out of tragedy, we have learned that there is tremendous resilience and adaptation. The work on Canadian wetlands and waterfowl has been a part of this ebb and flow of learning, as we all became accustomed to doing things a little differently, from virtual meetings and conferences to modified on-the-ground habitat delivery. Projects funded by the *North American Wetlands Conservation Act* were all able to go forward as planned and maintained their 30-plus-year history of wetland and waterfowl conservation.

In 2020–2021, North American Waterfowl Management Plan (NAWMP) partners continued to secure, influence and enhance wetlands in Canada (5.2 million acres, 2.1 million hectares). All of our NAWMP partners and Canadian Habitat and Species Joint Ventures adapted to the unforeseen circumstances and did the best work they could for wetland and waterfowl conservation. Therefore, this year's conservation report highlights projects undertaken across Canada in four Habitat and three

Species Joint Ventures where partners often had to display their resilience by doing things a little bit differently than before. Some of these projects are bringing to the forefront the need to recognize and include diverse communities in conservation initiatives and recreation.

In the Habitat Joint Ventures, the Eastern Habitat JV reports on two projects on Prince Edward Island, one to protect vulnerable shoreline and the other to restore wetlands on agricultural sites. Both were able to proceed largely unaltered, despite the pandemic. In addition, the article describes the effects of school shutdowns on one young person who found himself accompanying his mom into the field. The Pacific Birds Habitat JV faced delays with the start of fieldwork, but several projects still managed to go ahead. For example, a previously reconstructed wetland received a third year of monitoring efforts, which found that waterfowl and other birds are successfully populating the area with both increased numbers and species. In another project, JV partners planned and ran a series of bird walks for marginalized communities that face barriers for accessing nature and viewing wildlife. Despite limits on group size, as a result of COVID-19 restrictions, these walks were well received and increased participants' awareness of birds and nature.

In the Canadian Intermountain JV, partners were able to go through with two conservation area expansions in the arid Okanagan region with the addition of lands containing marsh, wetland and floodplain habitats. Last, resilience and relationships were common threads in the Prairie Habitat JV, where partners and funds came together to enhance habitat conservation opportunities such as securing and restoring wetlands. For example, in one project in Alberta, two generations of landowners are thrilled with the results of wetland restoration on their pasture lands, which now have more wildlife habitat for ducks and geese while maintaining their capacity to pasture cattle.

For the Species Joint Ventures, some projects were significantly disrupted or even temporarily halted during the pandemic. However, new opportunities arose as a result. For example, in the Arctic Goose JV, fieldwork cancellations allowed additional funds to go to a study of the migration ecology of Atlantic

Brant. In the Black Duck JV, biologists made population predictions using historical data to fill gaps left by limited field monitoring data. And in the Sea Duck JV, funds were redirected to allow a new initiative to get off the ground with a focus on better understanding American Common Eider distribution and habitats.

These varied projects and studies that got underway, continued or wrapped up in 2020–2021 demonstrate the ability of NAWMP partners to pivot when necessary and to persevere through unexpected events.

Something else unexpected happened over the year. More and more people have found themselves going out in nature and using natural areas to nurture themselves during the pandemic. In a January 2021 survey commissioned by the Nature Conservancy of Canada, three in four Canadians indicated that they found being outdoors more important to them now than before the pandemic. In a poll conducted by the Government of Canada, 84% of Canadian respondents agreed that to take care of ourselves, we must take care of nature.

This increased awareness of nature and the acknowledgement of nature's benefits for our health and well-being both signal promising times ahead for conservation. When the unexpected *did* hit in 2020, not only did the NAWMP partners adapt and continue their critical work, but Canadians themselves elevated nature and conservation to a place of new importance.

Birdwatching on the prairies.

David Johns



Habitat Joint Ventures

Kenauk Nature Reserve, Quebec.

Juliana Balluffi-Fry

The Canadian 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.



Eastern Habitat Joint Venture

Mossy Point at North Enmore, Prince Edward Island.
Lanna Campbell, Nature Conservancy of Canada



www.ehfv.ca
www.ehfv.ca/fr

The Eastern Habitat Joint Venture (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 million acres (48 million hectares) of freshwater and tidal wetlands. Important habitats include coastal bays and salt marshes, lakeshore marshes, floodplain wetlands and boreal forest wetlands. The EHJV has six priority waterfowl species: American Black Duck, Mallard, Ring-necked Duck, Common Goldeneye, Barrow's Goldeneye and Common Eider (subspecies *dresseri*). The habitat within the EHJV supports 95% of the continental population of American Black Duck and 80% of the Common Eider subspecies *dresseri*.

The EHJV, which encompasses one-third of Canada's land mass and two-thirds of its population, has invested heavily in projects to secure and influence wetlands and associated uplands for the benefit of waterfowl and all other bird species. While the focus of our reports in recent years has been on projects in Ontario, New Brunswick and Newfoundland and Labrador, this year's report highlights work on Prince Edward Island (PEI).

This island province is home to significant wetland areas with diverse wildlife, bird and waterfowl populations. The two projects described here were able to proceed largely unaltered despite the COVID-19 pandemic; one project protected a tract of PEI coastline, building a contiguous protected area in an often fragmented landscape, and the other project reduced the environmental impacts of agriculture on several wetlands, improving water quality and enhancing habitat for waterfowl and other species. This year's article also reports on a positive outcome of the

COVID-19 shutdowns in the spring and summer of 2020—the story of a child who got unplanned, firsthand experience with wetlands and nature.

Protecting vulnerable shoreline habitats

There are few spots on PEI that will leave you humbled by the wilderness in the way that Egmont Bay does. Its coastline has protected estuaries, forested shores and largely undisturbed salt marshes. Salt marshes are some of the world’s most biologically productive and valuable ecosystems, supporting diverse birds and plants and acting as nurseries for fish and other marine life. Collectively, the salt marshes within the Egmont Bay watershed represent one of the best remaining examples of landscape connectivity within PEI. The largest unbroken tract of salt marsh on the island occurs along the Percival River, which feeds into Egmont Bay and sustains rich wetland habitats critical to the life cycle of many populations of migratory waterfowl, shorebirds and seabirds, such as Hooded Merganser, American Black Duck and Willet.

The Nature Conservancy of Canada (NCC) has conserved over 740 acres (300 hectares) of coastal salt marsh, freshwater wetland and predominantly black spruce forest surrounding the Percival River since 2007. NCC’s Percival River Nature Reserve is their largest nature reserve on PEI, and they are continually expanding it to increase habitat connections. Their latest project, a partial land donation in February 2021, is a 74-acre (30-hectare) property called Mossy Point, a peninsula that extends into the mouth of Egmont Bay. This acquisition protects valuable wildlife habitat and ensures that the area will remain a natural, undeveloped landscape forever.

This acquisition protects valuable wildlife habitat and ensures that the area will remain a natural, undeveloped landscape forever.

A salt marsh at Mossy Point, Prince Edward Island.

Lanna Campbell, Nature Conservancy of Canada



It is no secret that PEI has a fragile, vulnerable shoreline. The less infrastructure placed near the coast, the better. Therefore, by protecting shorelines like Mossy Point, this project also leaves room for natural coastlines to shift in a changing climate.

NCC doesn't work alone in the Percival River area. Together, Ducks Unlimited Canada, the Island Nature Trust, the Province of PEI and NCC have so far protected 2,830 acres (1,145 hectares) of land in the Percival River watershed.

In an ordinary field season, NCC invites the public to visit their nature reserves and help care for the land with hands-on stewardship activities. For example, in the past, NCC has hosted a shoreline cleanup in the Percival River Nature Reserve to remove marine debris accumulated along the shoreline. The COVID-19 pandemic meant that they were unable to host these types of conservation volunteer events, but Islanders were still eager to get outdoors. So NCC pivoted to encourage people to explore nature on their own, safely. For instance, in the summer of 2020, NCC created a country-wide bioblitz, which was a week-long virtual event to encourage people to observe nature and learn more about habitats and species in their backyards and neighbourhoods.

Restoring three wetlands in agricultural settings

Ducks Unlimited Canada (DUC) entered into an agreement with the East Prince Agri-Environmental Association to restore wetlands at three sites on PEI. The project was part of the Living Laboratories Initiative, which Agriculture and Agri-Food Canada (AAFC) has implemented across Canada as a new, collaborative approach to agricultural innovation. This initiative brings stakeholders together on working farms to develop, test and adopt new practices and technologies that will tackle important environmental issues.

PEI, one of the largest producers of potatoes in Canada, has a rolling topography with iron-rich soils that are prone to weathering (which creates the soil's world-famous red colour) and erosion, so nutrients and other contaminants leach easily from the landscape. Partners in the Living Labs project, which took place in the Dunk River, Kensington North and Souris watersheds, as well as at the AAFC's Harrington Research Farm, identified the reduction of environmental impacts associated with potato production as the primary project objective. In particular, the work focused on developing and testing best management practices to address soil health and water quality.

The East Prince Agri-Environmental Association reached out to DUC for help with the project, because of their expertise in creating wetlands. "Wetlands are a key tool in the toolbox to help with water conservation and purification," said Jana Cheverie, Head of Habitat Retention Planning at DUC Atlantic. This partnership helped leverage *North American Wetlands*



The Souris West site during and after wetland restoration.
Johnathan Platts, Ducks Unlimited Canada

Conservation Act funding by providing some of the matching Canadian funds needed to deliver on commitments through NAWMP.

Phase 1 activities included desktop assessments of potential wetland restoration sites, as provided by community-based watershed stewardship groups associated with the PEI Watershed Alliance. In total, 12 sites were assessed using desktop analysis, and nine sites were flagged for field assessment in spring 2020. Phase 2 activities included field assessments, wetland design and construction of three wetland sites: Ramsay Wetland, Bear River and Souris West.



Parker Beaudry enjoying the natural wetland complexes at Carden Alver Provincial Park, Ontario.

Jenn Lavigne

Parker in the Field

In summer 2020, nine-year-old Parker Beaudry joined his mom, Jenn Lavigne, on some of the many road trips that are part of the job when you build wetlands with DUC for a living.

With schools closed and Parker's usual summer activities curtailed, Jenn faced long weeks ahead with no plan for her son. That's when she asked about taking Parker with her on wetland site visits. "I am really thankful that our leadership was so ready to pivot during this time of emergency, or I don't know how I could have done my job," said Lavigne. "Parker and I will never forget this time together."

Parker made the most of every moment. Whenever they arrived at a site, he would take out his blue camera and start taking pictures of everything: beach glass, snakeskin, burrows and, of course, wetlands. Then he would take out his notepad and jot down what he saw, writing about everything from duckweed to solar pumps.

According to Parker, "wetlands are hard to build. Really hard. It's better to keep the wetlands we have than build new ones."

Parker and Jenn shared their pictures and field notes as Parker in the Field, a fun series that ran on DUC's social media feeds all summer. Check out Parker's adventures on Facebook at www.facebook.com/DUCOntario (search "Parker in the Field").

Parker completing an annual inspection at a DUC site at Tiny Marsh Provincial Wildlife Area, Ontario.

Jenn Lavigne



The three landowners at these sites signed conservation agreements with DUC in October 2020. The restoration work itself was completed in spring 2021. DUC hopes these wetland restorations will encourage other farmers across PEI to get involved, since the whole island is an EHJV target area due to historical wetland loss. “We certainly would love to work with more landowners in identifying these wetland restoration sites,” Cheverie said.

Not only are such wetland restoration projects important for improving water quality in an agricultural setting, they also provide pairing and breeding habitat for a range of waterfowl, including American Black Duck, Mallard and Canada Goose, as well as for at-risk species in PEI such as Bank Swallow.

For more information, contact Tania Morais, Eastern Habitat Joint Venture Coordinator, (506) 224-0279, tania.morais@ec.gc.ca.

Eastern Habitat Joint Venture

Contributions (CAD)

	2020-2021	Total (1986-2021)*
Total	28,767,190	666,552,388

Accomplishments (Acres)

	2020-2021	Total (1986-2021)*
Secured	45,007	2,154,470
Enhanced	16,183	698,032
Influenced	80,073	78,056,026

Secured and enhanced acres are not additive.

2020-2021 consists of the April 1, 2020 to March 31, 2021 time frame.

1986-2021 consists of the January 1, 1986 to March 31, 2021 time frame.

* Includes first-step projects completed from 1986-1988 before the formal recognition of the EHJV in 1989.



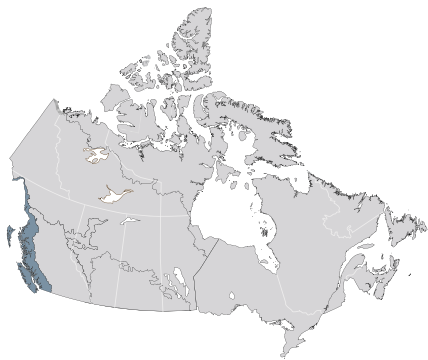
Hooded Merganser.
Jean-Maxime Pelletier



Pacific Birds Habitat Joint Venture

Ring-Necked Duck.

Jean-Maxime Pelletier



www.pacificbirds.org

The Pacific Birds Habitat Joint Venture (PBHJV) is an international Joint Venture that includes portions of British Columbia (B.C.), Alaska, Washington, Oregon, California and Hawaii. The B.C. 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 for wildlife. 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 B.C. coast. The Fraser River Delta in southern British Columbia is the only Canadian Important Bird & Biodiversity Area designated as “in danger” by BirdLife International. This delta supports the highest density of wintering waterfowl in Canada. Key species in the B.C. 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.

Like for everyone involved in conservation work, partners in the international PBHJV (or “Pacific Birds”) faced some challenges in 2020–2021 due to the COVID-19 pandemic. These included the need to reprioritize tasks and delay the start of fieldwork. When fieldwork could proceed, people couldn’t carpool like in previous years, so project work sometimes meant greater carbon emissions from the use of multiple vehicles to arrive onsite. Despite the challenges, many projects went ahead. This year, the report highlights four projects: the acquisition of an undeveloped island with significant habitat values, monitoring work at a previously reconstructed wetland, an invasive plant management experiment and an outreach project targeted at diverse communities.

Acquiring an undeveloped island in the Salish Sea

Breton Island–Whitridge Reserve is a 12.6-acre (5-hectare) island in the Salish Sea near the east coast of Quadra Island, which is itself just off the east coast of Vancouver Island. Breton Island has excellent conservation values, because it has no existing structures or docks and supports thriving plant and bird populations.

The property was donated to The Nature Trust of British Columbia (NTBC) by four brothers of the Whitridge family. They inherited the island from their parents, who had bought it in 1968. When the brothers thought about selling the island, they didn't want to see it developed—they wanted the island to remain a wild space. A friend suggested they consider donating their island to an organization that protects land in perpetuity, which led them to NTBC. "It's reassuring to know that the island and all its wonders will be protected in perpetuity by The Nature Trust for the enjoyment of future generations," said A. Whitridge, one of the brothers.

The property contains three sensitive ecosystems: mature coniferous forest, herbaceous rocky shoreline and shallow marine area. All three ecosystems are in a relatively natural state. The shallow marine area provides important habitat for sea ducks, shorebirds, seabirds and other waterbirds. Among the birds using the island are four species listed as threatened or of special concern under Canada's *Species at Risk Act*: the Marbled Murrelet, the Ancient Murrelet, Cassin's Auklet and Great Blue Heron. Provincially recognized at-risk species that use the island include Brandt's Cormorant and Common Murre. Waterfowl using this paradise include Common Merganser, Harlequin Duck, Lesser Scaup, Pigeon Guillemot, Red-necked Grebe, Surf Scoter, Surf-bird and White-winged Scoter.

By protecting the island, this acquisition will ensure that the 0.75 miles (1.2 km) of coastal shoreline and approximately 22 acres (8.9 hectares) of shallow marine area surrounding the island will not be disturbed by infrastructure that could extend over or through its important habitats. Jasper Lament, CEO of NTBC, said, "The island provides foraging for a really diverse community of migratory birds. These birds traverse national borders, so this is a wonderful story of cross-border conservation."



The 12.6-acre (5-hectare) Breton Island is a jewel in the Salish Sea, British Columbia.

Markus Thompson



Breton Island–Whitridge Reserve.

Markus Thompson

The property contains three sensitive ecosystems: mature coniferous forest, herbaceous rocky shoreline and shallow marine area.

Monitoring the reconstructed Chase Woods wetland

Prior to the arrival of settlers on Vancouver Island, the lowlands in the Chase Woods Nature Preserve were part of the biologically rich Cowichan/Koksilah estuary. This area continues to be part of the traditional territory of the Cowichan Tribes. In the early 20th century, much of the estuary was drained and converted to farmland. In 2018, the Nature Conservancy of Canada (NCC) began a project to transform an old hayfield dominated by invasive Reed Canary Grass with patches of willow, Himalayan Blackberry and shrubs into a 6-acre (2.6-hectare) marsh wetland. NCC worked with wetland specialists to reconstruct a sinuous stream channel and 11 pools of varying depths. Fall and winter rains filled the channel and pools, giving form to a freshwater marsh that now swells and shrinks with the seasons. This project helps to achieve NAWMP goals by recreating wetland and associated upland habitat for waterfowl for breeding, nesting and migratory stopovers.



Hooded Mergansers, Chase Woods Nature Preserve.
Ren Ferguson

Once the structural work was complete and the wetland vegetation was starting to become established, NCC turned their attention to monitoring the new wetland habitat to determine numbers and species of waterfowl and other wetland-dependent bird species using it. Avian survey specialist Ren Ferguson has now monitored the wetland for three years, with summer 2020 being the third year of collecting data. Her observations show that, in a nutshell, the wetlands are working. More birds and a greater diversity of birds use this area today than did before the restoration project began. Frogs, fish and a variety of insects are also showing up to take advantage of the wetland habitat.

The COVID-19 pandemic didn't prevent 2020 from being a banner year for new species appearing at the wetland. Ferguson observed 33 bird species, 10 of which were new to the wetland, including Green-winged Teal, American Wigeon and three species of diving ducks: Ring-necked Duck, Bufflehead and

Hooded Merganser. The arrival of the diving ducks indicates that as the wetland ages, it is developing diverse food sources. Also, seven waterfowl species overwintered from 2019 to 2020, compared with none pre-restoration. Nesting increased in the wetland, and there were even a few firsts in 2020 with Wood Duck and Mallard successfully raising young to fully feathered juveniles.

Frenchies Island restoration

Ducks Unlimited Canada (DUC) is working with Dan Stewart, a master's student at the University of British Columbia, on invasive cattail management on Frenchies Island in the South Arm Marshes Wildlife Management Area in Delta, B.C. This area is part of an internationally designated Western Hemisphere Shorebird Reserve Network site, with as many as 1.4 million birds estimated to rely on the habitat annually.

For the past two years, crews removed cattail by various methods to allow the island to become better suited for waterfowl and salmon. The removal of cattail is critical, as the South Arm Marshes area supports the highest densities of waterbirds and shorebirds in Canada. The area is known to see a wide variety of migratory

waterfowl, including Green-winged Teal, Northern Pintail, Goldeneye, Wigeon, Ruddy Duck and Snow Goose. The channels of Frenchies Island and other habitats across the South Arm Marshes also offer vital habitats for many fish species, including salmon in their early stages of life.

COVID-19 protocols presented a challenge for staff in 2020. Crew size was reduced and masks were a priority. While the health protocols slowed travel times, the work was completed on time. A big part of the success of the project comes thanks to funding through the *North American Wetlands Conservation Act*.

Stewart said that they have observed positive signs of native plants like Lyngbye's Sedge taking hold in places formerly with stands of invasive cattail. Other native plants identified include American Water Plantain, Water Parsnip and Wapato, the last a culturally important species for Indigenous peoples. "After the cattail cutting, channels on the island that had been filled with the plant are now opening back up, allowing greater water flow, which benefits both waterfowl and fish," said Stewart. "Crews have already seen an increase in waterfowl usage in these open-water areas."



Frenchies Island in the South Arm Marshes Wildlife Management Area, British Columbia.

Alex Harris

Cutting invasive cattail on Frenchies Island.

Tim Fitzgerald





Bird walk for the Mandarin-speaking community at a marsh wetland in Richmond, British Columbia.

Andrew Huang

Holding bird walks for diverse communities

In fall 2020, Birds Canada and the Canadian Wildlife Service (CWS) hosted a series of bird walks in British Columbia’s Lower Mainland region specifically for diverse communities, including the Chinese-speaking and Arabic-speaking communities, people of colour, LGBTQ+ community, and women and femmes. The walks, which Birds Canada and CWS held along with local partners Richmond Tourism, WildResearch and the Stanley Park Ecology Society, were organized in response to increased understanding from justice, equity, diversity and inclusion research.

Recent research has shown that marginalized groups face barriers for accessing nature or viewing wildlife, whether they be barriers related to language, culture, discrimination, social connections or socio-economic factors. Yet, diversity is a key component in conservation, because the more diverse the participants in conservation, the greater portion of society has a stake in how conservation is implemented. Wildlife recreation is also associated with greater engagement in conservation behaviours. In addition, in the North American model of wildlife conservation, wildlife and habitat are held in public trust, which implies equitable access to them.

COVID-19 restrictions were at a level where the bird walks could go ahead but with no more than six people. The walks were scheduled for two October weekends and were held in marsh wetlands, urban parks and estuarine habitats in the Lower Mainland and Fraser River valley, with each walk catering to a marginalized group. In total, 37 people signed

up for seven walks. Both the high level of participation and the positive results from a post-walk questionnaire, in which participants indicated an increased awareness of birds thanks to the supportive environment, suggest great interest from these communities. Based on this interest and the success of the bird walks, PBHJV partners in British Columbia will pursue more projects and events to continue building inclusive and diverse engagement in the environment.

For more information, contact Andrew Huang, Pacific Birds Habitat Joint Venture Coordinator, (604) 350-1913, andrew.huang@ec.gc.ca.

Pacific Birds Habitat Joint Venture Contributions (CAD)

	2020-2021	Total (1991-2021)
Total	5,695,931	239,155,654

Accomplishments (Acres)

	2020-2021	Total (1991-2021)
Secured	535	139,903
Enhanced	4,326	205,332
Influenced	13,924	6,793,555

Secured and enhanced acres are not additive.

2020-2021 consists of the April 1, 2020 to March 31, 2021 time frame.

1991-2021 consists of the January 1, 1991 to March 31, 2021 time frame.



Northern Pintail.
Jean-Maxime Pelletier

Canadian Intermountain Joint Venture

One of the wetlands on the newly acquired lands in Sage and Sparrow Conservation Area, southern British Columbia.

Steve Austin



www.cijv.ca

With an area of 123.5 million acres (50 million hectares), the Canadian Intermountain Joint Venture (CIJV) covers portions of British Columbia (B.C.) 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 Joint Venture's estimated 1.45 million birds represent 70% of British Columbia'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 CIJV partners focus much of their work on mid- to low-elevation grasslands and on wetlands and floodplains in valley bottoms, since these areas are especially threatened in this region by climate change and landscape-level habitat alterations. This year, CIJV partners had to make some adjustments to follow COVID-19 protocols, including wearing masks and limiting workers' proximity to each other during travel and at field sites, but fortunately, much of the planned work was able to continue relatively unhindered. This year's report highlights work completed to restore a series of small wetlands and expand two conservation areas.

Restoring wetlands on the Winters property

In 2020–2021, Ducks Unlimited Canada (DUC) excavated nine new small wetlands on a South Okanagan property it had purchased in 2002 with funding from the *North American Wetlands Conservation Act*. South of the town of Oliver, the Winters property is adjacent to the Okanagan River and has an old oxbow running through it, mostly isolated from the river channel. The nine new wetlands were designed to

provide habitat for waterfowl and other migratory birds, as well as two at-risk species—Spadefoot Toad and Tiger Salamander—that have been particularly hard hit in this part of British Columbia.

“Old oxbow depressions were targeted to provide the most certainty that some water will remain throughout the yearly cycle,” said Bruce Harrison, Provincial Biologist at DUC. Harrison said pond depths will provide at least three feet of water during the annual low-water period in January and February. He said the challenge was building wetlands that benefited all the wildlife in the region. “Slopes were designed to be more gradual on one side as spadefoots prefer warm, gentle southwestern slopes,” said Harrison.

The Winters property has been classified by the Canada Land Inventory as 2S, which indicates its high productivity potential for waterfowl. The property is within the Osoyoos Oxbows Important Bird Area and provides high-quality breeding wetlands for birds in a location that also serves as a migration staging point for waterfowl moving through and within British Columbia. More than 25 waterfowl species have been documented in the area, including Mallard, Wood Duck, Cinnamon Teal, American Wigeon, Hooded Merganser, Canada Goose and Trumpeter Swan.



Green-winged Teal.
Ducks Unlimited Canada

Wetland construction underway on the Winters property, southern British Columbia.
Ducks Unlimited Canada





Marsh and wetland habitats in Sage and Sparrow Conservation Area attract several waterfowl species including Ruddy ducks.

Steve Austin

As the northern limit of a dry grassland ecosystem, this area may contain species that are more adaptable to fluctuations in climate.

Expanding the Sage and Sparrow Conservation Area

The Nature Conservancy of Canada (NCC) added 312 acres (126 hectares) to the Sage and Sparrow Conservation Area near Osoyoos, B.C., in the South Okanagan region. Now at more than 3,750 acres (1,500 hectares), this conservation area protects rare grasslands and other habitats on the traditional territories of the Syilx (Okanagan) Peoples.

Funding provided via the *North American Wetlands Conservation Act* leveraged over CA\$1 million for this conservation acquisition, which features two significant wetlands nestled

in an otherwise dry landscape of sagebrush steppe, bunchgrass grasslands, Interior Douglas-fir forest and trembling aspen woodlands. The variety of terrain, microclimates and structural diversity add immensely to the conservation value of this property.

The area represents the northernmost tip of the arid, desert-like ecosystem extending through central Washington State. The new lands extend the conservation area to the north, filling a gap in a north–south migratory corridor for species moving between the Great Basin deserts of the western United States and the dry grasslands of British Columbia’s Okanagan and Similkameen valleys. As the northern limit of a dry grassland ecosystem, this area may contain species that are more adaptable to fluctuations in climate. Protecting these edge ecosystems can play an essential role in climate change adaptation. “The work we are doing in this imperilled landscape is critical for the plants, animals and ecosystems here, not only in the face of climate change, but in the face of ongoing development pressure,” said Barb Pryce, NCC’s Southern Interior Program Director.

Since establishing Sage and Sparrow in 2012, NCC has documented 62 at-risk plant and animal species, some of which are found nowhere else in Canada and are listed under Canada’s *Species at Risk Act*. “Expanding Sage and Sparrow will provide greater security to dozens of at-risk species, in one of the province’s most unique landscapes,” said Karla Kozakevich, Chair of the Regional District of Okanagan-

Similkameen. In addition, the conservation area hosts populations of several waterfowl and water birds, including Blue-winged Teal, Mallard, Ruddy Duck, Pied-billed Grebe, Scaup and American Coot.

This acquisition was funded with contributions from the Government of Canada’s Natural Heritage Conservation Program, Regional District of Okanagan-Similkameen, U.S. Fish and Wildlife Service, The Sitka Foundation, Okanagan Similkameen Parks Society, Oliver Osoyoos Naturalists Club, South Okanagan Naturalists’ Club and many generous individual donors.



Lesser Scaup.

Jean-Maxime Pelletier



Park Rill Floodplain, British Columbia.
The Nature Trust of BC

Acquiring the Park Rill Floodplain property

In another expansion of an existing conservation area in the arid South Okanagan region, The Nature Trust of BC (NTBC) added 151 acres (61 hectares) to the White Lake Basin Biodiversity Ranch Complex, which is a combined sustainable ranch and grassland conservation area. The new lands are the Park Rill Floodplain, which boast natural grassy and wetland terrains and will increase the conservation of biodiversity and connectivity of wildlife habitats in this area. The property contains Park Rill Creek and its surrounding flat floodplain with a diversity of sensitive ecosystems that support many species of conservation concern.

Approximately 75% of the Park Rill Floodplain remains in a relatively natural state and supports six sensitive ecosystems: sagebrush steppe, grassland, open coniferous woodland, seasonally flooded fields, wet meadow and sparsely vegetated rock outcrops. At least five species identified under Canada’s *Species at Risk Act* have been identified on the property. The arid conditions of the property are especially habitable to rare and at-risk reptiles and amphibians, like the Great Basin Spadefoot and the Western Rattlesnake. Among the at-risk birds found on the property are Lewis’s Woodpecker, an unusual woodpecker that rarely drills into trees but instead catches insects in flight; Peregrine Falcon, which has been seen by the previous property owners; and Western Screech-Owl, which is known to nest on the property.

NTBC acquired the White Lake Basin Biodiversity Ranch in the 1990s and has been a pioneer in the creation of biodiversity ranches in the province. Park Rill Floodplain is the ninth fee simple acquisition NTBC has made as part of the ranch. Combined with Crown grazing licences, the ranch now covers more than 20,000 acres (8,000 hectares). The goal of NTBC’s program is to facilitate a viable domestic cattle ranch while conserving and restoring natural grasslands and associated ecosystems.

This project was undertaken with the financial support of Environment and Climate Change Canada, Habitat Conservation Trust Foundation, George Galbraith and family, Val and Dick Bradshaw and many other individual donors.

For more information, contact Andrew Huang, Canadian Intermountain Joint Venture Coordinator, (604) 350-1913, andrew.huang@ec.gc.ca.

Canadian Intermountain Joint Venture Contributions (CAD)

	2020-2021	Total (2003-2021)
Total	5,103,379	95,727,602

Accomplishments (Acres)

	2020-2021	Total (2003-2021)
Secured	1,174	362,286
Enhanced	1,715	205,041
Influenced		50,906

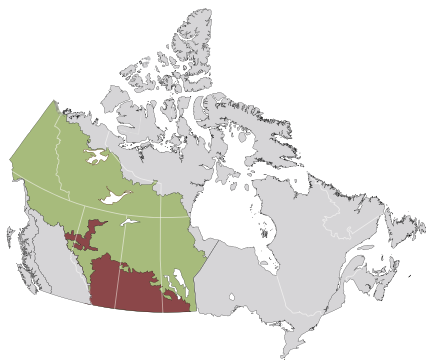
Secured and enhanced acres are not additive.
2020-2021 consists of the April 1, 2020 to March 31, 2021 time frame.
2003-2021 consists of the January 1, 2003 to March 31, 2021 time frame.



Prairie Habitat Joint Venture

A wetland complex near the Saskatchewan River delta.

Ducks Unlimited Canada



www.phjv.ca

The Prairie Habitat Joint Venture (PHJV) delivery area covers two distinct biomes in western Canada: the Prairie Parklands and the Western Boreal Forest (WBF). Together, this region supports approximately 50% of North American breeding waterfowl. One of the continent's first priority landscapes, the PHJV Prairie Parklands encompasses 158.4 million acres (64.1 million hectares) of prairie and aspen parklands in Alberta, Saskatchewan, Manitoba and the Peace Parkland Region of British Columbia. The WBF, which covers parts of British Columbia, Alberta, Saskatchewan, Manitoba, Yukon and Northwest Territories, has been acknowledged under NAWMP as second only to the Prairie Pothole Region as an important waterfowl breeding area.

The PHJV contains a range of wetland types from small potholes to marshes and bog systems. Together, the Prairie Parklands 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. Linkages among habitats and species are highlighted in the Prairie Parklands and WBF Implementation Plans.

Across the continent, partners in all Joint Ventures have been faced with adapting programs during the pandemic. PHJV partners have been highly successful in meeting the challenge of balancing the top priority of public safety with continuing to build the long-term resiliency of this highly productive landscape. Some examples are highlighted below.

Prairie Parklands

Manitoba: Building resiliency into the system

Ensuring long-term funding for wetland conservation is important to maintaining resilient waterfowl populations across North America. Manitoba took this long-term approach when setting up trust funds with annual revenues dedicated to the



A Manitoba wetland.

Manitoba Habitat Heritage Corporation

conservation, enhancement and restoration of wetlands and other habitats across the province. The newest, the Wetlands GROW (Growing Outcomes in Watersheds) Trust, was established by the Manitoba government in early 2020. These funds are dedicated to conserving highly threatened small wetlands on privately owned lands.

“Working with the Province of Manitoba and The Winnipeg Foundation, the Manitoba Habitat Heritage Corporation (MHHC) is pleased to be providing its conservation delivery partners, like Ducks Unlimited Canada (DUC), Nature Conservancy Canada (NCC), Delta Waterfowl and others, access to perpetual conservation funding of about \$10 million annually,” said Tim Sopuck, MHHC Chief Executive Officer.

With CA\$204 million invested cumulatively in Wetlands GROW and other trusts, significant annual revenues are granted to organizations in Manitoba. While not all grants funded by the trusts focus specifically on wetland conservation, PHJV partners have taken advantage of the annual grants offered to increase funding for wetland conservation, enhancement and restoration.



Winter at Boggy Creek Wetlands, Manitoba.

Nature Conservancy of Canada

Boggy Creek Wetlands Project benefits both species and people

NCC’s Boggy Creek Wetland Project is adjacent to Duck Mountain Provincial Park and buffers existing secured areas to provide migration resilience for species, plus it contributes to an extensive trail system for people seeking refuge from a changing world.

With Environment and Climate Change Canada and other partners, NCC has secured 462 acres (187 hectares)—122 acres (49 ha) of wetlands, 338 acres (137 ha) of mixed-wood forest and 2 acres (0.8 ha) of grassland—protected in an area that borders 960 acres (388 ha) of Crown land and forms a block of managed land that includes other Crown quarters for a total area of approximately 9,600 acres (3,885 ha).

With these new funds come new opportunities to partner with local watershed districts, which focus on supporting healthy watersheds within Manitoba; healthy watersheds mean productive wildlife and waterfowl habitat. Manitoban PHJV partners have also been partnering with watershed districts to apply for funding from the trusts.

“Partnerships are an important part in the delivery and improvement of conservation initiatives,” noted Mark Francis, Manager of Provincial Operations for DUC, Manitoba. “Through the GROW Trust program, we were able to create new partnerships with local watershed districts, leveraging funds for incentivized programming that targets private landowners interested in retaining at-risk prairie pothole habitats.”

“The Wetlands GROW Trust helps local communities achieve their vision of climate change–adapted, wetland and wildlife–rich working landscapes. This is good for waterfowl and biodiversity, good for people and good for the economy!” said Cary Hamel, Director of Conservation, NCC (Manitoba Region).

Just as an ecosystem is strongest when it has many resources and high biodiversity, long-term, reliable funding and strong partnerships with local communities build resiliency into the support base for wetland habitat.

Saskatchewan: Long-lasting relationship leads to enhanced habitat conservation opportunities

In a dynamic landscape and changing world, strong partnerships demonstrate a resilience that results in continued and growing conservation success. DUC’s partnership with Saskatchewan Ministry of Environment (MOE) continues to help both parties work toward critical conservation goals, all through the Fish and Wildlife Development Fund (FWDF).

Since 1970, a portion of the revenue from Saskatchewan fur, angling and hunting licence sales has been redirected to the FWDF, resulting in a successful mechanism for continual investment in fish and wildlife habitat in the province. Since 2010, these funds have been eligible as a match for funds from the *North American Wetlands Conservation Act*, thus leveraging the conservation impact on waterfowl and other wildlife.

Under this fund, DUC, NCC and the Saskatchewan Wildlife Federation (SWF) entered into individual agreements with MOE; over the years these agreements have translated into millions in funding and have protected and secured nearly 600,000 acres (242,800 hectares) of habitat for waterfowl, big game and other wildlife species.

In 2015, this partnership was enhanced, and with signing of the Saskatchewan Conservation Land Management Trust Agreement, DUC, NCC and SWF were each granted a leadership role in the active management of FWDF lands across Saskatchewan.

With these new funds
come new opportunities
to partner with local
watershed districts.



Cattle grazing near Hafford Wetland, Saskatchewan.
Ducks Unlimited Canada

Blue-winged Teal.
Ducks Unlimited Canada



As trusted partners, these members of the conservation community have brought strong capacity to the agreement. Habitat management and landowner relations experience, as well as proven tools such as wildlife-friendly fencing, weed management expertise, and haying and grazing strategies, collectively support conservation goals of all parties involved.

For DUC, the FWDF Land Management Trust agreement was a huge win, enabling the further influence of upland and wetland areas used by waterfowl. “This partnership is allowing the sustainable management of critical habitat and providing wildlife benefits by securing many acres of wetlands on these parcels,” explained Brian Hepworth, Manager of Provincial Operations for DUC, Saskatchewan.

The new conservation and land management agreements with MOE through the FWDF demonstrate how multiple partners effectively work toward shared conservation goals in Saskatchewan. Through this structure, conservation groups have been awarded responsibility for habitat securement and management. In turn, MOE benefits from land management capacity and expertise, and from support of its climate change, habitat and game management strategies and its Representative Areas Network targets to conserve representative and unique examples of Saskatchewan’s varied and diverse landscapes.

Alberta: Alberta Wetland Policy contributes to long-term wetland restoration

Landscape resiliency through wetland restoration remains a priority for the PHJV. The Alberta Wetland Policy has created a mechanism to pay landowners for the ecosystem services (such as wildlife habitat, flood and drought management, water quality improvement and biodiversity) provided by their restored wetlands. The Alberta Wetland Policy has enabled several wetland restoration projects, such as the Feldberg’s property in Wetaskiwin County. Ryan Pocza, a Conservation Program Specialist with DUC, has been actively targeting drained wetlands in Wetaskiwin County that could

be restored. Restoring such wetlands enhances the habitat base that DUC has already protected in the area through conservation easements, purchases and restoration projects.

For Leroy and Mary Feldberg, their wetland restoration project provides better control of spring flooding on their land, continued use of the land for grazing, increased wildlife habitat and financial compensation. “If Ryan Pocza hadn’t dropped by, my parents would have never known that this project was a possibility,” said Lisa Ayres, the Feldbergs’ daughter.

The landowner retains ownership and management of the restored area but must not remove the wetland control structure or till the land within the wetland’s boundary. “This project doesn’t change how we manage the land; we can still pasture cows there,” noted Ayres. “The only change is that we now have controlled water flow and a new area for wildlife and waterfowl. My parents are both avid birdwatchers, and Leroy is a photographer.” This land has been in the Feldberg family for generations. Leroy, who has lived on this farm all his life, told Pocza that as kids they used to canoe in the slough and watch the cranes, ducks and geese. “All in all, this project was a very positive experience,” said Ayres.

Funding for these restoration projects is available to landowners as a result of the Wetland Policy mitigation process. This policy contributes approximately CA\$4 million a year to landowners through compensation payments in DUC’s restoration project—a win-win for the environment, society and landowners.

Western Boreal Forest

Conserving 54 million acres of Manitoba's boreal wetlands

Avoid. Minimize. Offset. These guiding principles of the Government of Manitoba's new Boreal Wetlands Conservation Codes of Practice will help conserve more than 54 million acres (22 million hectares) of boreal wetlands—an area that represents more than one-third of the province.

The codes of practice apply to all industry sectors that operate in Manitoba's boreal zone. Taking a truly collaborative approach, representatives from all industry sectors were engaged as part of a stakeholder committee that worked with the provincial government to create the codes of practice. DUC is proud to have been part of this committee, providing science-based conservation advice.

The codes of practice provide industry groups with clear direction on where and how to operate around boreal wetlands. The approach is simple but effective: avoid boreal wetlands where possible, minimize impacts to boreal wetlands where avoidance is not possible and offset permanent impacts to boreal wetlands when minimization is not possible.

“This is an important step in balancing economic progress and environmental stewardship in the province,” said Scott Stephens, DUC's Director of Regional Operations—Prairie and Boreal Regions. “The codes of practice conserve important boreal wetlands while still allowing for sustainable development of natural resources. Their establishment signals Manitoba's leadership in boreal wetland conservation, which we hope will inspire similar policy commitments in other provinces and territories.”

Given their incredible environmental value, conserving boreal wetlands is critical. Boreal wetlands in the province provide critical habitat for a variety of wildlife including more than 1.6 million breeding waterfowl annually as well as at-risk species like the Boreal Woodland Caribou.

For more information, contact Deanna Dixon, Prairie Habitat Joint Venture Coordinator, deanna.dixon@ec.gc.ca.



A flooded creek in the western boreal forest of Manitoba.
Ducks Unlimited Canada

Prairie Habitat Joint Venture – Prairie Parklands Contributions (CAD)

	2020-2021	Total (1986-2021)
Total	61,155,812	1,457,199,197

Accomplishments (Acres)

	2020-2021	Total (1986-2021)
Secured	74,131	8,370,804
Enhanced	366,290	2,810,855
Influenced	793,039	7,682,522

Secured and enhanced acres are not additive.

2020-2021 consists of the April 1, 2020 to March 31, 2021 time frame.

1986-2021 consists of the January 1, 1986 to March 31, 2021 time frame.

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

	2020-2021	Total (1986-2021)
Total	4,375,323	160,022,094

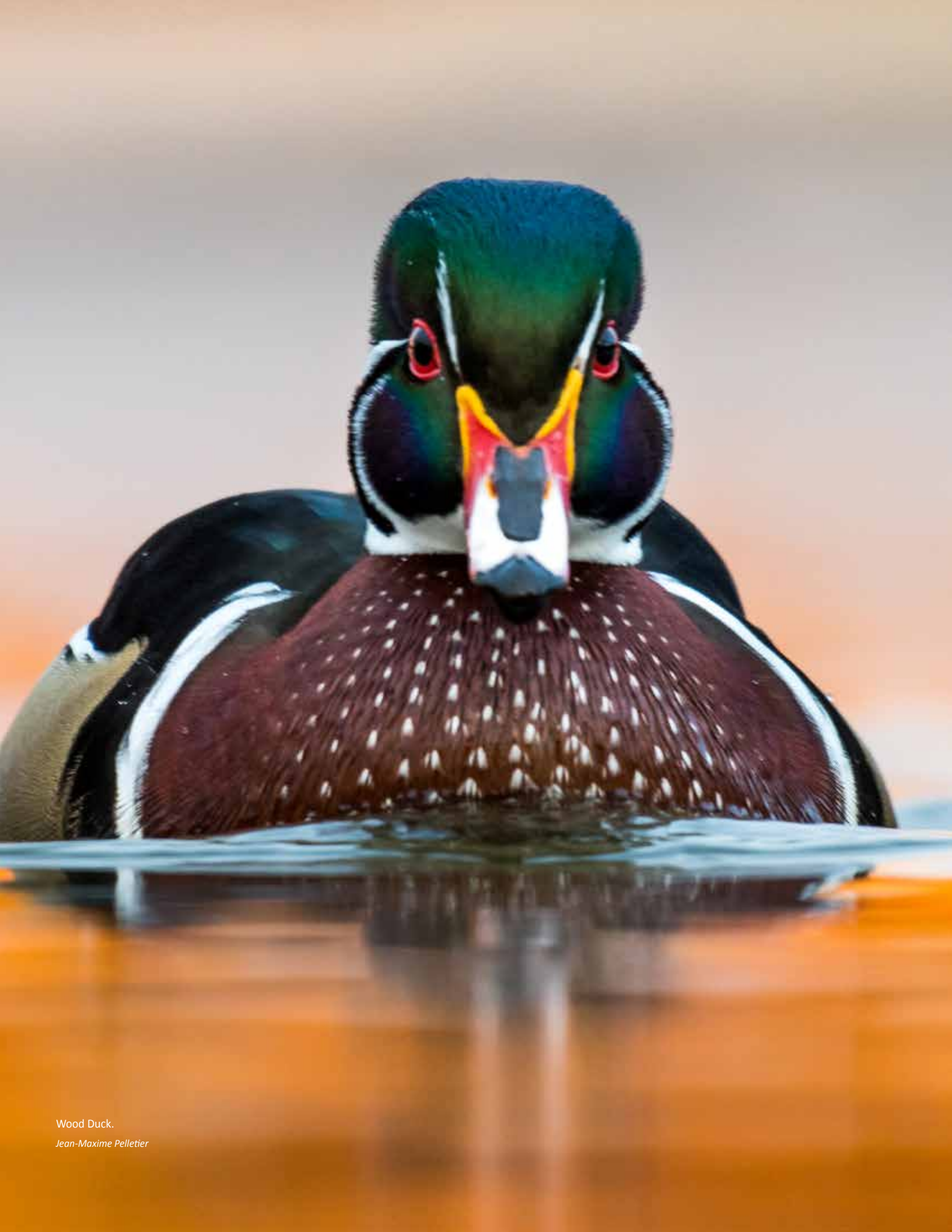
Accomplishments (Acres)

	2020-2021	Total (1986-2021)
Secured		12,091,184
Enhanced		107
Influenced	3,809,746	88,130,483

Secured and enhanced acres are not additive.

2020-2021 consists of the April 1, 2020 to March 31, 2021 time frame.

1986-2021 consists of the January 1, 1986 to March 31, 2021 time frame.



Wood Duck.

Jean-Maxime Pelletier



Species Joint Ventures

American Black Duck.
Jean-Maxime Pelletier

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

Biologists disentangle Atlantic Brant captured by rocket netting in coastal New Jersey.

Ted Nichols, New Jersey Division of Fish and Wildlife



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

The Arctic Goose Joint Venture (AGJV) covers 924 million acres (374 million hectares) spanning North America and other circumpolar countries, such as Russia. It focuses on 24 populations among seven species: Greater White-fronted, Emperor, Snow, Ross's, Brant, Cackling and Canada Geese. Arctic geese use all four flyways. Since inception of the AGJV, its scope has aligned with the NAWMP Waterfowl Habitat Areas of Geographic Concern, and the AGJV supports work in all the important arctic and subarctic areas identified for NAWMP.

With the arrival of the COVID-19 pandemic to North America early in 2020, much of the research and monitoring aimed at arctic-nesting geese in Canada ground to a halt. Entry to the arctic territories was restricted, so most arctic fieldwork was cancelled for both 2020 and 2021. Luckily, some projects on wintering areas in the United States were able to proceed after lockdowns were successful in slowing the spread of the virus, including a study of the migration ecology of Atlantic Brant.

Atlantic Brant nest in coastal habitats around the Foxe Basin, north of Hudson Bay. They migrate through and stage in James Bay, and they winter along the east coast of the United States from New England to North Carolina, with the largest proportion (about 90%) in New York and New Jersey. They are one of the smallest species of geese on the continent and have one of the smallest populations, at around 200,000 birds. Atlantic Brant are ecological specialists that are closely tied to coastal maritime habitats and particularly to eelgrass beds along the Atlantic coast and in James Bay

Dr. Mitch Weegman holds an Atlantic Brant that is wearing a satellite transmitter.

Ted Nichols, New Jersey Division of Fish and Wildlife



and Hudson Bay. They are relatively long-lived birds with highly variable productivity, often described as “boom and bust.” In most years productivity is poor (bust), but there are occasional boom years with many young birds that help to maintain the population.

To learn more about the habitats used by brant and the factors that may influence their annual reproductive success, researchers from the United States and Canada are studying habitat use and migration behaviour using satellite telemetry. Despite the ongoing pandemic, biologists in New York and New Jersey were able to continue their efforts to capture brant during the winter months using rocket nets. The brant are marked with small transmitters (about 0.8 ounces or 23 grams) that attach to the back of a bird using a lightweight harness. The units collect very accurate location information from satellites throughout the year. Brant usually leave the east coast of the United States around mid-May and arrive in James Bay a couple of days later. Here they stage for about three weeks before they depart for higher arctic nesting areas in mid-June, completing a 1,860-mile (3,000-km) trip from the east coast to the Foxe Basin. Over the next three months, the birds nest and raise their young before they make their way southward again in the first half of September.

Due to the fieldwork cancellations in 2020, the Canadian Wildlife Service was able to redirect funds to this project to buy enough transmitters to last for the next two years. This study of migration in Atlantic Brant will help us to better

understand potential risks to the population, and also to identify critical habitats along their path that may require protection. A short video provides an illustrated view of the annual cycle of brant using data collected in this study in 2020: www.youtube.com/watch?v=GWfQsMm32ol&feature=youtu.be.

For more information, contact Deanna Dixon, Arctic Goose Joint Venture Coordinator, deanna.dixon@ec.gc.ca.

Arctic Goose Joint Venture Expenditures (CAD)

	2020-2021	Total (1986-2021)
Banding	61,882	18,609,627
Research	414,034	23,952,387
Surveys	20,573	11,494,394
Collar Observations		1,324,185
Management		272,992
Conservation Planning	49,320	804,488
Communication and Education		51,882
Total	\$545,809	\$56,509,955

2020-2021 consists of the April 1, 2020 to March 31, 2021 time frame.

1986-2021 consists of the January 1, 1986 to March 31, 2021 time frame.

Black Duck Joint Venture

Conducting the Waterfowl Breeding
Population Survey.

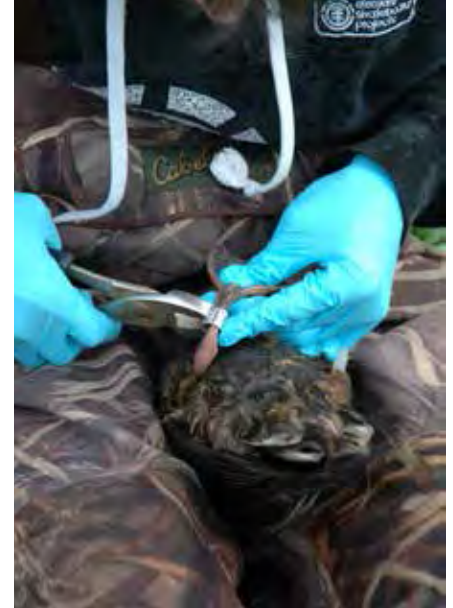
Christine Lepage, Canadian Wildlife Service



The Black Duck Joint Venture (BDJV) includes the provinces of 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 estuarine marshes, swamps, shallow lakes and wetlands throughout the boreal landscape. Black ducks are mostly found in the Mississippi and Atlantic Flyways.

The American Black Duck is culturally, economically and ecologically important in eastern North America. In 2012, Canada and the United States implemented a formal International Black Duck Harvest Strategy to ensure the long-term sustainability of black ducks and allow equitable harvest in both countries. With this strategy in place, combined data from three key monitoring programs—banding, breeding population and harvest surveys—were used to create an integrated population model to directly inform the duck hunting regulations in each country. By integrating the number of observed breeding adults in a given year (from the Waterfowl Breeding Population [BPOP] Survey) with known productivity and survival rates of adults and juveniles (from banding data) and harvest information (from hunter activity logs and submitted wings), the model can predict continental population size with a greater level of certainty than by analyzing each data set separately.

These integrated annual population estimates greatly improve our understanding of black duck population dynamics and provide results to populate a decision matrix, which is a table of management options including the preferred regulatory alternative. Associated with each alternative is a specific combination of daily bag limit and season length that will best achieve the harvest strategy's objectives in each country. This process simplifies decisions and reduces disagreement about the continental black duck population trend and identifies the best harvest packages to be implemented.



Pre-season banding of an American Black Duck.
Bruce Pollard, Canadian Wildlife Service

A wing bee at the Canadian Wildlife Service in Sackville, New Brunswick.

Tiffany Bradbury

How does the integrated population model work in the absence of key monitoring data, as happened in 2020 due to COVID-19 restrictions? Fortunately, the pandemic did not prevent all fieldwork. Of the key monitoring programs, the annual BPOP survey was cancelled but harvest surveys and pre-season banding were conducted in most areas. These data, along with the almost 30 years of historical BPOP data, were used in the model and allowed it to predict the size of the 2020 breeding population, although with greater uncertainty compared with using actual BPOP survey count data. The advantage of an integrated population model is being able to use variability in historical data to fill a data gap or predict the future. The predicted population size for 2020 allowed Canadian and American managers to decide on optimal regulation packages for duck hunting with some level of confidence. The resulting decision matrix for 2020 indicated no change to the black duck hunting regulations in either country.

The situation for 2021 is less clear. Using the 2020 predicted breeding population to make a prediction for 2021 will increase uncertainty, which is concerning for a carefully managed species such as the black duck. Therefore, federal agencies are prioritizing data collection from key monitoring programs in 2021 to reduce model uncertainty and generate a sound decision matrix. Fortunately, past experience suggests that the current black duck abundance coupled with contemporary estimates of continental harvest are unlikely to result in a precipitous decline in the population, even if harvest managers are forced to miss a second year of breeding population survey data.

Although integrated population models are complex and require data-rich monitoring programs, their benefit for filling in known and unexpected data gaps greatly outweighs these costs, as was evident in 2020. The model's inherent limitation on available data, however, highlights the need to maintain long-term monitoring programs and resume the BPOP survey as soon as conditions warrant. Without regular updates from the BPOP survey, the uncertainty in the population estimate will eventually become too large to effectively inform management decisions.

For more information, contact Tania Morais, Black Duck Joint Venture Coordinator, (506) 224-0279, tania.morais@ec.gc.ca.

Black Duck Joint Venture Expenditures (CAD)

	2020-2021	Total (1986-2021)
Banding	161,867	9,171,066
Research		1,814,604
Surveys		9,522,560
Conservation Planning	8,040	413,027
Communication and Education	37,828	80,428
Total	\$207,735	\$21,001,685

2020-2021 consists of the April 1, 2020 to March 31, 2021 time frame.

1986-2021 consists of the January 1, 1986 to March 31, 2021 time frame.



Sea Duck Joint Venture

Female American Common Eider with a transmitter.
Francis St-Pierre



www.seaduckjv.org

The Sea Duck Joint Venture (SDJV) encompasses all of Canada and the United States and focuses on coastal waters for migrating and wintering ducks and on boreal forest and tundra for nesting ducks. The Joint Venture 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.

Due to the COVID-19 pandemic, most migratory bird surveys conducted by the Canadian Wildlife Service and the U.S. Fish and Wildlife Service were cancelled in spring 2020, including the continental Breeding Waterfowl Population and Habitat Survey and the Eastern Waterfowl Survey. This presented a unique opportunity in eastern Canada to initiate a project looking at the distribution of American Common Eider populations using funds left over from the cancellation of these major monitoring programs.

Marine habitat conditions in eastern North America are changing rapidly. Waters are heating up in the Bay of Fundy and Gulf of Maine, invasive species (e.g., European Green Crab) are moving northward, mussel beds are declining and some are even disappearing, and birds are being attracted by the expansion of nearshore aquaculture. American Common Eider populations in eastern North America are shifting, too. There have been significant declines in birds breeding in Maine, New Brunswick and Nova Scotia, while breeding colonies appear to be stable at the St. Lawrence River in Quebec and to be growing in coastal areas of southern Labrador and Newfoundland. Is this a population change, or are American Common Eider changing their behaviour, abandoning historical breeding sites to move to new sites farther north?

To investigate this shift, a new project began in spring 2021 to deploy satellite tags on adult female common eiders soon after their arrival at breeding sites. The goal is for partners in Maine and Quebec to deploy approximately half of the transmitters by May 2021. The tags will track the birds' habitat use for 2–3 years. The project's primary goal is to measure two aspects of common eider ecology: first, the body condition of non-breeding and pre-breeding adult females across their breeding range, and second, the annual patterns of habitat use, including identifying key habitat sites and migratory connections among them.

This project is a unique opportunity to investigate how changes in ocean conditions due to climate change may impact food availability and population distribution shifts for American Common Eider populations, as well as differences in female breeding success and survival. While the birds are under veterinary care, there will also be opportunities to collect additional data and biological samples for future studies that are assessing breeding status, body mass and condition, age, genetics and contaminant loads.

The SDJV has a history of excellence in managing large-scale telemetry projects and producing information that significantly advances sea duck science at the continental level. This transboundary project with multiple partners at government agencies and universities will greatly increase understanding of the distribution of American Common Eider populations and their habitats.



Releasing a tagged bird in Quebec.

Francis St-Pierre

For more information, contact Margaret Campbell, Sea Duck Joint Venture Coordinator, (867) 334-5379, margaret.campbell@ec.gc.ca.

Sea Duck Joint Venture Expenditures (CAD)

	2020-2021	Total (1998-2021)
Banding		695,345
Research	525,160	12,199,811
Surveys		3,630,006
Conservation Planning		1,040,515
Communication and Education	224	102,968
Total	\$525,384	\$17,668,645

2020-2021 consists of the April 1, 2020 to March 31, 2021 time frame.

1998-2021 consists of the January 1, 1998 to March 31, 2021 time frame.



Setting up mist nets over water to capture American Common Eider in Quebec.

Francis St-Pierre

Partners

Kenauk Nature Reserve, Quebec.

Juliana Balluffi-Fry

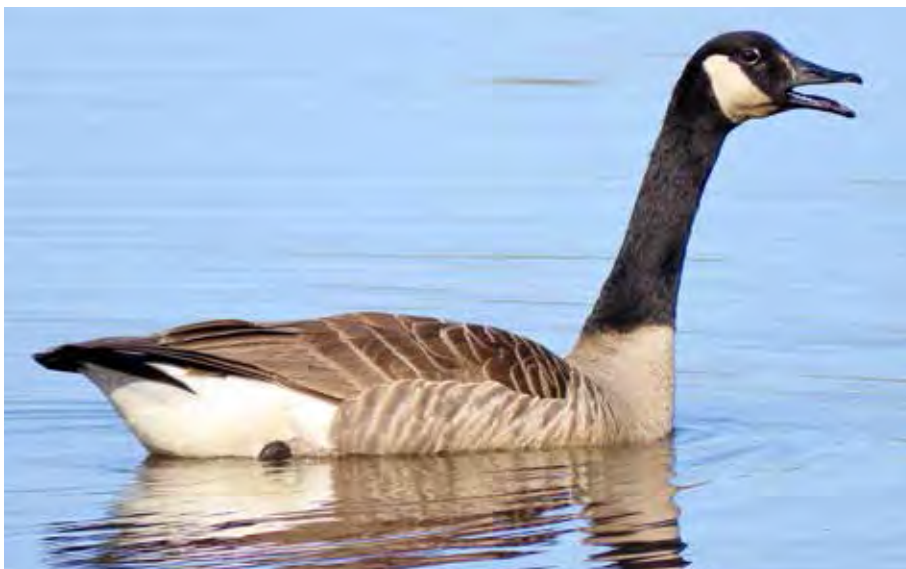
Thank you to all our partners who contributed financially in 2020–2021:

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Canada Goose.

Jaden Barney

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Other Agencies

Chinese Academy of Sciences

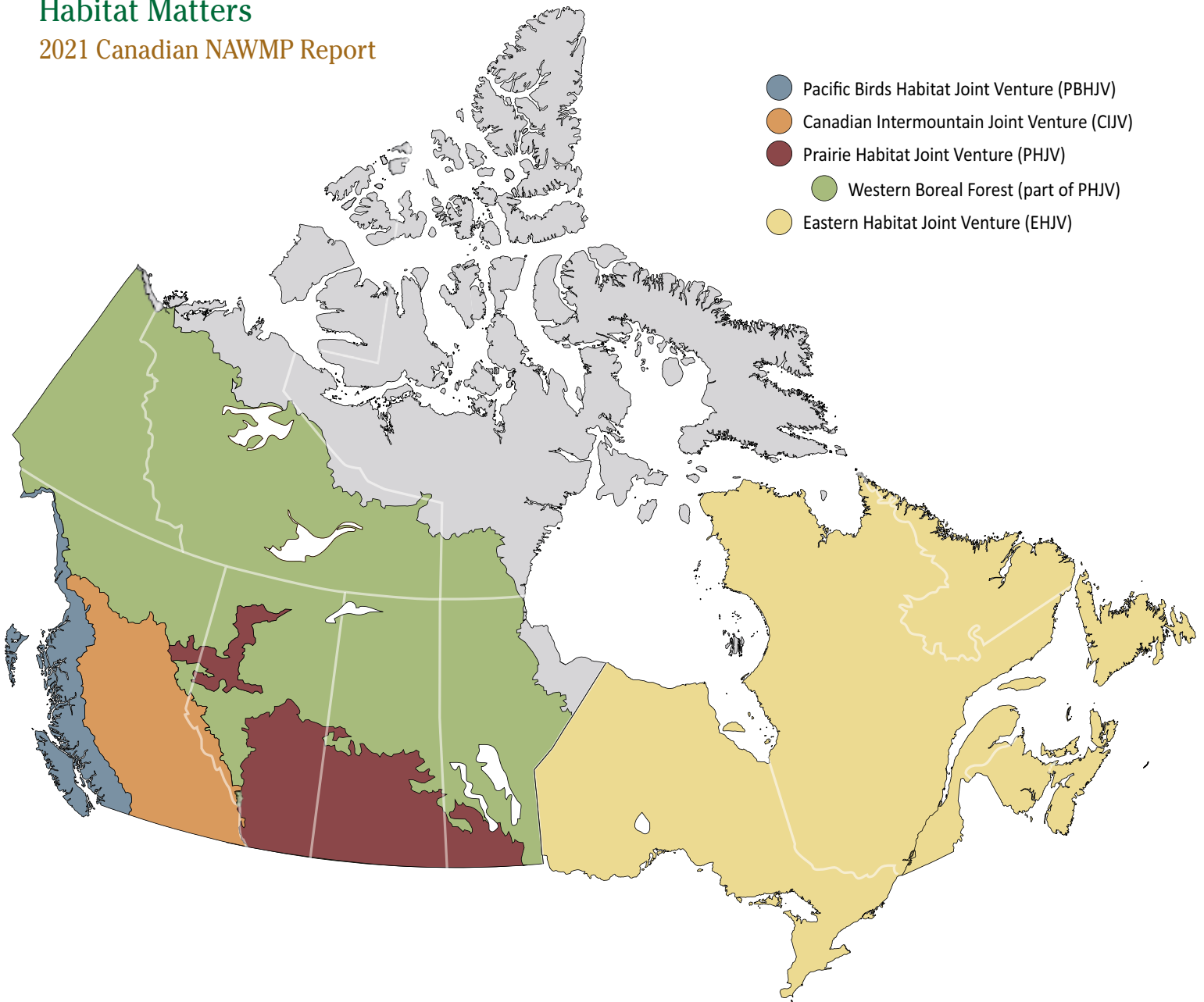
Common Merganser.

Ben Aubrey



Habitat Matters

2021 Canadian NAWMP Report



Contacts

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North American Bird Conservation Initiative

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Map of Bird Conservation Regions

nabci-us.org/resources/bird-conservation-regions/