



# Ducks Unlimited Canada: **Our approach to biodiversity**

*When we work together to protect nature, good things happen.  
Our water becomes cleaner. Wildlife populations grow stronger.  
We become healthier and our communities prosper.*

In response to the world's growing biodiversity crisis, Ducks Unlimited Canada (DUC) and our conservation partners are bringing life back to threatened ecosystems through habitat protection and restoration. We believe the battle for biodiversity can be won when citizens worldwide understand the value of nature. Solutions to halt and reverse the alarming trend of species loss are in sight, and we're hard at work delivering them.

**We are focused on the future; this is our approach to safeguarding biodiversity.**



# Why is biodiversity important?

Biodiversity is what makes our ecosystems productive and healthy. While we often think of animals and plants first, fungi and micro-organisms like bacteria are also an important part of the food web. Together, they create balanced ecosystems that sustain life.

Biodiversity loss threatens the health of our air and soil, the cleanliness of our water, our food sources, access to medicine and resilience to extreme weather events. Biodiversity is critical to the health and productivity of our environment and, in turn, human health. Unfortunately, some of the most biodiverse ecosystems are the ones at greatest risk:

**Wetlands** – Critical habitats to approximately 40 per cent of the world's species, Canada is home to around one quarter of the world's remaining wetlands. Unfortunately, it is estimated that Canada continues to lose 80 acres of wetland per day in developed areas.

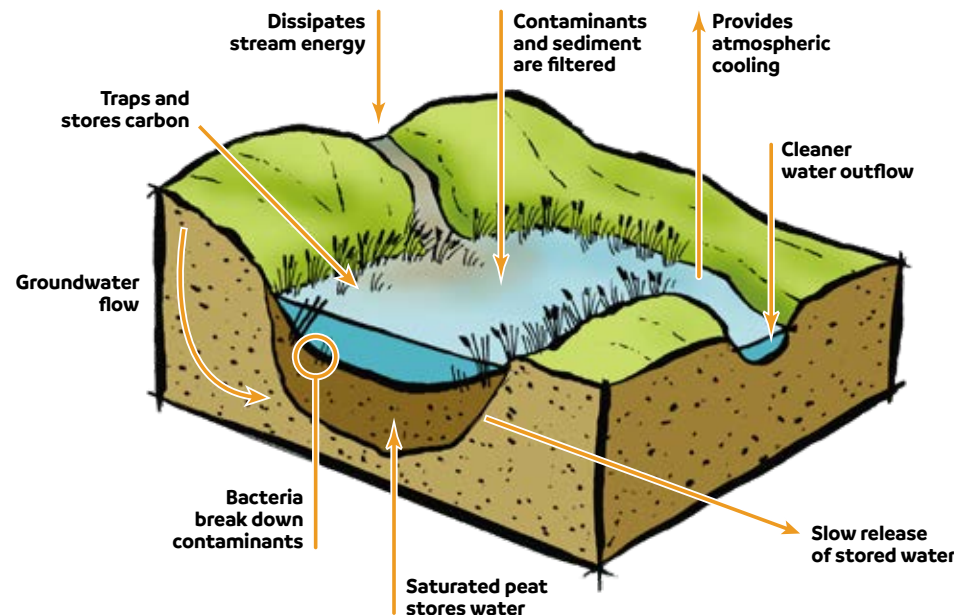
**Grasslands** – Temperate grasslands, including those in Prairie Canada, are the world's most endangered ecosystem. In Canada, more than 70 per cent of native grasslands have been converted. The loss of grassland habitat has resulted in the endangerment of many species. Today, more than 60 Canadian species at risk depend on valuable — and vanishing — grassland habitat.



## How a wetland works: Ecological functions that promote biodiversity



Provides critical wildlife habitat



# What are the greatest threats to biodiversity?

*Our growing population and excess consumption have put increasing demands on natural resources and altered our landscapes. A variety of primarily human-driven causes are impacting biodiversity.*



## Habitat loss and degradation

When areas that contain wildlife habitat are destroyed, they no longer provide the food, water and shelter species need to survive.



## Climate change

As temperatures rise and extreme weather events become more frequent and severe, many species cannot adapt and their populations plummet.



## Pollution

Contaminants that enter our air, soil and water can pose serious problems for ecosystems and the species that inhabit them.



## Invasive species

Invasive species often have no native predators, allowing them to out-compete native plants and animals. This loss of biodiversity can reduce the resiliency of native ecosystems and disrupt food webs.



## Species over-exploitation

The overuse of wild plants and animals by people depletes populations, taking more from nature than it can provide.





# What are the solutions?



## Threats to biodiversity

Habitat loss and degradation

Pollution

Climate change

Species over-exploitation

Invasive species



## Our approach

This complex issue requires a multi-faceted approach of research, technology, education, advocacy, industry partnerships and landscape-scale conservation to address the greatest threats to biodiversity.



## Our solutions

**Landscape-level conservation:** Delivering targeted programs to improve biodiversity and ecosystem resilience

**Research, technology and innovation:** Advancing and sharing knowledge to support data-driven decisions

**Partnerships and collaboration:** Working with landowners, governments, industry, Indigenous Peoples and other conservation-minded groups to achieve shared goals and positive outcomes

**Education, advocacy and community engagement:** Empowering people to influence positive change



# Ducks Unlimited Canada's approach to solving the biodiversity crisis

*DUC is delivering solutions that work for nature and people. Our progress is taking place:*



**In the lab:** Our science is uncovering the unique relationships between nature, wildlife, watershed health, biodiversity and more.



**On the ground:** Our conservation activities are making space for nature in working landscapes and urban centres.



**In the classroom:** Our education programs are preparing the next generation to tackle the conservation challenges of the future.



**Alongside industry:** Our team of experts is helping a wide variety of sectors address their environmental risks and opportunities.



**In the hallways of government:** Our advocacy efforts are helping inform policies and decisions that advance sustainability and achieve the best outcomes for people and wildlife.



**Via new technology:** Our leading-edge tools are helping us take conservation to new heights, allowing us to be innovative and creative in how we deliver solutions.



# Our solution: Landscape-level conservation

Our approach is continental. Nature doesn't know borders when it comes to conservation, and neither do we. Ducks Unlimited organizations in North America have banded together to conserve 15 million acres of wetlands and associated habitats that are critical for hundreds of species that criss-cross international land, water and airspace. In Canada, DUC is creating large, landscape-level impacts that support species at risk and contribute to healthy ecosystems.

**12,329**

HABITAT PROJECTS

**6.2 million**

ACRES CONSERVED  
(INCLUDING 3.1 MILLION  
ACRES RESTORED)

**228.1 million**

ACRES INFLUENCED

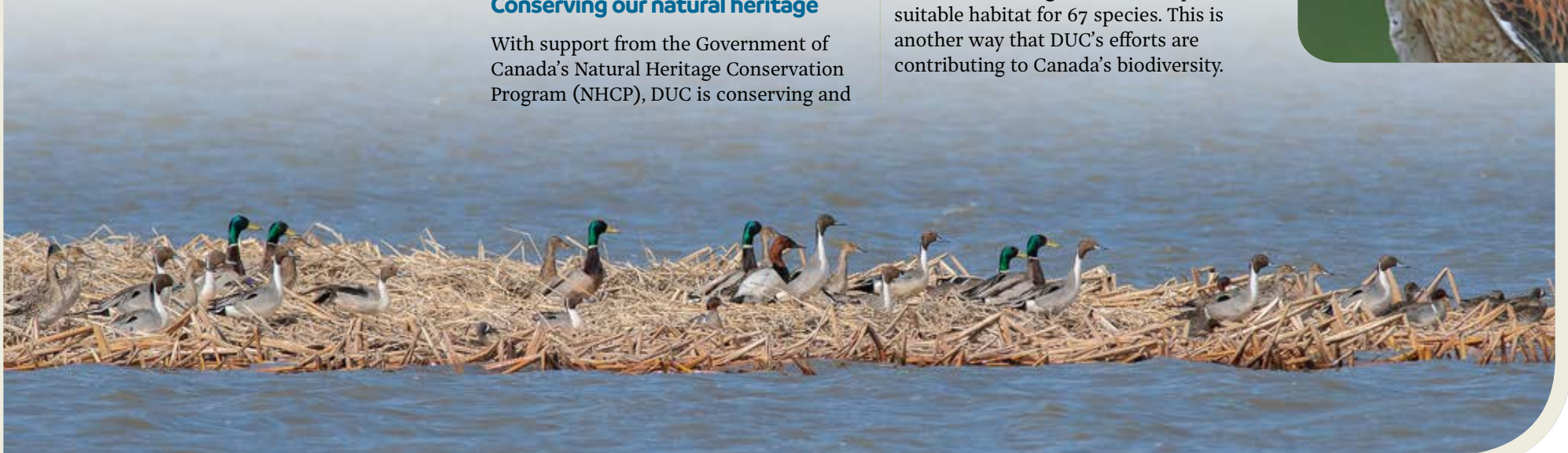
## Targeted conservation efforts work

The 2022 *State of the Birds* report released by BirdLife International shows that while 49 per cent of bird species are in decline globally, North American waterfowl populations are generally improving. This is largely attributed to the focused conservation efforts and the continental approach that Ducks Unlimited in Canada, the U.S. and Mexico have taken to protect critical habitat along the migration flyways in partnership with governments and like-minded organizations.

## Conserving our natural heritage

With support from the Government of Canada's Natural Heritage Conservation Program (NHCP), DUC is conserving and

restoring critical wetland and grassland habitat for iconic prairie birds like the Sprague's pipit (*right*), chestnut-collared longspur, ferruginous hawk (*below right*) and northern pintail. These are part of a long list of species that have experienced population declines due, in part, to habitat loss. By applying a diversity of conservation tools, DUC has conserved 36,114 acres (14,615 hectares) of land to date through 127 projects across six provinces. The native grasslands that DUC protected through the NHCP are expected to provide habitat for 80 documented species of bees; restored grasslands will provide suitable habitat for 67 species. This is another way that DUC's efforts are contributing to Canada's biodiversity.



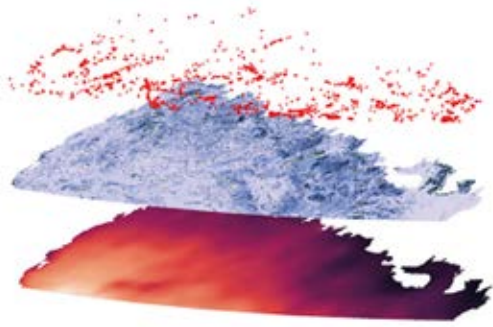


## Our solution: Research, technology and innovation

Protecting our dwindling natural habitats for wildlife while maintaining economic benefits and social values is a delicate balance. DUC's science-based approach to conservation is led by an in-house team of world-class researchers whose findings help inform industry operating guidelines and provide resources and education to support responsible and sustainable practices. Additionally, DUC partners on protected wildlife areas and participates in waterfowl and wildlife population monitoring and surveillance projects. We're working with our partners to protect the biodiversity of aquatic ecosystems from invasive species and leverage the latest technologies in our on-the-ground efforts. We're gathering data and knowledge that's shaping how we make conservation decisions now and into the future. **Bottom line: DUC is on the job.**







### Mapping biodiversity

Research shows that habitat loss and landscape changes can affect biodiversity — everything from ducks to dragonflies to entire ecosystems. But to what degree? How many species might disappear if half the native vegetation is removed? How many more species could a quarter-section of agricultural land support if a wetland is restored there? DUC scientists are building an innovative biodiversity mapping tool for Canada's Prairies to answer these questions, taking some of the guesswork out of the impact of habitat conservation and restoration. The tool's goal is to help landowners and agricultural producers better understand how land management activities that include conservation or restoration of natural features can contribute to supporting biodiversity.

### Shining a spotlight on sea ducks

Populations of several sea duck species like the common eider (*below*) are in decline, and four populations of sea ducks are currently federally listed as threatened or endangered in the U.S. or Canada. The 15 species of waterfowl known as sea ducks constitute more than a third of the duck species breeding in North America, yet they are the most poorly understood group of waterfowl. In collaboration with project partners from the U.S. and Canada, DUC played a lead role in the creation of a Sea Duck Key Habitat Sites Atlas to help fill information gaps for these birds. Using a variety of methods and sources like aerial surveys and digital maps, this atlas identifies and provides information on 85 of the most important areas for sea ducks at a continental scale. This information will be useful for conservation planning, avoiding environmental impacts and evaluating environmental assessments.



### Using drones to restore wetlands

Unmanned Aerial Vehicles, commonly known as drones, are transforming how DUC identifies and restores critical wetland habitats for threatened and endangered species, flood attenuation and carbon sequestration. In Ontario, we're harnessing the power of technology and partnerships by monitoring invasive species in wetlands using microdrones. In Saskatchewan, trained DUC staff use drones, outfitted with high resolution cameras, Lidar sensors and other technology that collect detailed, high-resolution images and video to produce 3-D terrain models of a landscape. It's a time saver for the team, enabling them to fly over a property, identify restorable wetlands and design the restoration from a highly accurate data source. It provides a level of scrutiny and rigour that no other organization can provide.

### Defending against invasive species

DUC participates on the national and several provincial Invasive Species Councils, sharing knowledge and informing policy. We've deployed our operational experience to collaborate on management of invasive phragmites, invasive cattail, European water chestnut, purple loosestrife, invasive spartina and common carp. In Ontario since 2019, DUC has supported innovative research on biological control of invasive phragmites (*below*) using noctuid moth species, in partnership with Agriculture Agri-Food Canada and the University of Toronto. This includes providing access to our project sites and support where needed to continue the research.





# Our solution: Partnerships and collaboration

Nature-based solutions use the power of natural ecosystems like wetlands to help mitigate floods, droughts and other effects of climate change. They also provide important, safe spaces for wildlife. From sequestering and trapping carbon to regulating water quality and quantity, we need wetlands now more than ever. DUC is recognized as a conservation solutions provider driven by partnerships and focused on results.

We believe in protecting the things that matter to us by collaborating with a range of partners and using a variety of approaches:

**Indigenous-led conservation:** Studies show that biodiversity is highest on Indigenous-managed lands.\* As stewards of Canada's lands and waters for millennia, Indigenous Peoples have many lessons to share when it comes to protecting nature. DUC is building meaningful relationships with Indigenous Peoples that are grounded in mutual respect and a desire to achieve significant and lasting conservation outcomes. We are proud to support Indigenous Guardians programs and the development of Indigenous Protected and Conserved Areas.

**Sustainable agriculture:** Farmers and ranchers require a balance of resources — including water, grass and soil — to be successful. DUC's wide range of conservation programs provide these families with incentives, knowledge, technologies and customized solutions to farm in a manner that works with nature — not against it.

**Industry partnerships:** We're working with today's business leaders to find effective ways of minimizing their environmental impacts and incorporate nature-based solutions into their development plans to achieve their sustainability goals.

**Government:** DUC is actively helping governments deliver on programs targeted to enhance biodiversity.

\* Sources: <https://news.ubc.ca/2019/07/31/biodiversity-highest-on-indigenous-managed-lands>



## Boosting Canada's climate resilience

DUC is the conservation delivery agent of a new action-oriented climate resilience initiative called Nature Force. Made up of 16 leading insurance companies, Nature Force funds natural infrastructure projects in areas surrounding urban centres to help mitigate the effects of flooding and extreme weather events.

## Helping consumers choose wisely

Through a partnership with Cereals Canada and prairie winter wheat grower associations, we have launched a new Habitat-Friendly Winter Wheat Ecolabel Program to help consumers identify environmentally friendly products that provide vital habitat for ducks, birds and other wildlife.





## **Our solution:** Education, advocacy and community engagement

The future of conservation is in good hands thanks to the thousands of students and educators who participate in our education programs. They are bringing new ideas, energy and perspectives to how we approach today's conservation challenges. We're proud to be invited to the table with federal, provincial and municipal officials from every political stripe to share our conservation experience and help inform policies that contribute to economic prosperity and environmental sustainability. Our networks of staff, volunteers and supporters are creating positive environmental impacts within their communities that can transcend borders and ripple across North America.





## Going green

DUC is part of the Green Budget Coalition, a group of 25 leading environmental organizations, that make recommendations for the federal budget aimed at creating major progress on the related climate and biodiversity crises while improving the lives of all Canadians.



## Empowering youth through wetland education

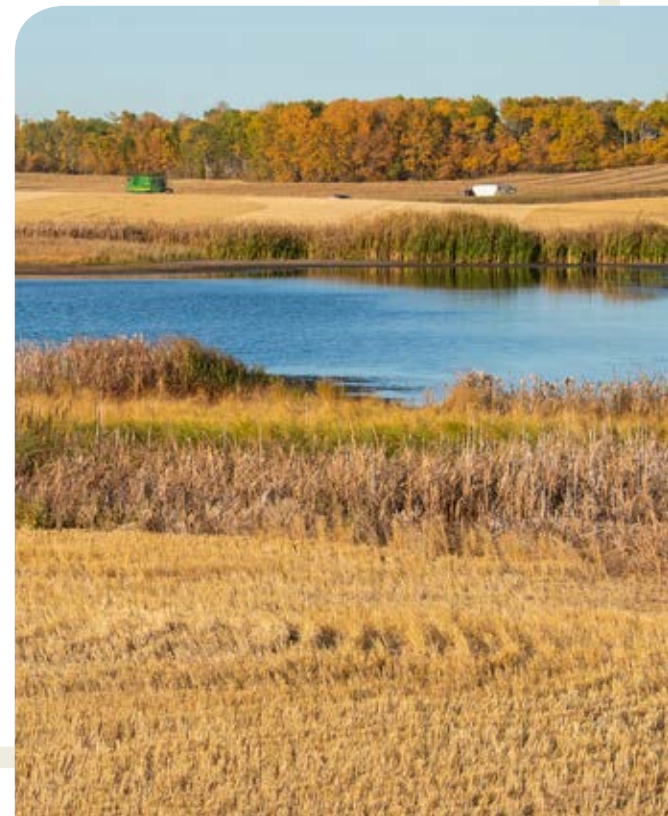
Engaging and empowering young people in meaningful nature-based experiences is the impetus behind Wetland Centres of Excellence (WCE), DUC's flagship education program. WCEs are a national network of schools and community partners where students lead wetland projects, peer-to-peer mentorship and community outreach. We now have 28 WCEs located across Canada. Many participants have taken the passion and knowledge for wetlands and the environment they gained through their WCE experience to greater heights, pursuing post-secondary education in a conservation-related field. We're proud to see the future of wetland conservation in their capable hands!

## Lending our expertise to sustain nature and support a global economy

More than half of the world's economic output is moderately or highly dependent on nature. This means that sustaining nature is no longer about just protecting the environment—it's about keeping the economy going and protecting society's well being. That's why DUC is lending its science-based conservation expertise in wetlands, grasslands and forests to support the Taskforce on Nature-related Financial Disclosures (TNFD) Forum's efforts. Extreme weather, environmental disasters, biodiversity loss, natural catastrophes and failure to mitigate climate change are real and serious risks to the world economy and the TNFD helps organizations address their environmental risks and opportunities. As an early adopter and member of the TNFD Forum, DUC is well positioned to advance this important initiative with partners.

## Advancing agriculture policy

Alongside leading agriculture industry partners, DUC has proposed an agricultural policy framework that will benefit the country ecologically while giving the sector a competitive advantage in the global marketplace. Our framework contains actions to advance four key areas: mitigating the impacts of climate change, preserving biodiversity, promoting sustainable practices, and increasing resiliency on Canada's farms and ranches.





# We are focused on the future

*Healthy ecosystems and thriving biodiversity are essential for our health, our economy and our future. Ducks Unlimited Canada is a world leader that's been conserving and restoring wetlands and other habitats for the last 84 years. We're conservation partners, researchers, educators and advocates who are protecting biodiversity with every acre we save.*

Learn more about our approach and our progress at [\*\*ducks.ca/biodiversity\*\*](https://ducks.ca/biodiversity)

