



INTEGRATED BIODIVERSITY PATHWAYS FOR SUSTAINABILITY IN CANADA

Evidence Brief

Future Earth Canada Hub, Sustainability in the Digital Age,
and Concordia University



About the project

Supporting large tracts of intact forest and one quarter of the wetlands remaining in the world, Canada plays an indispensable role in maintaining global biodiversity. The past decade was marked by Canada's significant progress in biodiversity conservation, especially the expansion of protected areas to meet the Aichi 2020 target of 17%. Still, we continue to see accelerating biodiversity losses across the country, resulting from the convoluted drivers of widespread extractive human activities and regional climate change, amongst other factors.

Efforts to effectively address the biodiversity crisis have been hampered by violations of rights of Indigenous communities (key land and water stewards), lack of biodiversity data translated to decision-making, and inadequate conservation measures. The outcome of more frequent disasters such as heat waves, floods and zoonotic diseases is a warning signal from nature: when our ecosystems are degraded, human well-being is also harmed. Global communities of researchers, businesses, governments and society consistently ranked biodiversity loss as a top threat to sustainable development in the next decade. At this crossroad, how can Canada fight against this planetary crisis on its own land? Where are the opportunities to leverage the value of our rich natural assets for a sustainable future? This project answers these questions through a research synthesis of knowledge on biodiversity conservation and an outlook on the potential solutions to tackle systemic barriers in Canada. Supported by evidence from literature review and stakeholder consultations, this brief provides actionable suggestions for policy-makers to chart biodiversity-centered pathways for sustainability in Canada and beyond.

Key findings

1. Canada must assume its global responsibility of managing our ecosystem and biodiversity conservation for the benefit of global society. Our contribution to global ecosystem values is among the highest, particularly considering the massive but declining extent of intact ecosystems in the north. Policies implemented in Canada can profoundly influence conservation outcomes inside and outside our borders.
2. Canada's international trade policies should be considered when managing national ecosystems. In addition to the main pressures on biodiversity like climate change and habitat modification, Canada's exports to, and consumption of imports from other countries can lead to biodiversity loss beyond our boundaries.
3. Biodiversity degradation has occurred in lockstep with colonization in Canada and the disruption of Indigenous governance systems that stewarded Canada's ecosystems for millennia. The self-determination rights for Indigenous and local communities should be unequivocally respected and protected.
4. Provincial and territorial acts and strategic plans often embed biodiversity conservation into other policies, without explicit monitoring mechanisms, measures of conservation success or clear regulations. Close collaboration across different governmental levels is required to ensure that political support and related resources are aligned.
5. Indigenous knowledge and practices play an essential role in value change and conservation in Canada. The relationship between Indigenous activities and biodiversity lacks sufficient study and public awareness. Conservation in Canada requires a full understanding and recognition of Indigenous governance and wise practices.
6. Most data on the status and trends of Canada's biodiversity remain fragmented and scattered across institutions and libraries. The wealth of information hidden in unstructured biodiversity datasets has not been effectively translated into decision-making. Digital technologies have the potential to fill some of these gaps.

7. Biodiversity research at species level remains prevalent in Canada compared with studies at other levels (e.g., genetic, ecosystem, functional and biocultural diversity), which are equally important. This imbalanced structure of knowledge on the different levels of biodiversity may mislead conservation policies and requires caution.
8. The matching of pressures on biodiversity at various scales to the corresponding countermeasures for different stakeholders are intricate and obscure, leaving a challenge for identifying systemic solutions. Social science and citizen science can help tease out the social barriers and inform system transformation.
9. Cultural and philosophical barriers for developing integrated biodiversity conservation pathways persist. Embodied learning and other innovative disruptions led by Indigenous knowledge holders can foster value transformation and social norms formation which are necessary for green transformation.

Policy implications

1. Enhance research and increase political attention to address consumptive impacts on biodiversity loss. Reframe a virtuous pattern of consumption with environmental accounting and social marketing.
2. Decolonize conservation frameworks by recognizing Indigenous rights and leadership in biodiversity and conservation. Provide space and resources for weaving together different knowledge systems, including enhancing awareness and respect on wise practices and Indigenous languages.
3. Encourage interdisciplinary research and capacity building to identify, clarify and communicate socio-economic, cultural and spiritual values of biodiversity. Transform prevailing development models through value-led conservation and biocultural approaches. Embrace innovative tools and mechanisms for behavior changes at community and individual levels.
4. Improve regulation and legal frameworks to enhance transparency in the monitoring capacity and accountability of extractive industries. Develop high-quality inventory databases for biodiversity at multiple scales. Apply standardized indicators to support evidence-based policy-making.
5. Employ effective economic levers to retrofit extractive/polluting industries. Redirect and scale up public and private investments for ecosystem and biodiversity. Uncover financial incentives for long-term well-being of nature and society.
6. Facilitate cross-scale collaboration on biodiversity conservation and sustainable development. Maintain a multi-partner network for environmental awareness-raising and coordinated actions with the support of media workers, social activists, digital experts and others.

Further information

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