



LEVERAGING  
**PROTECTED AREAS**  
FOR

# CLIMATE ACTION

POLICY BRIEF



DECEMBER  
2024



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Cover photos: Ryan Stone (panorama), Elena Elisseeva (lake), iStock (kelp), Andrew Stowe (fish).

This policy brief is based on CPAWS’ [“Protected Areas as a Nature-based Climate Solution”](#) report, by Dr. Risa B. Smith, published December 2023<sup>1</sup>.

Photo: Ben Allan





Photo: Pete Nuij



Photo: Eric Mclean



## SUMMARY

Canada's response to climate change can be significantly bolstered by permanently protecting critical carbon-dense ecosystems.

This brief presents policy options to help advance protected areas as a nature-based climate solution (NBCS) and make a significant contribution to reducing Canada's greenhouse gas (GHG) emissions. It also underscores the imperative of respecting and centering Indigenous knowledge and rights in this work.

Canada is home to some of the most carbon-dense ecosystems in the world. Protecting northern peatlands, old-growth<sup>2</sup> boreal and temperate forests, ancient prairie grasslands, and coastal blue carbon ecosystems would make a significant contribution to national and global emission reduction commitments.

Carbon-dense ecosystems are currently poorly represented in Canada's protected areas system. Maintaining and expanding protected areas that overlap with carbon dense ecosystems should be a cornerstone of Canada's climate action strategies as well as its biodiversity strategies.

- Nature-based solutions are solutions to societal challenges that involve working with nature.<sup>3</sup>
- Nature-based climate solutions are a subset of nature-based solutions that specifically address climate change mitigation and adaptation and at the same time provide multiple benefits for biodiversity and people.



Photo: Guy Tsror

## NATURE-BASED CLIMATE SOLUTIONS

We are in an unprecedented biodiversity and climate crisis. Globally, nearly a million species face extinction, primarily due to habitat loss, overexploitation, and climate change. Canada is not immune to this crisis with more than 850 species assessed as being at risk of extinction, and the list growing every year.<sup>4</sup>

At the same time, atmospheric carbon dioxide has risen to levels not witnessed in the past 800,000 years, resulting in a rapid increase in global temperatures. This surge has led to intensified heatwaves, severe storms, and rising sea levels, impacting communities and ecosystems worldwide.

As a party to the UN Framework Convention on Climate Change (UNFCCC) and to the UN Convention on Biological Diversity (UNCBD) Canada has committed to halt and reverse biodiversity loss, to protect at least 30% of land and ocean by 2030, as well as to reduce emissions by 40 to 45 percent from 2005 levels by 2030, and achieve net-zero emissions by 2050<sup>5</sup>. Under both Conventions, parties have recognized that in addition to moving away from fossil fuels, nature conservation is an integral part of the solution to climate change.

Delivering on Canada's commitment to reducing greenhouse gas emissions requires a multifaceted approach. First and foremost, it requires deep direct emission reductions from fossil fuels. Harnessing the potential of nature protection as a nature-based climate solution is an important complementary strategy.

Protected areas also play an important role in climate change adaptation, strengthening the integrity and resilience of ecosystems, serving as buffers against unpredictable weather events, and as climate refugia for species. Establishing networks of protected areas connected by ecological corridors is essential to support wildlife movement in response to a changing climate, enhancing the overall resilience of ecosystems across a given landscape.







## NBCS MUST CONTRIBUTE TO RECONCILIATION

Past practices of displacing Indigenous Peoples from their lands in the name of wilderness protection are being replaced by a new paradigm that recognizes Indigenous leadership in conservation and natural climate solutions. This important work entails recognizing and respecting Indigenous rights and title over lands, Indigenous knowledge systems, legal traditions, cultural practices for managing land and waters, and the imperative for inclusive decision-making, including their free, prior and informed consent.

Incorporating Indigenous knowledge and world views in protected area creation and management supports the conservation of some of Canada's most important biodiversity and carbon hot spots, while providing a framework for reconciliation.

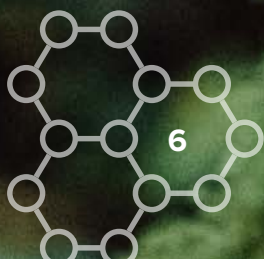
## PROTECTED AREAS ARE AN EFFECTIVE NATURE-BASED CLIMATE SOLUTION

Well-designed and effectively and equitably managed protected areas are proven tools to conserve nature. Scientific consensus is now emerging that effectively designed and managed protected areas offer the highest total per hectare value as a nature-based climate solution (NBCS).

Protecting and restoring carbon-dense ecosystems—such as northern peatlands, old-growth and boreal forests, ancient grasslands, and coastal blue carbon sites—offer significant immediate and long-term benefits for climate change mitigation by securing stored carbon and actively contributing to CO<sub>2</sub> removal from the atmosphere.

The greatest short-term benefit (by 2030) comes from protection of carbon-dense ecosystems to ensure that the carbon they are storing is secure and that their ability to remove CO<sub>2</sub> from the atmosphere is maintained. Restoration of damaged ecosystems is also important, but its benefits will occur over the longer term (i.e. post 2050).

Therefore, a strategic approach to protected areas as a NBCS should include protecting existing high-value areas, restoring damaged ecosystems, and ensuring protection of restored ecosystems, in that order.



### Protected areas and climate change mitigation

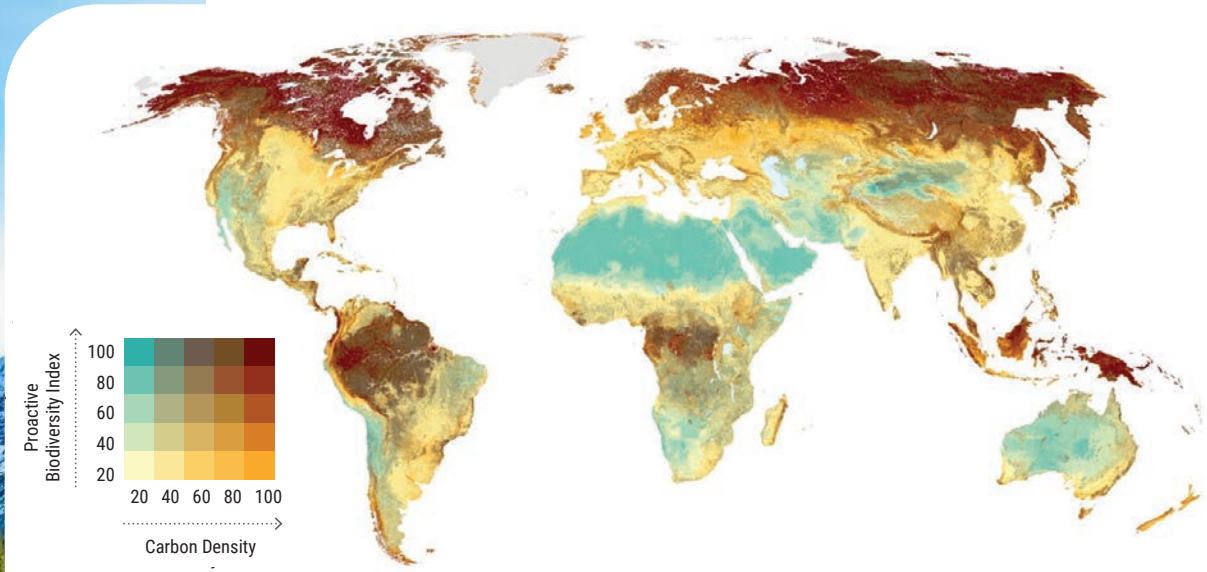
- Safeguarding 900 km<sup>2</sup> of old-growth forests annually can lead to a reduction of 17.2 Mt (million tonnes) CO<sub>2</sub>e by 2030, constituting 5 to 6% of Canada's promised emissions reductions.<sup>6,7</sup>
- The Hudson Bay Lowlands, the second largest intact peatland complex in the world, sequestered the equivalent of 11% of Canada's total emissions in 2020, and prevented the release of 30 Gt (billion of tonnes) of carbon that is stored.<sup>8</sup>
- Landscapes inside terrestrial protected areas store more carbon and sequester more CO<sub>2</sub> from the atmosphere than those outside of protected areas, even though the protected areas were not created specifically for climate change mitigation.<sup>9,10</sup>

Expanding protected areas to deliver on Canada's 30% by 2030 protection commitment could deliver substantial CO<sub>2</sub> sequestration and storage benefits if areas of high biodiversity and carbon value on land and in the ocean are included.



Photo: Robert Bohrer





**Figure 1:** Convergence of Carbon-Density and Biodiversity. This map shows the overlap between carbon-rich ecosystems and the proactive biodiversity index—representing high species richness, range size, rarity, high-local intactness, and high average habitat health. The darker brown shows the greatest overlap while yellow shows little overlap; 12% of the dark brown areas globally are represented in protected areas networks. Source: Soto-Navarro *et al* 2020.<sup>11</sup> Printed with permission

## POLICY RECOMMENDATIONS

Protecting high carbon ecosystems within Canada, including northern peatland complexes such as in the Hudson Bay Lowlands and the Mackenzie River Basin, old-growth boreal and temperate forests, ancient prairie grasslands, and coastal blue carbon systems including remaining eelgrass meadows and salt marshes on all three coasts, would contribute directly to Canada’s emission reduction commitments. The following are policy recommendations for governments to advance this opportunity.



# POLICY RECOMMENDATIONS



1.

**Acknowledge the pivotal role of protected areas in preserving stored carbon and bolstering the capacity of ecosystems to sequester CO<sub>2</sub>:**

- a. Prioritize the protection of areas where carbon density and/or sequestration potential aligns with high ecological and cultural values, optimizing climate and biodiversity benefits.
- b. Conduct comprehensive national and regional mapping and analyses to identify overlapping areas between carbon density and biodiversity, ecological corridors, and climate refugia.
- c. Ensure criteria for NBCS funding incentivize the establishment and effective management of protected areas in carbon-dense high ecological value regions, whether or not they are currently threatened.

2.

**Explore regulatory and legislative options to enable the designation of carbon-rich ecosystems, as well as incentives and mechanisms to support their protection. Ensure provisions are included for equitable sharing of benefits with Indigenous Peoples.**

3.

**Expand long-term funding and support for creating and managing Indigenous Protected and Conserved Areas (IPCAs) and Indigenous-led nature-based climate solutions.**

4.

**Strengthen Canada's carbon accounting system to accurately capture the value of protecting carbon-rich ecosystems, including by fully reporting carbon emissions.**

5.

**Develop policy tools to support the creation of Marine Protected Areas (MPAs) that address the overlap between carbon-density and biodiversity in marine environments.**

6.

**Invest in mapping and quantifying carbon stored in coastal marine systems and sediment, identifying key marine biodiversity areas, and understanding the carbon-biodiversity relationship in marine systems.**

7.

**Initiate policy-backed research and data collection efforts to identify and measure carbon storage hotspots in marine sediments, safeguarding these critical areas from developmental threats.**

Photo: Ludwig Luska





## ENDNOTES

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- 11 Soto-Navarro, C. *et al.* Mapping co-benefits for carbon storage and biodiversity to inform conservation policy and action. *Phil. Trans. R. Soc. B* 375, 20190128 (2020). <https://royalsocietypublishing.org/doi/10.1098/rstb.2019.0128>

This project was supported with funding from the Metcalf Foundation and the Gordon and Betty Moore Foundation.









## About CPAWS

The Canadian Parks and Wilderness Society is Canada's only charity dedicated to the protection of public land, freshwater and ocean with a strong national and regional presence across the country. We are Canada's leader in conservation with 60 years of success based on our expertise, public education and advocacy, relationships and local knowledge. We are a credible, trusted, knowledge-based, nationally coordinated, collaborative organization, focused on conserving nature to respond to the dual crises of accelerated biodiversity loss and climate change. Our vision is that at least half of land, freshwater and ocean in Canada is permanently protected to sustain nature and people for current and future generations

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