



Monday May 25th, 2020

The Honorable Jonathan Wilkinson MP
Minister of the Environment and Climate Change

Regarding nature-based solutions for a resilient Canada

Dear Minister,

On behalf of Greenpeace Canada, I want to wish you good health and success in responding to the current pandemic that has gripped our country and the world. This crisis has disrupted millions of lives and exposed systemic vulnerabilities in our society that will clearly require significant resources to address.

Nature-based solutions have emerged as a key policy option for addressing many of these challenges and ensuring Canada's resilience in the face of future crises. These offer tremendous opportunities to stimulate the Canadian economy and build strong foundations for a sustainable and equitable society into the 21st Century.

Examining COVID-19 recovery options, a recent paper published in the *Oxford Review of Economic Policy*¹ identifies "natural capital investment for ecosystem resilience and regeneration including restoration of carbon-rich habitats and climate-friendly agriculture" as one of several fiscal recovery policy options that offer both high economic multipliers and positive climate impact. Such nature-based measures furthermore offer multiple co-benefits beyond economic stimulus and climate mitigation which should also be considered in recovery planning.

To support this endeavour, Greenpeace Canada wishes to provide a number of recommendations related to nature-based solutions for Canada in two main categories: 1) Protecting and restoring nature; and 2) Growing food resilience and regenerative agriculture. Please see these described fully in the accompanying document. I would be happy to discuss in greater detail with your office.

Sincerely,

A handwritten signature in black ink that reads "Shane Moffatt".

Shane Moffatt
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¹ ["Will COVID-19 fiscal recovery packages accelerate or retard progress on climate change?"](#) Cameron Hepburni , Brian O'Callaghan, Nicholas Stern, Joseph Stiglitz, Dimitri Zenghelis, *Smith School of Enterprise and the Environment, University of Oxford, London School of Economics and Political Science, Columbia University, University of Cambridge.*



CC:

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Nature-based solutions as part of a green and just recovery from COVID-19

1) Protecting and restoring nature

The natural world, when healthy, provides life-support systems for all Canadians. We need to invest in the health of our planet as we would for our own health. We urge your government to make unprecedented investments in “nature jobs” that will restore and protect Canada’s degraded natural infrastructure. This means:

a. Achieving nature protection targets

Natural ecosystems are strongholds of biodiversity and massive stores of carbon.² When healthy, they store far more carbon than damaged or degraded areas and disturbing them can release incredible amounts of greenhouse gases into the atmosphere. Securing their effective protection is therefore key. Intact ecosystems are also more resilient to climate change impacts. For example, large intact forests are less vulnerable to invasion of alien species and to drought, loss of humidity and the resultant risk of fire. Our oceans provide enormous carbon sinks but declining marine biodiversity, habitat loss and pollution threaten their ability to absorb and store carbon.

To return safely to ‘planetary boundaries’, we must allow massive areas to follow natural processes, providing the ‘ecosystem services’ that are critical for our survival on this planet. Scientific studies across different ecoregions suggest that protection levels ranging from 25 to 75% are needed to conserve biodiversity and ecosystem services, and to mitigate climate change. Protecting 50% has been identified as a global ‘middle ground’.³ As of 2018, however, only 11.2% of Canada’s terrestrial area was conserved, including 10.9% in protected areas.⁴

To address this, your government has committed to protect 30% of Canada’s lands, oceans and freshwaters by 2030.⁵ Commitments are one thing, implementation is another. This is the time to create new, green jobs at an ambitious scale and achieve this urgent task. Canada has the skills and smarts to achieve this national priority through effectively and equitably managed, ecologically representative and well-connected networks that respect the rights of Indigenous Peoples. Transparent reporting and monitoring of progress will be essential, as will significant resource mobilisation including job creation and economic stimulus.

Protection is not about excluding people from low-impact, sustainable use.⁶ In fact, many ecosystems rely on management activities from Indigenous Peoples and other local

² Dinerstein et al (2019) A Global Deal For Nature: Guiding principles, milestones, and targets. Science Advances 5, eaaw2869. <https://doi.org/10.1126/sciadv.aaw2869>

³ Ibid

⁴ <https://www.canada.ca/en/environment-climate-change/services/environmental-indicators/conserved-areas.html>

⁵ <https://pm.gc.ca/en/mandate-letters/2019/12/13/minister-environment-and-climate-change-mandate-letter>

⁶ “A focus on biodiversity and Indigenous rights delivers greater mitigation ambition than only focusing on carbon alone”, <https://www.climatelandambitionrightsalliance.org/report>



communities. Access and rights for Indigenous Peoples – and sustainable usage by other local communities – must therefore be integral to the concept of protection.

b. Restoring ecosystems

In addition to protecting Canada's existing biodiversity and carbon hotspots, now is the time for public investment and job generation in restoring ecosystems that have been destroyed or degraded. Restoring these ecosystems can help mitigate global heating by enhancing nature's ability to sequester and store carbon. Environments that are restored to health can be more resilient to climate change and other impacts.⁷ Restoration can also help turn the tide on species extinction by recovering large tracts of habitat appropriate for wildlife at risk.

Keeping global temperature rise below 1.5 degrees additionally requires removing carbon from the atmosphere, the overall amount depending largely on how fast and deep emission cuts will be realized. Restoration of natural forests and other ecosystems, as well as reforestation, are the only proven approach to realize such 'negative emissions' at the scale necessary and provide essential ecosystem services at the same time.

In addition to green jobs and combating the ecological crisis, ecosystem restoration can provide a host of other benefits, including water filtration, flood control, pest management, reducing soil erosion and enhancing food security. Recovering forests, peatlands, seagrass beds and coastal wetlands, as well as enhancing soil carbon uptake in grazing and croplands, are important priorities for restoration.⁸ Examples of "shovel-ready" and "shovel-worthy" restoration projects include rebuilding shorelines, replanting native tree species, and removing invasive species.

Restoring coastal wetlands, such as saltwater marshes and seagrass meadows, is widely regarded in the scientific literature as key to removing CO₂ from the atmosphere. Commonly known as 'blue carbon' ecosystems, coastal wetlands are particularly effective at storing carbon in their soils and sediments. Coastal wetlands provide a natural defence against coastal flooding and storm surges by dissipating wave energy, reducing erosion and helping to stabilise shore sediments. Restoring coastal wetland can enhance food and economic security for local communities, as they often represent important spawning grounds.⁹

In the case of tree planting, public projects should restore natural, healthy forests, not plant trees alone. "*The simplistic assumption that tree planting can immediately compensate for clearing intact forest is not uncommon. Nonetheless, a large body of literature shows that even the best-planned restoration projects rarely fully recover the biodiversity of intact forest.*"¹⁰ Regeneration via natural processes should be prioritized. In some cases it might also be helpful

⁷ See e.g.: Watson et al (2018) The exceptional value of intact forest ecosystems. *Nat Ecol Evol* 2, 599–610. <https://doi.org/10.1038/s41559-018-0490-x>

⁸ For an overview see: Roe, S., Streck, C., Obersteiner, M., Frank, S., Griscom, B., Drouet, L., Fricko, O., Gusti, M., Harris, N., Hasegawa, T., Hausfather, Z., Havlik, P., House, J., Nabuurs, G.-J., Popp, A., Sánchez, M.J.S., Sanderman, J., Smith, P., Stehfest, E., Lawrence, D., 2019. Contribution of the land sector to a 1.5 °C world. *Nat. Clim. Chang.* 1–12. <https://doi.org/10.1038/s41558-019-0591-9>

⁹ Ibid.

¹⁰ <https://science.sciencemag.org/content/368/6491/580>



to support such processes, for example by planting a broad mix of native tree species in areas where forests are still able to grow but seed trees are missing. All restoration projects need to weigh benefits for people, climate and biodiversity without playing one against the other.

Improve community health in cities and towns all across Canada through growing our urban canopies with native species, with a focus on those communities most in need.¹¹ This offers a myriad of benefits in addition to job creation, including: human health and well-being, climate change mitigation and resilience, biodiversity enhancement, green economic growth, land and soil regeneration, watershed protection, resilience to flooding events, food and nutrition security, recreation, education, social cohesion and equity.¹²

c. Supporting communities in transition

Empower communities to make an equitable transition to more diversified, sustainable and job generating opportunities. Support training in Indigenous and single-industry communities. Invest, for example, in the research and development of non-timber forest economies. In addition to a low environmental impact, these sectors are also generally more labour intensive and less capital intensive than traditional extractive industries, making them a good fit for small communities. Provide marketing support and start-up funds for entrepreneurs in these sectors and target funding towards non industrial initiatives that help diversify local economies.

Local communities deserve furthermore to benefit from their maintenance of Canada's globally essential ecosystems. In order to appropriately assess their contribution, invest resources and create jobs in inventorying and accounting for these ecosystem services and functions. Strengthen natural ecosystem carbon sink capacities, biodiversity values and ecosystem services while also ensuring economic opportunities and benefits for local communities.

d. Respecting Indigenous rights and knowledge

Indigenous Peoples' knowledge, rights, and aspirations must be at the heart of Canada's action to protect and restore nature. This means fully implementing and adopting into domestic law the *United Nations Declaration on the Rights of Indigenous Peoples*, to which Canada is a state signatory, and in particular Article 32 (free, prior and informed consent) related to developments on traditional territories. Article 8(j) of the *United Nations Convention on Biological Diversity*, to which Canada is also a signatory, recognizes the importance of Indigenous knowledge, a system of thinking and original science of the land in its own right. These rights and knowledge, as well as treaty, constitutional and inherent rights must be integrated holistically, with adequate funding to engage equally and as decision-makers in all land-use planning processes. This notably includes the development of Indigenous-led conservation area planning, as an essential pillar of our collective journey towards reconciliation. Indigenous protected and conserved areas would be a perfect target for public funding and job creation.

¹¹ Access to shade is often unequal, e.g. https://twitter.com/faisal_moola/status/792068861310930946

¹² <https://www.nature.com/articles/s41467-018-03622-0.pdf>



e. Holding companies accountable to the public

Strengthen and enforce existing environmental regulations. Only deploy stimulus packages that offer incentives for nature-enhancing activities. No subsidizing industries responsible for the destruction of the environment, notably climate change and biodiversity loss. Propping up industries such as intensive agriculture, long-distance transportation such as the airlines, and fossil-fuel-dependent products and energy sectors, only subsidizes the emergence of future crises. Require companies receiving public support to demonstrate their contribution to meeting **both** Canada's nature protection targets and climate goals.

2) Growing food resilience and regenerative agriculture

Food is essential to our health and survival, yet this pandemic has exposed shortcomings in Canada's food system and supply chains that demand attention and action. By investing in a resilient food system, your government can help communities get through the current crisis, create immediate economic opportunities and green jobs, improve long term food security, promote public health, address climate change and protect biodiversity. This means:

a. Investing in regenerative agriculture

Shifting food production from industrial to regenerative agriculture has enormous potential for job creation, as well as significant co-benefits such as enhanced food security, climate mitigation and resilience, and biodiversity enhancement. A redesigned farming system could result in significant emission reductions and provide large-scale carbon sinks.

Regenerative farming is currently practiced by a relatively small number of farmers and growers. It is also known as "agroecology", ecological or biological farming and includes farms operating with the market certification of organic. It is characterised by a diversification of crops, plants and animals and practices that mimic natural systems to access nutrients, water and pest control required for growth. Many of its practices and principles have been developed with Indigenous knowledge accumulated over millennia.¹³

A substantial body of research shows the environmental benefits of regenerative organic farming include: more resilience to drought, floods, and pest incursions; reduction in water pollution; increased levels of biodiversity; increased carbon sequestration and increased soil health.

Equally importantly, recovery funds invested in a just and equitable transition to regenerative organic farming will support the health and economic security of farm workers and rural communities. This should include the following financial incentives and technical assistance to facilitate a transition to regenerative and plant-based agriculture:

¹³ <https://www.ecologyandsociety.org/vol17/iss4/art44/>

- Agroforestry – integrating trees into farmland – can have multiple benefits for people, biodiversity and mitigating climate change. It provides additional habitat for biodiversity and increases the carbon stock of farmland. It can reduce dependency on fertilizer and feed input, provide medicine, fire wood, and non-timber products such as nuts, fruit, resins, gums, etc. Provide one-off grant funding for agroforestry and cover cropping for the establishment and initial maintenance of trees, and for the first three years undertaking these practices to allow farmers to gain experience in them;
- Provide grant funding for the processing of regenerative organic and plant based foods, and by constructing diversified and value-added processing facilities directly;
- Invest in R&D, training and advisory services for regenerative organic farming. Fully fund regenerative organic advisory services, cover the costs of organic certification and inspection, and substantially increase the funding to regenerative organic research;
- Finance the construction of organic compost and seed facilities;
- Finance the fencing and replanting of streams, wetlands and marginal land; and
- Any work the Government does to invest in regenerative agriculture must be done in partnership with Indigenous Peoples, their representative organisations, communities and knowledge holders. There are many with profound contributions to make.

b. Not subsidizing industrial livestock

Industrialized food production depends on intensive fossil fuels and pesticide use, depleting our natural resources through water pollution, soil erosion, and biodiversity loss, while relying on long supply chains. This makes our food system more vulnerable to disruption from unanticipated events like COVID-19. Industrial livestock production, in particular, demands an enormous amount of resources and is responsible for widespread pollution of air, land, and water. It's also a significant contributor to climate change, which is driving declining crop yields, unpredictable planting seasons, increases in agricultural pests and diseases, and worsening land degradation. There should be no subsidies, policies or investment that support industrial livestock.

Instead, support small and medium size farmers to continue producing food and keep their farms operational (e.g. grant and loan programmes) and getting their products more directly to market. Support the continued operation of farmers markets as an essential service. Farmers who sell in farmers' markets could also receive dedicated funds to ensure continued operations.

c. Respecting Indigenous rights and knowledge in food sovereignty

Indigenous Peoples have historically benefited from a healthy balance of locally sourced natural foods, including meats, fish, plants and fruits. In too many instances, colonialism, industrialisation and other forces disrupted the natural balance and removed these communities



from their lands, breaking the connection between local foods and people. Some communities were able to preserve this connection, while others are attempting to rebuild it today. Invest in Indigenous food sovereignty initiatives as an immediate and long term priority. Support Indigenous food producers and the application of essential Indigenous knowledge through Canada's food system. This is essential for the fulfillment of the full range of rights outlined in the *United Nations Declaration on the Rights of Indigenous Peoples*, including to cultural survival.

d. Ending food waste

It is estimated that at least 30% of the food produced globally is wasted annually.¹⁴ If food loss and waste were a country, it would be the third-largest emitter of GHG behind China and the US, at roughly 8% of global emissions.¹⁵

In Canada, a staggering 58% of all food produced is either lost or wasted.¹⁶ Food waste and loss in this country creates 56.6 million tonnes of carbon dioxide-equivalent emissions.¹⁷ Food in landfills also creates methane, a greenhouse gas that traps 28 times more heat than carbon dioxide in the atmosphere.¹⁸

Our precious and finite natural resources cannot sustain this scale of waste. This also represents an enormous loss of economic potential and strain on farmers to meet cosmetic and other unnecessary standards. End food waste by supporting small and medium farmers getting good food directly to people's plates by reducing sale restrictions and supporting farmers' markets. Require the grocery sector to report on, and massively reduce, its food waste across the supply chain and remove barriers to donations of good food. Support municipal waste reduction measures.

e. Ensuring food security and the right to food

Food insecurity is set to double in Canada by the end of 2020.¹⁹ That would mean within the span of less than a year, over 8 million Canadians struggling to put food on the table. Ensure food security and access to a range of healthy and culturally appropriate produce for those most vulnerable to the effects of COVID-19, including Indigenous Peoples, low-income households, the elderly, frontline health and care workers. Support jobs in regenerative agriculture, as well as small and medium farmers, to help meet this urgent need. Fund municipalities across Canada pursuing local food resilience initiatives, in particular growing (e.g. urban agriculture,

¹⁴ CFS (2016) Food waste: A global challenge, a local solution, Committee on World Food Security Secretariat, FAO, Rome, 24 Oct 2016 <http://www.fao.org/cfs/home/blog/blog-articles/article/en/c/449010/>

¹⁵ UN (2016) UN announces first-ever global standard to measure food loss and waste, United Nations, 7 Jun 2016 <https://www.un.org/sustainabledevelopment/blog/2016/06/un-announces-first-ever-global-standard-to-measure-food-loss-and-waste/>

¹⁶ Second Harvest, [The Avoidable Crisis of Food Waste, the Roadmap](#)

¹⁷ Ibid.

¹⁸ Saunio, M., et al. [The growing role of methane in Anthropogenic Climate Change](#), *Environmental Research Letters* (December 2016).

¹⁹ [Growing resilience and equity: A food policy action plan in the context of Covid-19.](#)

The Greenpeace logo, featuring the word "GREENPEACE" in white, uppercase, sans-serif font, centered within a solid green rectangular background.

community gardens, permaculture, food forests, public education) and accessing (e.g. farmers' markets) locally produced food.

Invest in programs, such as school food programs, to encourage a more healthy, climate-friendly and plant-centered diet as recommended by Canada's Food Guide.²⁰ In addition to public health, there are also good environmental reasons to do so: the greenhouse gas footprint of meat products is approximately 10–100 times greater than plant-based foods.²¹ Shifting to more plant-based foods is therefore one of the quickest and simplest ways to reduce emissions. But all Canadians need to be able to afford these nutritious foods, not just a few. Again, support Canada's small and medium farmers, to help meet this need.

²⁰ Canada's Food Guide: [Healthy eating recommendations](#).

²¹ Clark, M. & Tilman, D. 2017. Comparative analysis of environmental impacts of agricultural production systems, *Environmental Research Letters* 12. Poore, J. & Nemecek, T. 2018. Reducing food's environmental impacts through producers and consumers. *Science*, 360: 987.