



HABITAT RESTORATION BACKGROUND



Wetlands, forests, grasslands, and meadowlands on rights of way

Photo: Ducks Unlimited

This backgrounder provides further details and rationale for specific restoration priorities as part of the Green Budget Coalition's recommended investments of \$450 million over five years in a Federal Habitat Restoration Program as outlined in [Recommendations for Recovery and Budget Actions in 2020-2021](#),¹ pages 58-59. Note that budget figures in the below recommendations are included in the GBC's overall figures for this program.

Canada loses more critical habitat than it conserves every year. We are facing staggering losses of over 75% of native grasslands and 70% of wetlands in settled regions. Habitat degradation and loss, including in aquatic ecosystems, continue to put species at risk of extirpation. Through habitat restoration, Canada has a critical opportunity to bolster our economy and meet biodiversity and climate goals through nature-based solutions. The key will be to invest in restoration initiatives that maximize both socio-economic climate and ecological returns, advancing the government's vision for transformative change toward a healthy, nature-centred and low-carbon economy.

¹ <https://greenbudget.ca/recommendations-2020-2021/>

Wetland Restoration

Research on Canada's wetlands tells us that if a drained wetland is restored and maintained, it will sequester GHG emissions similar to a level to that which existed before the wetland was drained. However, studies indicate it could take more than a decade before GHG stores are completely recharged.² With up to 70% of wetlands lost in the settled southern regions of Canada, and more than 95% in some urban and agricultural areas, we have an important opportunity to act now to restore our lost and degraded wetlands that will sequester carbon over the long-term and support Canada's 2050 GHG emissions reduction targets.

We also know that wetland restoration is critical for enabling Canada to adapt to the negative impacts of climate change by providing a buffer against severe weather impacts and protecting our built infrastructure against downstream impacts. These benefits further offset additional future remedial expenditures required to repair or rebuild existing infrastructure. Restored wetlands provide these climate mitigation and adaptation benefits while also supporting biodiversity and providing critical habitat for species at risk, among other co-benefits.

Photo: Ducks Unlimited



² Badiou, Pascal & McDougal, Rhonda & Pennock, Dan & Clark, Bob. (2011). Greenhouse gas emissions and carbon sequestration potential in restored wetlands of the Canadian prairie pothole region. *Wetlands Ecology and Management*. 19. 237-256. 10.1007/s11273-011-9214-6.



Throughout Canada's history, wetland restoration has provided net economic benefits to the Canadian economy primarily through the provision of new construction work, diverse job creation, net positive revenue impacts on the public purse, and ancillary ecosystem services and co-benefits. A recent economic study indicates that every \$1 million invested in wetland conservation in Canada generates more employment than most comparable sectors in the economies of British Columbia, Alberta, Saskatchewan, Manitoba, and Ontario. Further, for every \$1 invested in wetland conservation, restoration and wetland management efforts, society receives \$22 worth of economic, ecological and societal well-being benefits³.

Many of Canada's conservation delivery partners already have plans in place to undertake immediate and scalable wetland restoration projects and are awaiting investment and a workforce. Examples of projects include: restoring and re-naturalizing drained and altered wetlands in the Great Lake and Lake Winnipeg basins and other coastal regions; developing strategic networks of wetlands across Canada that regulate the flow and quality of water and protect communities and existing infrastructure from severe flooding; and partnering with landowners to restore freshwater mineral soil wetlands across the Canadian prairies that will yield long-term GHG mitigation outcomes and support biodiversity.

As part of a new national habitat restoration program, the GBC is recommending scaled-up investments to support the deployment of new wetland restoration-based economic stimulus activities. With non-federal government sources of funding leveraging twenty-five cents for every federal dollar invested, this result would be a minimum investment of—\$312 million dollars in the Canadian economy.

RECOMMENDED INVESTMENT:

\$250 million over five years [ECCC]

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³ Anielski, Thompson & Wilson. (2014). A Genuine Return on Investment: The Economic and Societal Well-being Value of Land Conservation in Canada. <http://www.anielski.com/wp-content/uploads/2014/07/14-03-31-DUC-A-Genuine-Return-on-Investment-Exec-Summ1.pdf>



Photo: Ryan Stone

Grassland Restoration

Canada's native grasslands are among the most endangered terrestrial ecosystems in Canada. Prairie grasslands have high concentrations of species at risk, including: Greater Sage Grouse, Burrowing Owl, Swift Fox, Black-footed Ferret, and Long-billed Curlew, among many others. Grassland birds alone have declined by 57% since 1970.⁴

Grasslands are also important globally as carbon sinks. In 2010 the United Nations Food and Agriculture Organization declared that "... globally, the potential to sequester carbon by improving grassland practices or rehabilitating degraded grasslands is substantial – of the same order as that of agricultural and forestry sequestration."⁵ Restoration of grasslands has an advantage over forests and wetlands, in that restored native grasses sequester carbon quickly and could help meet Canada's 2030 GHG emissions reduction targets. This nature-based solution to climate change has much unrealized potential in Canada.

Canada's ranching communities are especially threatened by the COVID-19 pandemic due to outbreaks in processing facilities. These rural communities are threatened by the ongoing loss of prairie grasslands. Key threats to grasslands are conversion to cropland and other development and invasive species. In Manitoba, for example, the invasive leafy spurge infests 340,000 acres of land, costing an estimated \$19 million per year in protection of grazing land and public lands.

The GBC recommends a focused federal effort to restore and conserve Canada's grasslands by supporting efforts of ranching communities to manage grasslands sustainably, optimize carbon storage through best practices, stabilize declining grassland bird populations, and conserve other grassland wildlife species. (See also, in the main [GBC Recommendations document](#), *Ecological Goods and Services Programming for Agricultural Lands*, page 69-70, and *Environmental Sustainable Agriculture*, page 82.)

4 http://nabci.net/wp-content/uploads/39-004-Canada-State-of-Birds_EN_WEB-1.pdf

5 http://www.fao.org/fileadmin/templates/agphome/documents/climate/AGPC_grassland_webversion_19.pdf



A new grasslands restoration initiative would support programs for ranchers and farmers to deliver conservation measures and services (e.g., conservation easements, Best Management Practices, grass banks) on their grasslands. Restoration funding could support, for example, reseedling of native grasses in cultivated and formerly cultivated fields, similar to the program offered by the South of the Divide Conservation Action Program (SODCAP). Funding is also needed to restore some lands in the Govenlock, Nashlyn and Battle Creek grasslands, which have now come under the authority of Environment and Climate Change Canada following a land swap with the Saskatchewan government.

Further, the GBC recommends the federal government establish a national Native Grassland Task Force, comprised of federal and provincial governments, agricultural producer groups, Indigenous communities, and non-governmental conservation groups to identify opportunities for continued partnerships and action to scale-up grassland restoration, stewardship and conservation across Canada.

RECOMMENDED INVESTMENTS:

- **\$125 million over five years** (2020-2025), matched by \$25 million per year in non-federal government sources of funding to support efforts of ranching and farming communities to manage their grasslands sustainably. [AAFC, ECCC]
- **\$20 million over five years** for programs to support farmers and ranchers in conservation of grassland birds. [AAFC]
- **\$50 million** over five years to support jointly funded programs for conservation and restoration measures on federally and provincially managed grasslands. [ECCC]
- **\$900,000 over two years** to establish a national Native Grassland Task Force. [ECCC, AAFC]

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Native Meadow Restoration on Right-of-Ways

Native pollinator species are declining globally and Canada's Rights-of-Ways (i.e., roadsides, hydro corridors, pipelines, railway lines) represent a unique opportunity for conservation and to advance nature-based solutions to climate change. Vegetation on Right-of-Ways need to be maintained in short height, which is compatible with native meadow wildflower species. Restoration of Rights-of-Way from alien invasive grasses to native meadow habitat across southern Canada, or to native grasslands in Prairie Canada, would provide habitat for thousands of pollinator species while enhancing capacity for carbon storage due to deep root systems and reducing maintenance costs for mowing and spraying herbicides.

Investing in native meadow restoration across Canada's Right-of-Ways would also generate employment by: 1) supporting tree nurseries to expand their business to also supply native seeds; and 2) creating restoration jobs along Canada's Right-of-Ways. Large-scale restoration requires development of a native plant seed supply. This will require investments to support existing tree nurseries to expand their operations. These companies already have the infrastructure and know how needed to grow seeds. To help start-up a seed supply market, youth could be employed to collect native seeds. Indigenous communities could be involved where roadways and hydro lines transect their lands or are nearby, and through support for developing native seed supply. A three-year program that restores habitat on rights-of-way and builds native seed supply across southern Canada would create 320 full time equivalent jobs.

Photo: Sharissa Johnson





Photo: Green Budget Coalition

In addition to supporting job creation, stewardship of federally-managed transportation assets (e.g. Transport Canada, Parks Canada, Correctional Services Canada, Department of National Defense) through the restoration of meadow habitat on roadways would demonstrate federal leadership and commitment to nature-based climate solutions, biodiversity conservation, and the UN Sustainable Development Goals. The creation of pollinator pathways across Canada would also strengthen Canada's leadership position at the Commission for Environmental Cooperation regarding the North American Pollinator Conservation Framework.

RECOMMENDED INVESTMENT:

\$20 million over 5 years [ECCC, TC, DND, CSC]

- \$10 million over five years to restore native meadow habitat along federally managed roadways.
- \$10 million over five years, along with matching funding from provincial governments to develop native seed supply, provide native seed and technical expertise to restore meadow habitat along rights-of-way in municipalities across Canada.

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Restoring Canada's Forests

The following text provides recommended priorities for the federal commitment to invest \$2 billion over ten years in the planting of 2 billion incremental trees, which could also be part of the Federal Habitat Restoration Program.

Restoring Southern Forests and Trees: Although Canada's southern forests provide habitat for some of our most threatened and endangered species, they remain one of our most endangered ecosystems. At the same time, we know that restoring Canada's lost and degraded southern forests provides many important benefits, including climate adaptation services, water quality and quantity benefits, and other important local values such as supporting mental health and well-being.

Restoring these ecosystems across Canada can also create quality jobs and contribute to Canada's GDP. According to the Forests Ontario 50 Million Trees Program, the GDP impact from tree planting activities in Southern Ontario is \$12.7 million annually with a 3:1 ROI. The program has also resulted in 104 full-time-equivalent jobs annually. The World Resources Institute estimates that an annual federal investment of \$4–4.5 billion in the US Tree Planting program could create more than 150,000 jobs and \$6-12 billion per year in economic activity.³

To be effective at supporting both Canada's climate and biodiversity commitments, the federal government's two billion trees investment must include restoring Canada's southern forests, with a focus on restoring threatened and endangered tree species and places where forests provide important habitat for species at risk. It should also leverage existing programs and commitments such as those identified through the priorities places, species and sectors initiatives under the Canada Nature Fund, could also be supported through an Ecosystem Goods and Services Program for Agriculture, as well as Natural Infrastructure Investments.

RECOMMENDED INVESTMENT:

\$50 million over ten years [ECCC, NRCan]



Photo: Ducks Unlimited

**Restoring Linear Disturbances in Caribou Ranges and other Important SAR**

Habitat: In many provinces, restoration of linear disturbances has been identified as a key part of a recovery strategy for boreal woodland caribou, in addition to other species such as bull and west-slope cutthroat trout. In Alberta and Saskatchewan, several caribou range plans are near completion and include a significant focus on restoring habitat fragmented by seismic lines and other linear disturbances. For example, in Alberta the Bistcho, Cold Lake, and Upper Smokey sub region range plans all include significant habitat restoration⁶, including in proposed Indigenous Protected Areas. The Government of Alberta estimates there are 150,000 km of legacy seismic lines which “in their current state, are not fully capable of natural woody vegetation re-establishment, and therefore need some treatment(s) to encourage restoration.”⁷ According to the Section 11 agreement with the Government of Canada, all the range plans should be completed in 2023. Each of them will likely call for immediate restoration activities. When done in the context of a larger caribou range plan, these restoration activities will be valuable for caribou only if they are maintained for a significant period of time and linked to reducing overall disturbance in the range. As such, these restoration activities could be part of a broader GHG mitigation strategy, especially if all companies are able to be more efficient and industrial activities don’t simply spread out into other parts of the province.

Another “shovel ready” opportunity is to restore endangered species habitat in the Castle and Livingstone-Porcupine Hills on the southeastern slopes of the Rockies—an area heavily disturbed by logging and oil and gas activities, as well as motorized vehicles. The 2018 Castle Provincial Park and Porcupine Hills Land Footprint management plans both include commitments to restore linear disturbances, but have

Photo: Jordan Grider



⁶ There are an estimated 9,476 km of seismic line in the Little Smoky caribou range, 7,883 km in the Cold Lake range, and 40,000 km in the Bistcho Range

⁷ Power Consulting Inc. Economic Impacts of Caribou Protection. October 2018.

yet to be implemented. Some initial funding was secured through a Challenge Fund “species priority places” grant to restore endangered bull and west slope cutthroat trout habitat in the region, however this is just “a drop in the bucket” relative to what is needed.

Investing in restoring seismic lines has the potential to generate hundreds of jobs in rural communities, including those that may face challenges due to changing oil prices and a reduction in demand for some types of wood products. For example, restoring the Bistcho range over 20 years assumed 100 direct planting jobs. With targeted investments, this could be scaled up and the restoration achieved over a shorter time frame. The Dene Th’a First Nation—the Indigenous partners who would be the most impacted by the opportunities resulting from the implementation of a range plan and restoration work in the Bistcho range—also foresee that with the creation of an Indigenous protected area, they could diversify economic opportunities in the region through protected area management, tourism, and wildlife monitoring jobs.

The estimated cost of seismic line recovery is between \$6,000 and \$15,000 per km, depending on accessibility, the existence of peatlands, and other factors. The GBC recommends that federal investments be leveraged by private investment or in-kind contributions from actors that have contributed to the degradation of the landscape as well as broader plans, regulations and programs in the municipality and province that will protect the restoration investment over time. One report estimated the cost of restoring the Bistcho and Yates ranges at approximately \$48 million over 20 years, assuming a cost of \$10,000 per km.

RECOMMENDED INVESTMENT:

\$100 million a year for ten years [NRCAN, ECCC]

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