



February 26, 2024

Standing Senate Committee on Agriculture and Forestry
The Senate of Canada
Ottawa, Ontario K1A 0A4
Canada
via email: agfo@sen.parl.gc.ca

To the Standing Committee on Agriculture and Forestry,

On behalf of the Nature Conservancy of Canada, I would like to thank members of the Standing Senate Committee on Agriculture and Forestry for the opportunity to appear as a witness to the soil health study. In reviewing the transcript following the meeting, I realized that I misheard some of the questions posed by Senators and would like to take the opportunity to properly address them. Please accept this letter where I have offered more detailed information and examples to some of the questions asked by Committee members, in addition to my statement given on February 13, 2024.

Question received: “How does the conservation of soil health support broader environmental conservation goals? What are the potential consequences of negating soil health in the context of natural ecosystems?”

The conservation of soil health supports broader environmental conservation goals through the foundation of what soil is and what they do. Soils are an ecosystem with dynamic interactions between physical, chemical, and biological properties. They are the foundation of a variety of functions and processes that support and maintain plant, animal, and human life, including nutrient and energy (carbon and organic matter) cycling, water storage and cycling, climate regulation, and providing habitat for microfauna, macrofauna and burrowing animals. The biological properties, or biodiversity, of soils are a critical determinant in the chemical and physical properties of soil, and thus, how a soil fulfills these ecosystem services and functions.

As a result, the act of conserving soil health is two-fold: the biodiversity of the soil is conserved or improved, which improves the health of the surrounding environment. For example, intact, healthy soils store and filter water. This stored and filtered water eventually flows into streams, and these streams support the survival of aquatic species such as salmon, which conservationists target for protection. In this way, soil integrity and health (and thus, soil biodiversity) is demonstrably crucial to conservation success at scale. The indirect impacts of poor soil health and integrity can be far-reaching. Parker



(2010)¹ illustrates a stark example of how, following soil disturbance, a windborne pathogenic soil fungus eventually infected and killed an endangered sea otter off the west coast of the United States. The absence of sea otters causes cascading ecological effects: sea urchins, without population control from sea otters, will completely clear kelp forests, eliminating the habitat for species who inhabit kelp forests, then consequently impacting other species in the trophic web who rely on those for survival.

Question received: “I understand about 80% of the prairie’s grassland is being used for cultivation, urbanization and industrial development, and there is 20% left. What is the plan? Is it to protect the 20%, increase the 20%, or do you contemplate that it might even be reduced and maintain sufficient equilibrium?”

When an ecosystem is in equilibrium, all organisms within it have the resources and optimal living conditions they need and are in balance with their environment and each other. Across the Canadian prairies, population decline has been observed in numerous critical and once abundant wildlife species, and there are more federally listed species at risk in the Prairies than any other ecozone in Canada. Conversion of grasslands is the main reason for these declines. To maintain equilibrium requires, at minimum, the capacity of what the remaining grasslands can support. Without conservation action, the conversion of grasslands will continue and thus, and the loss of wildlife and ecosystem functions will only accelerate.

Canada has significant commitments under the Kunming-Montreal Global Biodiversity Framework (GBF) of the United Nations Convention on Biological Diversity (CBD) to halt and reverse biodiversity loss. Considering the impact that the conversion of Canada’s grasslands has had on our biodiversity already, we must take action to halt conversion of the remaining 20%. Even then, Canada’s commitments to halt and reverse biodiversity loss indicates that more must be done. What remains will be the “floor” upon which we rebuild this critically important ecosystem. Canada has committed to protecting 30% of its land and waters by 2030 and protecting the remaining grasslands will be an important contribution to this commitment. Conservation planning best practices are often based on the “CARE” principles, which means that we prioritize areas and habitats that are Connected, Adequate (in size and quality), Representative (enough habitat types for various species), and Effective (cost-effective and meets conservation objectives/needs). Together, these principles contribute to creating and maintaining resilient landscapes. Much like how soil health and biodiversity have direct and indirect influences on broader ecological functions, so does above-ground biodiversity. Ironically, accelerating impacts of human activities on biodiversity can have direct consequences for ecosystem goods and services that support human life². Thus, achieving conservation goals in the prairie grasslands does not

¹ [Parker, S. 2010. Buried treasure: soil biodiversity and conservation. *Biodiversity and Conservation*. 19 \(13\): 3743-3756.](#)

² [Rao, M and Larsen, T. 2010. Ecological consequences of extinction. *Lessons in Conservation*. 3: 25-33.](#)



have to be at the expense of economic or social cost to other land uses in the broader landscape – indeed, they are complementary.

Question received: “How do you work with the local communities who are interested to develop and generate more taxes, more industrialization or more real estate taxes and preservation of part of the — a substantial part of the grasslands?”

Today, Canadian beef producers are the primary stewards of Canada’s remaining native prairie grasslands, producing beef while ensuring that grasslands stay as grasslands. The Canadian cattle and beef sector contributes \$24 billion to Canada’s GDP annually and supports approximately 347,000 jobs in Canada³. Thus, our collaboration and partnership with those in the beef industry, usually in rural communities, is contributing to Canada’s economy. NCC, and landowners who live and operate under conservation easements signed with NCC, pay property taxes just like all landowners. Furthermore, more than 90% of the properties that NCC conserves in the grasslands are grazed by local ranchers, therefore contributing to jobs and taxable income in local communities and business revenue spent in those communities. Providing land for rent to local beef producers can mitigate financial risks to their business, lower the cost of entry for young producers, and support succession planning⁴.

Sincerely,

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³ [Canadian Beef Economics – Canadian Cattle Association](#)

⁴ [2022 farmland rental rates: An overview | FCC \(fcc-fac.ca\)](#)