CENTRAL GRASSLANDS ROADMAP
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Stemming the Loss of Grasslands in Canada

A Scan of Policy Solutions

By Birds Canada and the Central Grassland Roadmap

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Policy Solutions to Halt and Reverse the Loss of Canada's Grasslands

Why are Canada's Grasslands Important?

Grasslands are important for our climate and biodiversity, and yet, they are among the most endangered and least formally protected ecosystems on earth[1]. Grasslands store vast amounts of carbon in their massive root systems, and hold about one-third of the global terrestrial carbon stocks[2]. Ploughing – for conversion to cropland or urban developments – releases about half of the carbon stored underground, and avoiding grassland conversion is considered the largest natural climate change mitigation opportunity in Canada between now and 2030[3]. Keeping our grasslands intact is key for meeting our national carbon emission targets.

The Canadian Prairies support a wide range of species, and loss of prairie grasslands is also putting the unique prairie biodiversity in peril[4,5]. Canadian grasslands are home to over 60 federally listed Species at Risk[6], including mammals (e.g., Swift Fox and Black-tailed Prairie Dog), amphibians (e.g., Great Plains Toad), reptiles (e.g., Prairie Rattlesnake) and birds (e.g., Chestnut-collared Longspur and Burrowing Owl). According to the 2019 State of Canada's Birds, grassland birds in Canada have declined by 60% since 1970, which is among the steepest declines of any bird group. Canadian grasslands are a critical biome for transboundary species whose breeding populations are found largely in Canada and without intact native habitat, would likely result in the demise of the species (e.g., Sprague's Pipit).

OVER 60
Number of species at risk in Canadian grasslands

60%
Decline in grassland birds in Canada since 1970

75%
Native prairie lost in Canada

Why are We Losing Canada's Grasslands?

About 75% of Canada's native prairie is already lost, primarily to make room for cash crops and urban expansion, and also to woody encroachment. The pace of the loss is staggering: an estimated 185,000 ha of native and tame grassland are lost every year across Alberta, Saskatchewan and Manitoba alone[7]. To put this into perspective, Chestnut-collared Longspurs - just like many grassland birds - need at least 1 ha within a larger grassland to raise their young, which means that each year, thousands of potential homes for grassland birds are lost. The main driver is the fact that grass-based production (i.e., ranching) tends to generate lower revenue than annual cash cropping, and market-driven rises in crop prices usually lead to an increased rate of conversion from grassland to cropland. In addition, financial risks associated with loss in cash crop yield due to weather can to some extent be mitigated by crop insurance, but the

available insurance products for ranching are less effective in mitigating these risks. **In short, grasslands are being lost due to market forces, which is exacerbated by lack of financial incentives for grass-based production systems and perverse subsidies.**

Policy Challenges and Opportunities for Grassland Conservation

Driven by the urgency of the loss of grasslands, the Central Grasslands Roadmap Initiative was formed, and stake and rights holders from Canada, the United States and Mexico, from diverse sectors and including many indigenous peoples, came together to identify shared priorities to address these challenges. The over 200 organizations that together form the roadmap include the Alberta Conservation Association, BirdLife International, Birds Canada, the Canadian Cattle Association, the Canadian Wildlife Federation, Ducks Unlimited Canada, the Manitoba Habitat Conservancy, Nature Canada, and the Nature Conservancy Canada. In 2022, the Initiative produced a collaborative guide to increase conservation of North America's Grasslands, and one of its three strategic areas focuses on policy, in recognition of its integral role in halting grassland loss.

200+

Organizations involved in the Central Grasslands Roadmap Initiative

In Canada, many of the grasslands are privately owned and not part of the federal or provincial protected areas network[8]. These working landscapes - managed by farmers and ranchers to produce food - play a key role in grassland conservation and are the focus of many of the pathways outlined below. Protected areas, and Indigenous Protected and Conserved Areas in particular, are also important for grassland conservation, but the high cost of purchasing grasslands from private owners is a barrier to sustaining grassland ecosystems through protected areas alone. Restoring former grasslands once they have been ploughed is an important pathway to recovering biodiversity and sequestering carbon, but is difficult and very costly. **Here, we provide a scan of opportunities that policy changes offer to conserve existing grasslands as working landscapes.** The scan can serve as the basis for an in-depth analysis for each option, including costs, barriers and implementation feasibility. Native grasslands are of paramount importance, however, perennial cover in the form of tame grasslands also play an important role in sequestering carbon and supporting biodiversity and other Ecological Goods and Services (EG&S) in some contexts. This paper focuses on policies that will primarily safeguard native grasslands but also explores policy options that may help conserve or increase other perennial grass cover where appropriate.

Stemming the loss of grasslands is key to meet Canada's commitments under the Kunming-Montreal Biodiversity Framework to reduce threats to biodiversity, and to comply with the Canadian Net-Zero Emissions Accountability Act, which obliges Canada to achieve zero GHG emissions by 2050. Delivery on these commitments will require collaboration across federal departments and agencies, and for each avenue, we have identified the departments whose mandates are most closely aligned with each opportunity.

Policy Opportunities

1. Ecological Goods and Services in the Canadian Agricultural Economic System

Grasslands provide a wide range of EG&S, such as runoff control[9], carbon sequestration[10] and biodiversity, including pollination[11]. And yet, EG&S remain an externality of the Canadian agricultural system, i.e., are not reflected in the market value of farm lands, inputs or products[12]. Agricultural lands are assessed by provincial agencies to determine their approximate market value, which is primarily based on the potential for producing annual crops[13]. Conversion of grasslands to cropland and the drainage of wetlands in fact increases a parcel's land value, as it raises the land's cash commodity production potential. The omission of EG&S in land assessments thus creates a perverse financial incentive of converting grasslands to cropland. As long as EG&S remain externalities, our current public policies, business risk management tools, land valuation and land tax mechanisms tend to benefit cropland, and further broaden the business risk and revenue gaps between ranching and crop production.

A working landscape grassland in south-western Manitoba
Credit: Ian Cook

Opportunities for Environment and Climate Change Canada, Agriculture and Agri-food Canada, provincial governments, and the Department of Finance

Creating financial incentives for nature-positive supply chains would transform EG&S from externality to important economic output[14], and would shift the financial imbalance between revenues generated by cash crops and grasslands. For example, the federal government could create or support:

- Voluntary or compliance EG&S markets, similar to the already established carbon markets[ab].

- Biodiversity-friendly production certifications:

    - In Canada, the Canadian Roundtable for Sustainable Beef (CRSB) certifies farmers and ranchers for wildlife habitat and grassland management (among other indicators), and in 2023, there were 12 companies sourcing beef from CRSB-certified operations.

    - The voluntary Australian Farm Biodiversity Certification Scheme certifies farms and farm businesses for their biodiversity management and cater to the environmentally aware consumer and corporations, and lenders seeking biodiverse agri-food supply chains like those in the Business for Nature Coalition.

    - BirdLife Partners in Uruguay, Argentina, Brazil and Paraguay formed the Southern Cone Grasslands Alliance to promote sustainable cattle grazing practices. To qualify for their certification, farmers must support wildlife on at least 50% of their grasslands.

    - Crop producers in Manitoba are eligible for payments by the government of Manitoba for not draining shallow wetlands that occur in cultivated fields. The successful 'Shallow Wetlands Incentives Program', which is part of the Growing Outcomes in Watersheds program, could be expanded to all provinces and grass-based production systems.

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a Voluntary carbon market – A broad and diverse suite of programmes and initiatives generating carbon offsets, spearheaded and administered by the private sector. There is no authoritative marketplace, and the voluntary market remains generally unregulated, though this is beginning to change[15].

b Compliance carbon market – A specific market supporting a government regulation that aims to limit GHG emissions, such as a cap-and-trade programme or emissions trading scheme. In some cases, regulated industrial emitters may be able to use carbon offsets as a flexible compliance option[16].

- The Taskforce for Nature-Related Financial Disclosures has developed a risk management and disclosure framework to identify, assess, manage and, where appropriate, disclose nature-related issues[17]. It includes 14 recommended disclosures covering nature-related dependencies, impacts, risks and opportunities. A similar framework could be adopted that is focussed on impacts of financial institutions and agri-food corporations on grasslands in the Canadian prairies, with a requirement to obtain biodiversity-positive outcomes within a given time period.

2. Provincial No Net Loss Grassland Policies

Grasslands in the prairies are largely under private ownership and much like prairie wetlands, their conservation can be, in part, achieved through provincial policy targeting the conversion of grasslands. The Alberta Wetlands Policy and the Manitoba Water Rights Regulation ensure no net loss of wetland benefits. These policies focus on avoidance of wetland loss and also include mechanisms for mitigation inclusive of replacement of impacted wetlands. Provincial governments could use the development of these wetland no-let loss policies and legislation as a template for establishing similar legislation and policy for grasslands.

Opportunities for provincial governments

Establishment of a provincial government grassland no net loss policy in all provinces to reduce the loss of grasslands through avoidance and restoration, using already developed wetland policies as the template.

Cattle on a private ranch in southwestern Saskatchewan
Credit: Aaron Roberge

3. Agricultural Business Risk Management

Crop insurance reduces financial risk associated with loss in yield due to weather and other external factors. Federal and provincial governments provide substantial subsidies to crop insurance. Through the AgriInsurance Program producers pay 40% of the crop insurance premium, while the remaining 60% of the crop insurance premium are paid by the Federal and Provincial governments, making it a widely used tool. Subsidized forage and pasture insurance products do exist but are not fully meeting the needs of ranchers, because the payments are triggered too late, and because payments are insufficient to cover the true costs. All of which contributes to leaving ranchers significantly more vulnerable to operational risks than annual crop farmers.

> *"Current forage and pasture insurance support is often only triggered when producers hold livestock inventory longer than is beneficial for grassland systems, actually extending the recovery time needed for pastures. Therefore, the available programs are actually unintentionally detrimental to the long-term resilience and viability of a livestock operation. Adaptive stocking can support long-term grassland resilience in the face of a changing environment but this is unsupported by the current forage and pasture insurance programs."*
>
> Ross MacDonald, 98 Ranch Inc., Lake Alma Saskatchewan

Opportunities for the agricultural financial service sector

- Insurance products that provide risk management to livestock production on par with those available to the cash crop sector.

- Land converted from native grass should become ineligible for crop insurance coverage for at least 5 years. A similar provision of the U.S. Farm Bill called Sodsaver, already exists in South Dakota, Minnesota, and other prairie pothole states in the U.S. Farmers who choose to break up native sod and convert it to cropland face a reduction in crop insurance premium subsidy assistance and a reduction in guaranteed yields of insured crops. The American Prairie Conservation Act (proposed in May 2023) would expand this provision across all U.S. states.

4. Clean Fuel Regulations and Tracking Land Use Change

The Clean Fuel Regulations are part of Canada's climate plan to reduce carbon emissions by expanding the use of biodiesel, ethanol and other alternative fuels. While well-intended, these regulations have negative consequences for grasslands by increasing demand and thus value for crops such as corn, canola and soybean, creating an economic incentive for grassland conversion[18]. The increased demand is likely going to be significant – the Canola Council of Canada estimated that annual demand for canola for low carbon fuels to meet Canada's Clean Fuels Regulations will be equivalent to the annual exports of canola to Japan[19], Canada's fourth largest canola export market.

Agriculture and Agri-food Canada committed to a policy of 'no net conversion' of habitats for crop feedstocks entering the clean fuel standard regulations supply chain. Yet there remain concerns amongst the grassland conservation community about the feasibility to enforce this policy without tracing the origin of a crop to the farm where it was grown, which is currently not done. In fact, in the U.S. a similar policy - the Renewable Fuel Standard - was implemented in 2007, and since then, there has been substantial expansion in the use of cropland through conversion of grasslands, raising serious concerns about the impact of the Standard on endangered wildlife. Understanding the extent of loss or changes in land use is crucial for conserving grasslands. Various organizations in different regions have invested significant resources in monitoring and creating inventories of grasslands. However, a notable limitation is the absence of a comprehensive national inventory of grasslands to date.

Opportunities for Agriculture and Agri-food Canada, Environment and Climate Change Canada

- Develop a mechanism that ensures that crops grown for biofuel feedstock in the Clean Fuels Regulations supply chain are not produced from land that was recently converted from natural habitats, such as native grassland, or are leading to the loss of natural habitats through more effective methods of verification.

- Introduce policies that encourage the use of agricultural waste instead of purpose-raised crops for biofuels.

- Continue to support and work to integrate the work undertaken by the Canadian Forage and Grassland Association to develop a national grassland inventory that maps the extent of Canada's native and tame grasslands and tracks changes. Integrating this into the current methodologies for monitoring grassland and land use change can support the development of consistent and evidence-based Federal and Provincial grassland policy.

5. Modify Organic Certification Requirements

Organic growing practices have in many ways less impact on the environment than conventional growing methods. However, to be eligible for organic certification, crop land has to have been free of chemicals and synthetic fertilizers for at least three years[20]. Native grasslands are in a sense well-suited for future organic crop production as the newly cultivated acres immediately meet these requirements and organic grain production can commence without a waiting period.

Opportunities for the agricultural financial service sector and Agriculture and Agri-food Canada

- Newly converted grasslands are ineligible for crop insurance (as per section 3, Agricultural Business Risk Management)

- Organic Certification Standards include a delay in receiving certification after conversion from native grassland.

Sprague's Pipit
Credit: Yousif Attia

6. Generate Carbon Offset Credits for Keeping Grass Intact

Ploughing releases soil carbon, and avoiding carbon emissions by keeping grassland intact can be used to generate carbon offsets. Carbon offsets (or credits) are units based on verified GHG emissions reductions, with each credit representing one tonne of carbon dioxide equivalent (CO_2e). These units can be traded on the voluntary[a] or compliance[b] carbon markets[21]. Specific protocols have been developed for activities such as afforestation, protecting mangroves, and landfill methane capture. In Canada, a protocol was designed by Climate Action Reserve to quantify the avoided GHG emissions inherent to not ploughing a grassland. The Canada Grassland Protocol, developed in 2019 for the voluntary carbon market, thereby offers an avenue to create financial benefits when grasslands are not ploughed but kept intact.

Black-tailed Prairie Dog
Credit: Julia Marshall

Opportunities for Environment and Climate Change Canada

- Accept avoided grassland conversion and other grassland-based carbon offset protocols into the compliance market to offer additional market opportunities beyond the voluntary carbon market. It is critically important to ensure additionality and permanence to not weaken the overall stringency of climate regulation in Canada.

- Explore a user-pay system for the carbon emissions associated with converting grasslands.

7. Reinstatement of the Permanent Cover Program

In the early 1990s, Canada implemented the Permanent Cover Program, which led to the establishment of 445,000 ha of perennial cover that was formerly cropland, with significant benefits for grassland birds[22]. Under the Program, landowners committed to maintaining these lands as hay fields or pastures for 10- or 21-yr periods. However, after only a few years, the Program was discontinued. The reinstatement of such a land set-aside program at the national level would be an impactful avenue to keeping grasslands intact.

Opportunities for Agriculture and Agri-food Canada

- A cost-benefit analysis that evaluates the cost-effectiveness of the Permanent Cover Program, and - depending on the outcome, develop a similar program that encourages keeping grasslands intact and grassland restoration.

A working landscape grassland in southwestern Saskatchewan.
Credit: Aaron Roberge

8. Energy Infrastructure

Energy development on the Canadian prairies contributes significantly to grassland habitat loss and degradation. The infrastructure associated with oil, gas, wind and solar energy development affect about 20% of all remaining grasslands across North America and often fragment grasslands, severely impairing the value of these grasslands as habitat for many grassland species[23]. As Canada transitions to green energy infrastructure, we see an opportunity to curb further grassland loss related to energy infrastructure.

Pronghorn
Credit: Julia Marshall

20%
of grasslands in North America are affected by energy development infrastructure

Opportunities for Natural Resources Canada

- A 'no net loss of grasslands' policy for all future energy development projects, or even a Biodiversity net gain approach that aims to leave the natural environment in a measurably better state than it was before a development. In England, biodiversity net gain is becoming mandatory under Schedule 7A of the Town and Country Planning Act 1990 in 2024, which obliges developers to deliver a biodiversity net gain of 10%.

- Policies that determine that wind and solar farms are to be placed within existing development as opposed to pristine grasslands, including a stipulation that native grasslands that have been converted to annual crops remain ineligible for renewable energy development for a period of time (TBD).

- Establishment of a provincial government grassland no net loss policy in the prairie provinces to reduce the loss of grasslands through avoidance and restoration (as per section 2, Provincial No Net Loss Policies).

9. Canada's 2030 National Biodiversity Strategy

In December 2022, the 15th Conference of the Parties (COP15) to the United Nations Convention on Biological Diversity (CBD) assembled in Montreal and adopted the Kunming-Montréal Global Biodiversity Framework (KMGBF). It lays out a set of global goals and targets to halt and reverse biodiversity loss by 2030, and the opportunities in this policy paper would contribute directly to the following targets:

#1 Reducing land-and sea-use change;
#3 Protect and conserve areas;
#4 Halting species extinctions and reducing extinction risk;
#8 Minimize impacts of climate change;
#10 Agriculture, aquaculture, fisheries, and forests are sustainably managed;
#11 Restore, maintain and enhance nature's contributions to people, including ecosystem functions and services,
#14 Integrate biodiversity and its multiple values into policies, regulations, planning and development processes;
#15 Integrate legal, administrative or policy measures within business and financial institutions;
#16 Encourage and enable sustainable consumption choices;
#18 Identify, and eliminate, phase out or reform incentives, including subsidies.

Parties to the Convention are expected to update their National Biodiversity Strategy and Action Plans to reflect implementing the KMGBF domestically and support the global goals and targets set out in the Framework. Revised national strategies must be completed before COP16, which is planned for late 2024. In December 2023, the federal government drafted a Milestone Document, which outlines Canada's 2030 National Biodiversity Strategy, reflecting only existing programming and investments. It highlights grasslands as a special area of concern, and in addition, implementation of some of the suggested policies will contribute to Canada's Sustainable Agriculture Strategy, which is currently being developed, and has the stated goal of 'action on priority environment and climate issues in the agriculture sector'.

Opportunities for the federal Government of Canada

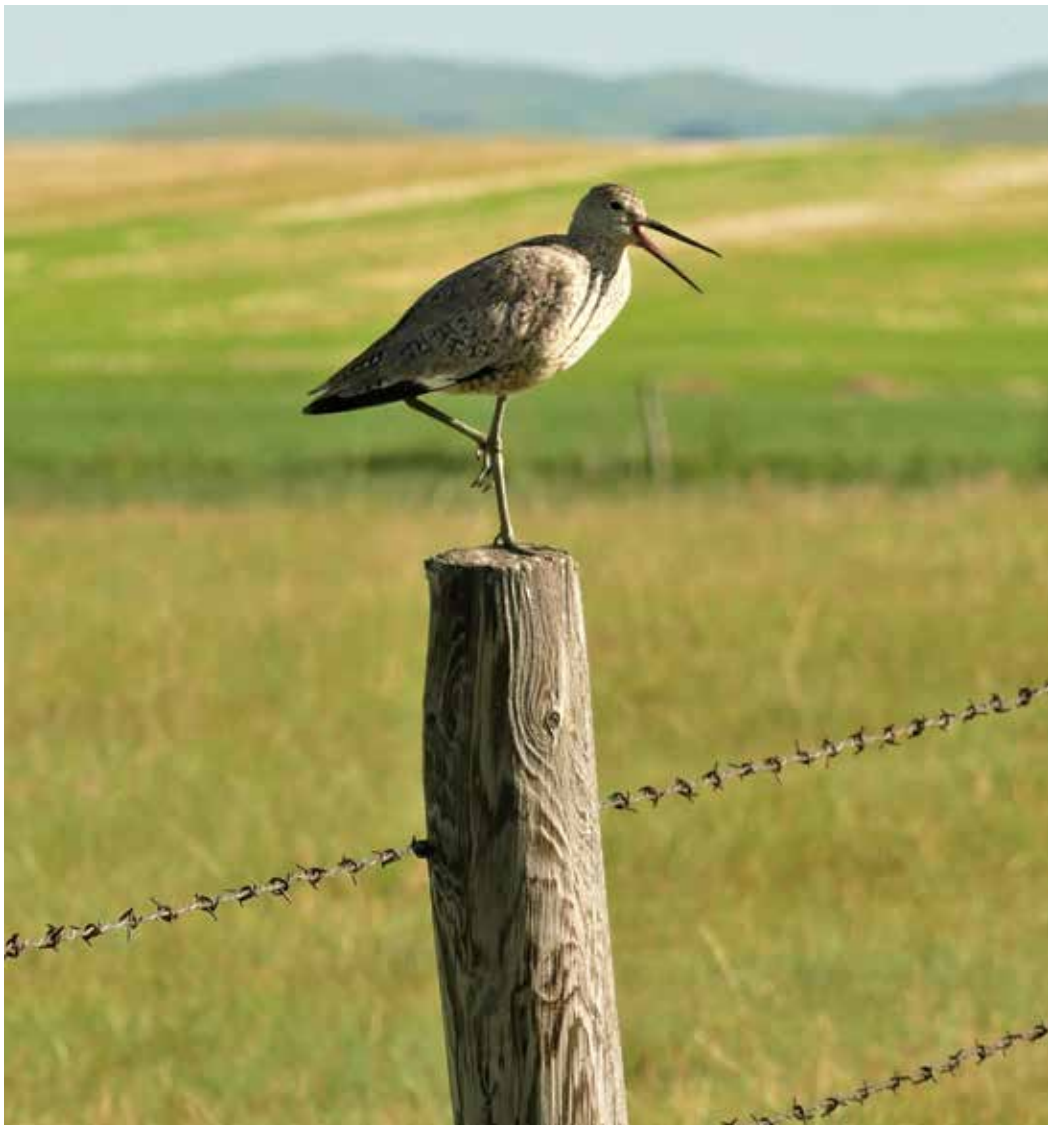
- Incorporate opportunities laid out in this policy paper into Canada's 2030 National Biodiversity Strategy

- Using a whole-government approach, review and align key relevant policy frameworks such as the National Biodiversity Strategy and Action Plan and the Sustainable Agriculture Strategy to mainstream biodiversity values (Target 14)

Conclusions

Grasslands are in a sense at the very core of the dual crisis of climate and biodiversity, and they also offer opportunities for both. Market forces, lack of financial incentives for grass-based production systems and perverse subsidies all contribute to their ongoing loss. The pathways highlighted in this document provide potential solutions for keeping these working landscapes intact, and directly contribute to KMGBF Target #18: *'Identify, and eliminate, phase out or reform incentives, including subsidies'* as well as our national emissions reduction targets.

The time to act is now. The coming decade is likely our last chance to avert the extinction of unique grassland biodiversity, and to prevent the release of the vast amounts of carbon that grasslands hold. A crucial next step is a comprehensive analysis of the policy options we laid out here, and putting the most impactful options into action.



Willet
Credit: Pete Davidson

The Central Grasslands Roadmap is a collaborative guide to increase conservation of North America's Central Grasslands, which span Indigenous Lands, Canada, the United States and Mexico. By bringing together diverse nations and seven sectors, the Roadmap identifies a shared vision, common principles, and collaborative priorities for the many people and organizations living and working on the Central Grasslands.

To learn more about the Central Grasslands Roadmap visit grasslandsroadmap.org or contact:

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Birds Canada is a national organization dedicated to bird conservation. Our mission is to drive action to increase the understanding, appreciation, and conservation of birds in Canada. Every day, our thousands of caring donors, passionate staff, and more than 70,000 volunteers are taking action to help save wild birds and their habitats.

To learn more about Birds Canada's work please visit Birdscanada.org or contact:

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Prairie Rattlesnake
Credit: Julia Marshall

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"Together, we can stem the loss of grasslands and maintain working landscapes that are teeming with wildlife."

Dr. Silke Nebel

Credit: Aaron Roberge

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