



BEYOND TARGETS:

A PATHWAY FOR PROTECTED AREAS TO HELP MEET
BIODIVERSITY AND CLIMATE GOALS IN AN ETHICAL
AND RIGHTS-DRIVEN WAY



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Beyond targets: A pathway for protected areas to help meet biodiversity and climate goals in an ethical and rights-driven way could not have been developed without the expertise, analytical skills and contributions of several individuals.

Jessica Currie, Chris Liang, Will Merritt and James Snider led the analysis as part of WWF-Canada's Science, Knowledge and Innovation team, harnessing the power of GIS and Tableau for data visualization. We're grateful to Nadina Gardiner, Steven Nitah, Jimmy Ullikatalik, and Stephanie Thorassie for their time, contributions and perspectives.

Core principals and conceptual design were contributed by Hussein Alidina, Colin Anderson, Angèle Blasutti, Antonio Iacobelli, Kevin Kavanagh, Reed Noss and Stan Rowe during the formulation of a protected areas gap analysis tool which was developed for WWF-Canada's Endangered Spaces campaign, which concluded in 2000.

WWF-Canada. 2022. *Beyond targets: A pathway for protected areas to help meet biodiversity and climate goals in an ethical and rights-driven way*. Currie J, Liang C, Merritt W, and Snider J. *WWF-Canada*. Toronto, Ontario.

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A MESSAGE FROM MEGAN LESLIE

Wildlife and nature are at risk in Canada. Habitat loss and climate change have driven the decline of populations of at-risk vertebrate species by an average of 59 per cent since 1970. Even those protected under Canada's Species at Risk Act are failing to recover. This is because wildlife can't survive without healthy, intact and connected landscapes where they can find food, migrate, mate and raise their young.

And while Canada has set an ambitious goal to protect 30 per cent of its land and freshwater by 2030 to match international efforts, it's no longer just about setting aside places on a map. We have to protect the right places. Equally important is that these places are protected for the right reasons, and in the right way.

These areas are vital, resilient habitats that allow wildlife to thrive; they're carbon-rich ecosystems that are keeping billions of tonnes of carbon stored in plants and soils. Our *Beyond Targets* assessment brings us a step closer to determining priority places for protected and conserved area establishment by identifying areas that would provide maximum benefit to both biodiversity loss and climate change. But it's one piece of a much bigger puzzle. The value of protected and conserved areas cannot be measured by this alone.

We know that some of the most effective stewardship of nature in Canada has been led by Indigenous communities, and our *Beyond Targets* assessment shows that a high number of intact, high-value landscapes sit within Indigenous territories. Historically, the model for protected area establishment rarely considered Indigenous knowledge systems, and at worst, ignored the impact on the livelihood and disruption of Indigenous peoples. For conservation to be equitable and just, we need redefine the approach to respect the rights and priorities of Indigenous communities.

In this report, the findings of our *Beyond Targets* assessment are presented alongside interviews with four Indigenous conservation leaders who shared their expertise working to protect important places across the country.

These perspectives are paramount as Canada works toward its commitment to halt and reverse nature loss by 2030, and build a nature positive and climate resilient future for all.

Megan Leslie
President and CEO
WWF-Canada

A BRIEF OVERVIEW

As part of an international commitment —the High Ambition Coalition for Nature and People — Canada has set an ambitious goal to protect 30 per cent of its land and freshwater, as well as its oceans, by 2030 (30 x 30). To date, only 13.5 per cent of terrestrial and freshwater ecosystems have received formal protection. But reaching 30 x 30 is about more than simply doubling the current coverage of protected areas in Canada. We need to focus efforts on protecting new areas to ensure they address climate change and biodiversity loss while prioritizing Indigenous knowledge and advancing Indigenous rights.

This requires an evolution in Canada’s approach to protected area establishment. Historically, the establishment of protected areas have resulted in islands of conservation in marginal lands, at times without consideration to connectivity, ecological representation, the potential to store carbon, and the impact on the livelihood and disruption of Indigenous peoples. A plan for longstanding maintenance and stewardship of these lands — the burden of which disproportionately lands on Indigenous communities — has also often been overlooked.

A new approach is urgently needed if we are going to advance reconciliation and achieve our climate and biodiversity goals — one that respects the rights and priorities of Indigenous communities and protects the right areas, for the right reasons, and in the right way.

Our analysis focused on terrestrial and freshwater ecosystems, and identifies areas and networks of high conservation value for both biodiversity and climate. Because climate change poses an increasingly high threat to wildlife, we refer to the need for creating a highly effective protected areas network — one that allows wildlife to move freely and provides climate refuges, which will enable wildlife to adapt to a changing climate. Since Canada contains 327 billion tonnes of carbon in its plants and soils, it also means protecting these large carbon stocks from disruption to help mitigate climate change.

To figure out where these areas are, WWF-Canada used the latest data on existing protected and conserved areas across the country (established as of 2020) to conduct a gap analysis and identify holes in our existing protected areas network. Our analysis took into account whether existing protected areas were large and had good coverage (e.g., many protected areas concentrated in one region) and were connected to one another, in addition to investigating important elements of the quality of those areas, such as whether they were intact and represented diverse elevations and shorelines. This is important because a well-designed protected areas network should contain a diversity of ecosystem types, with protected areas having sufficient coverage to allow wildlife to thrive.

We also determined the relative priority for establishing protection in these areas by considering four factors: climate resiliency, ecological connectivity, where species at risk are located, and how much carbon is stored in a given area. The result is a map that gets us one step closer to identifying areas that can help us reach 30 percent protection by 2030 while also meeting carbon and biodiversity goals.

The map, however, is one piece of a bigger puzzle. The value of protected and conserved areas cannot be measured by it alone. We know that some of the most effective stewardship of nature in Canada has been led by Indigenous communities. For conservation to be equitable and just, Indigenous Protected and Conserved Areas must be prioritized above all, and established in a way that advances Indigenous rights and title.

For this reason, we are presenting the findings of this analysis alongside perspectives of four Indigenous leaders across the country, who share their experiences as caretakers of the land, and detail how IPCAs can be a pathway to reconciliation. This “two-eyed seeing” approach is paramount to protected area establishment in the future, as Canada works toward its commitment to halt and reverse nature loss by 2030 and build a resilient nature for all.

NATURE-BASED CLIMATE SOLUTIONS

Nature is in crisis. Damaged habitats, widespread loss of species,^{1,2} and accelerating climate change³ are wreaking havoc upon the many ecological services that healthy, resilient ecosystems provide. While many different approaches are needed to address environmental crises^{4,5} — such as a rapid reduction in the use of fossil fuels and improved management of natural resources — nature itself provides us with opportunities to address biodiversity loss and climate change simultaneously.^{6,7}

Nature-based climate solutions (NbCS) are approaches that use nature to address environmental emergencies — particularly the threat of biodiversity loss and climate change.⁸ Generally, NbCS encompass the protection, restoration and sustainable management of ecosystems⁹ to both protect and sequester climate-altering carbon, while delivering benefits for biodiversity and human well-being.¹⁰ However, not all NbCS are created equal. Generally, NbCS frameworks suggest that we should first safeguard our remaining wilderness, improve management of our working landscapes, and then restore the damage we have previously done.¹¹ Importantly, NbCS must be implemented alongside rapid decarbonization of the global economy to be truly effective.

Support by Indigenous nations is crucial for the successful implementation of effective NbCS in Canada. Indigenous Peoples have respectfully and successfully stewarded land for millennia. Their generational knowledge, holistic approaches and respect for nature are unparalleled. The leadership and sovereignty of Indigenous Peoples must be the foundation of advancing nature-based climate solutions in Canada. Conservation approaches must uphold the United Nations Declaration on the Rights of Indigenous Peoples as well as the principle of Free, Prior and Informed Consent, and support efforts that advance Indigenous governance, knowledge and self-determination — aligning with recommendations from the Indigenous Circle of Experts.

Terrestrial protected and conserved areas in Canada

Protected and conserved areas are a cornerstone of wildlife conservation. They include a variety of management regimes and types, such as national parks, wildlife refuges and Indigenous Protected and Conserved Areas (IPCAs) — one term of many that are used to describe areas that are actively being protected and stewarded by Indigenous communities. More recently, the value of protected and conserved areas in simultaneously mitigating and adapting to climate change has been amplified through the framing of NbCS, particularly as land use and land use change are a primary driver of global biodiversity loss¹² and land-based greenhouse gas emissions.¹³ Consequently, if effectively established and appropriately managed, protected and conserved areas can prevent further declines in biodiversity, while safeguarding critical carbon sinks and stores. These areas can also help to maintain habitats that are more resilient to environmental impacts and provide necessary buffers for climate adaptation.

Canada boasts more than seven million square kilometres of the world's remaining intact areas,^{14,15} with large swaths of climate-essential habitats particularly located in the North.¹⁶ Canada thus holds a disproportionate global responsibility and opportunity to protect and sustainably manage its landscapes. Without intervention, these intact ecosystems are vulnerable to degradation and disruption from major human and industrial stressors and associated impacts.



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Indigenous-led conservation

To achieve effective conservation of ecosystem carbon and wildlife in Canada, we need to recognize lessons and leadership from Indigenous Peoples, who have successfully stewarded lands in healthy and resilient ways. Indigenous-led conservation requires recognition and resolution of land rights, in addition to financial resources to enable sustainable conservation-based economies. IPCAs, specifically, have emerged as a means for Indigenous Peoples to enshrine their sovereignty and governance over the lands they have stewarded since time immemorial. IPCAs comprise “lands and waters where Indigenous governments have the primary role in protecting and conserving ecosystems through Indigenous laws, governance and knowledge systems.”¹⁷

“An Indigenous Protected and Conserved Area is an area that is protected primarily by Indigenous people through our laws, governance and knowledge systems – and it makes sense to have Indigenous people in this role because we have repeatedly proven to be the best caretakers of nature.”

**Steven Nitah,
Łutsël K'é Dene First Nation**



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It's important to note that this report is, in part, driven by metrics, but in order for a protected areas network to be successful, it must be co-developed and implemented with Indigenous consent, recognizing the rights and title of the lands on which such actions are taken. Our report highlights four of the many Indigenous-led conservation efforts underway across Canada and showcases how Indigenous voices and perspectives can come together with “Western” science-based conservation planning to contribute to a more holistic approach to conservation. Our hope is that presenting these two perspectives side by side will illustrate how, in some cases, systematic conservation planning can support Indigenous-led conservation and, conversely, how Indigenous efforts may sometimes supersede Western approaches. All conservation strategies should empower Indigenous Peoples and ensure that Indigenous rights are respected, protected and advanced throughout the process.

Indigenous people know how to have a healthy relationship with nature and biodiversity. What's lacking now in many conservation efforts is the fact that the relationship between nature and people overwhelmingly doesn't exist. It doesn't represent the spirit of the animals, the spirit of the plants and all the interconnectedness that's celebrated by Indigenous people and their relationships with place.

Indigenous Protected and Conserved Areas (IPCAs) are the only hope we have. If Canada wants to achieve its commitment to protect biodiversity, by conserving 30 per cent of land and inland waters and marine and coastal areas by 2030, it needs Indigenous involvement. If Canada wants to achieve reconciliation — whether that's land reconciliation, financial reconciliation, cultural reconciliation or knowledge reconciliation — and some semblance of land back, Indigenous people need to be involved.

IPCAs represent a continuation of the longstanding relationship between Indigenous people and nature. Continually we have proven to be the best caretakers of nature. Canada and other governments need to invest in what works. Give the financial resources to Indigenous people and give them the authority to utilize their ways of knowing and doing to manage people in these spaces.



Steven Nitah
Łutsël K'é Dene First Nation

Targets for protection

The Government of Canada recognizes the value of protected and conserved areas for achieving environmental goals and has recently committed to safeguarding 25 per cent of land and freshwater by 2025 as an interim national target to protecting 30 per cent by 2030. These targets align with the 2030 targets under the first draft of the Post-2020 Global Biodiversity Framework¹⁸ as well as commitments by other countries made under the High Ambition Coalition for Nature and People, though scientists are advocating for even greater goals.¹⁹ As of 2021, 13.5 per cent of Canada's land and freshwater have been conserved through both formal protected areas (1,254,278 km²) and Other Effective Conservation Measures (OECMs; 90,789 km²),²⁰ falling short of the previous 17 per cent target set for 2020. Consequently, the government's heightened ambition must be complemented by rapid action to effectively deliver meaningful achievements for biodiversity and climate.

While quantitative targets are necessary for garnering action and developing indicators to track progress toward conservation goals, they alone are insufficient to wholly conserve biodiversity and mitigate and adapt to climate change. The qualitative aspects of protected and conserved area establishment and management are equally important. A well-designed protected areas network that is climate resilient and safeguards essential habitats for species on the brink of extinction is necessary for effectively combating environmental emergencies.

Past targets and approaches

In alignment with the Aichi Biodiversity Targets adopted under the Convention on Biological Diversity (CBD),²¹ the government of Canada adopted a suite of national targets to contribute to global goals of safeguarding and recovering nature.²² Canada Target 1 (based on Aichi Target 11 of the CBD) focused on protecting 17 per cent of land and freshwater in Canada by 2020. A National Advisory Panel and an Indigenous Circle of Experts were formed shortly after the adoption of the Canadian biodiversity targets via the Pathway to Target 1 initiative. These groups provided advice and recommendations on effectively, collaboratively and respectfully achieving the Canada 1 Target.^{23,24}

A protected areas network that benefits biodiversity and climate

A highly effective protected areas network is critical to effectively deliver on biodiversity and climate goals. To date, biases in establishment²⁵ and the limited size and connectivity of current protected areas²⁶ have impacted their effectiveness as a tool for resilient conservation on a global scale — though recently there has been advocacy for integrating multiple conservation values to inform national-scale conservation planning.^{27,28} When establishing new protected areas, regions identified by Indigenous Peoples for conservation should be prioritized above all, and established in a way that advances Indigenous rights and title. In addition, a protected areas network should consider and incorporate concepts of representative ecosystems, connectivity, climate resiliency, biodiversity, carbon storage, among other considerations (e.g., Key Biodiversity Areas) — elements that have been incorporated in the first draft of the United Nations Convention of Biological Diversity (CBD) Post-2020 Global Biodiversity Framework, and which were identified as emerging considerations for protected and conserved areas in Canada.²⁹ By considering key environmental and societal values when establishing protected areas, we can ensure that our protected areas network delivers multiple co-benefits, including climate change mitigation and adaptation.

Our analysis evaluates the ecological representation of Canada's current protected areas network and, by incorporating key biodiversity and climate values, identifies key regions where future consideration of protected areas could help Canada effectively deliver upon multiple environmental goals.

Ecological Representation: Ecological representation is based on the principle that the full range of biodiversity should be included within a protected areas network by protecting a diversity of ecosystems and habitats, maintaining populations of native species, and ensuring the continuation of ecological and evolutionary processes. In our study, ecological representation of Canada's protected areas network is evaluated against a set of developed criteria that incorporates elements of size, quality and connectivity.

Enduring Features: Enduring features are defined by physical habitat components that are anticipated to persist through time. These features account for the regional geology and topography of a region — essentially the abiotic (or non-living features) that make up a habitat. Enduring features are the unit of analysis used in our assessment of ecological representation for Canada's protected areas network.

Ecological Representation

Ecological representation of Canada's current protected areas network is evaluated using three criteria, comprising six sub-criteria

SIZE



Protected area size

Large and continuous protected areas are key to ensuring that natural ecosystems are adequately protected.



Protected area coverage

A diversity of ecosystems need to be captured in order to achieve sufficient protection. This could come in the form of a single, large protected area or numerous small areas.

QUALITY



Shoreline

Protected areas should not stop at the shoreline. The density of the shoreline and riparian areas should be adequately represented within the protected areas network.



Environmental gradients

Different elevations provide different habitats, values, climates and ecosystem services — all of which should be adequately represented within the protected areas network.

CONNECTIVITY



Adjacent protected areas

A network of protected areas is enhanced through connectivity. A more connected network facilitates movement between habitats.



Intactness

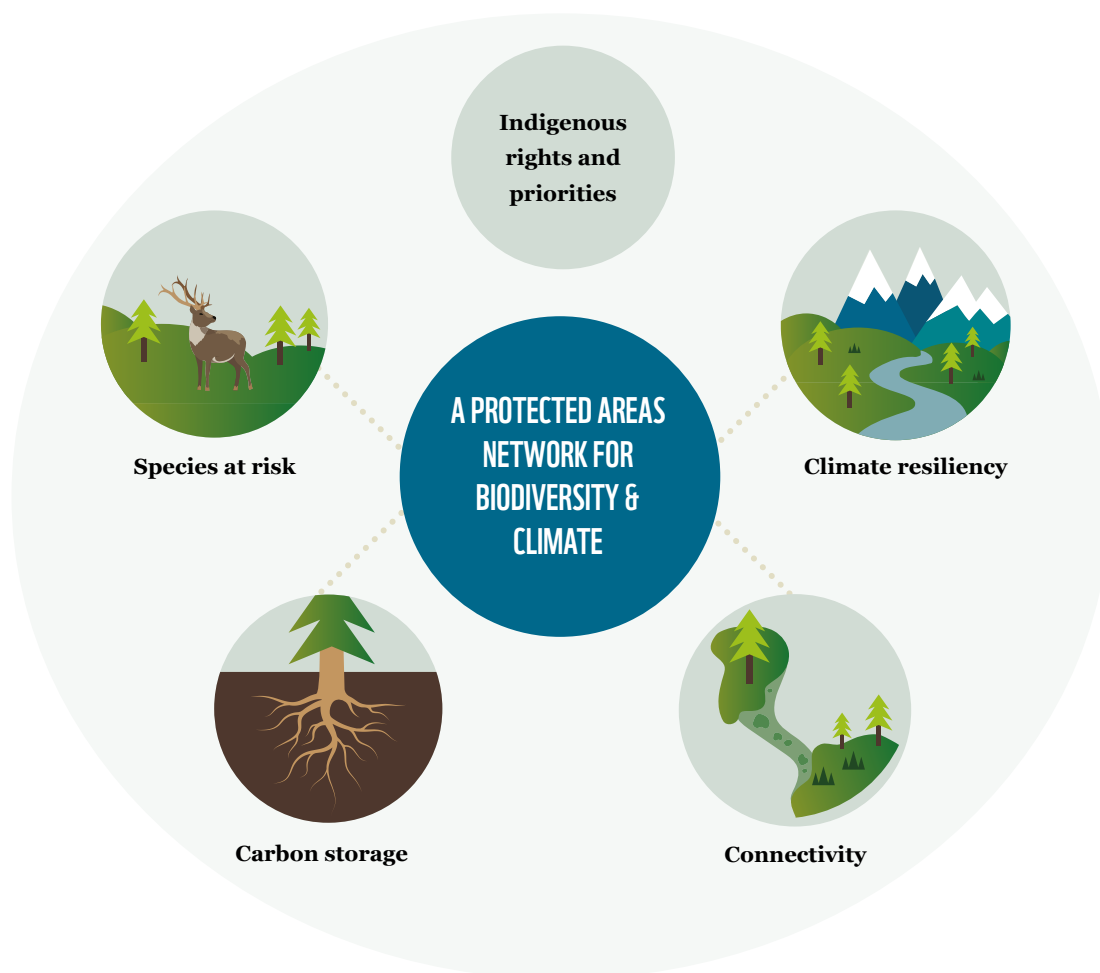
Roads and developments carve up important habitats and cause fragmentation. High quality protected areas have high levels of intactness.

Calculating ecological representation

Ecological representation was calculated by integrating the components of size (i.e., protected area size and coverage), quality (i.e., shoreline, environmental gradients and intactness), and connectivity (i.e., adjacent protected areas). The median score of the three overarching criteria was taken as the overall ecological representation score for each enduring feature.



AN ETHICAL AND RIGHTS-DRIVEN PROTECTED AREAS NETWORK FOR BIODIVERSITY AND CLIMATE



Indigenous rights and priorities

First and foremost, protected areas must be co-developed and implemented with Indigenous consent, recognizing the rights and title of the lands on which such actions are taken. Indigenous knowledge systems, leadership and stewardship must be respected and elevated in the creation of new areas, recognizing that self-determination and self-governance are critical aspects of reconciliation through conservation.

Species at risk

Protected areas are particularly important for species at risk of extinction because they protect the habitat they rely on from degradation, conversion to human-dominated landscapes and fragmentation. New protected areas should provide habitat for these species and prioritize species diversity (i.e., a large number of species within the given habitat). In Canada, species at risk often overlap with areas of high human footprint in the southern part of the country because this is where threats are highest.

Carbon storage

Terrestrial ecosystems store billions of tonnes of carbon in plants and soils, and on average, carbon density in Canada is highest in soils — particularly peatlands, many of which are found on territories of Indigenous communities that have been stewarded over millennia. Habitats with large carbon stocks should be prioritized for protection to ensure that carbon remains locked in nature, rather than risking release to the atmosphere.

Climate resiliency

Climate change is already impacting ecosystems and wildlife in Canada. In order for Canada's protected areas network to remain resilient — essentially, to better withstand future climatic changes — we must ensure that climate corridors (connections between current climatic conditions and where those conditions are predicted under future scenarios) and refuges (areas with unique climate conditions that are anticipated to remain relatively stable despite future climate change) are protected.

Connectivity

Habitat loss, including the fragmentation of intact habitats, is a major driver of species loss. As a result, protected areas must be connected to facilitate wildlife movement, particularly as climate change worsens, so that species are able to migrate and disperse to new areas.

KEY FINDINGS

Evaluating the ecological representation of Canada’s current protected areas network

Our analysis unveiled regions of Canada that are well protected, but many more that lack adequate safeguards. For instance, 34 per cent of enduring features remain completely unprotected as of 2021 —meaning that there are currently no protected and/or conserved areas established within these areas (Figure 1). In addition, another 33 per cent have inadequate representation within Canada’s protected areas network, suggesting that the protected areas that are established are small, disconnected and/or do not represent diverse habitats.

In terms of ecological representation, the territories remain relatively unprotected compared to areas in the southern portion of the country (as assessed using protected area boundaries that have been officially recognized by the Government of Canada). Though several large new conservation areas have been established in the territories in recent years, which enhances the proportion of the territories that are protected,³⁰ there is a greater proportion (and total area) of unprotected enduring features in the territories compared to the provinces. This provides an opportunity to advance community-led conservation projects to enhance the ecological representation of protected areas in the North. In fact, many sites have been identified as potential opportunities for nature protection³¹ — enough that each of the three territories would surpass the 30 per cent protection goal. Opportunities span a variety of sizes and approaches including, for example, the Nunavut Land Use Plan — the largest land use plan in the world, and Aviqtuuq, which is a terrestrial and marine IPCA proposed by Taloyoak, the northernmost community on the mainland in Canada.

**Ecological Representation of
Canada’s Protected Areas Network**

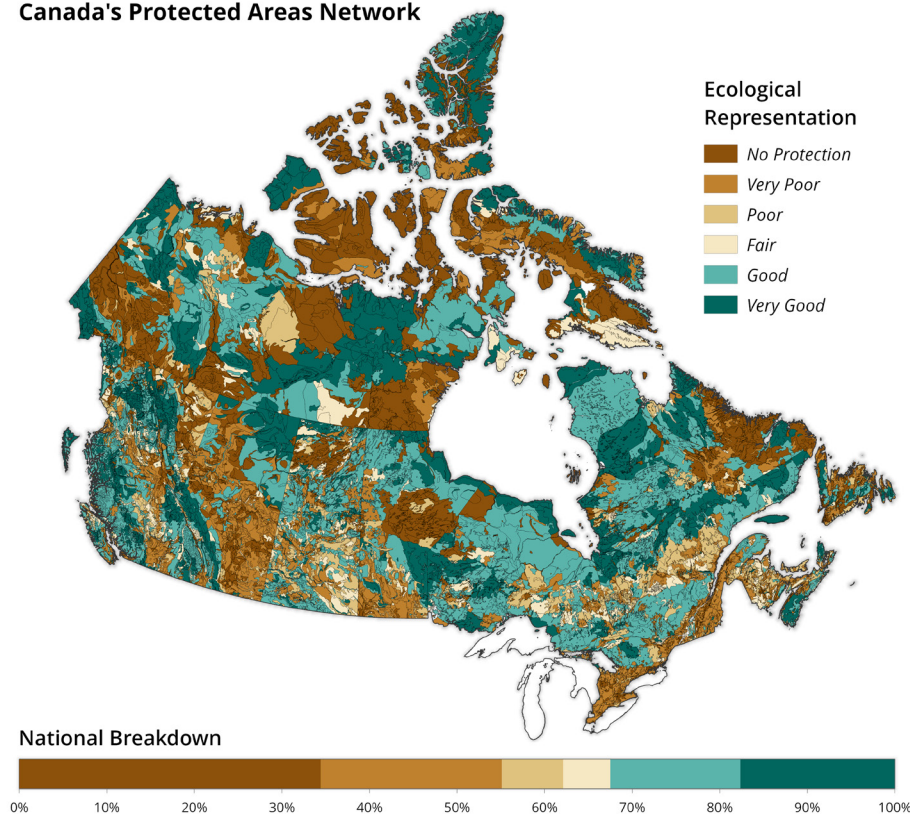


Figure 1. Ecological representation of Canada’s current protected and conserved areas network. Adequate protections encompass scores of “Good” and “Very Good,” while inadequate scores range from “Very Poor” to “Fair.” No Protection indicates that there are currently no protected or conserved areas found within the enduring feature.

Protected areas in the territories have generally been established to be sufficiently large, provide adequate coverage of habitats and represent diverse habitat characteristics. Still, a greater proportion (57 per cent) and area (150 million hectares) of habitats remain unprotected (Figure 2). In contrast, the provinces have more variability, as shown by the greater spectrum of ecological representation — ranging from no protection (30 per cent) to very good ecological representation (17 per cent).

Comparing Ecological Representation in North and South Canada

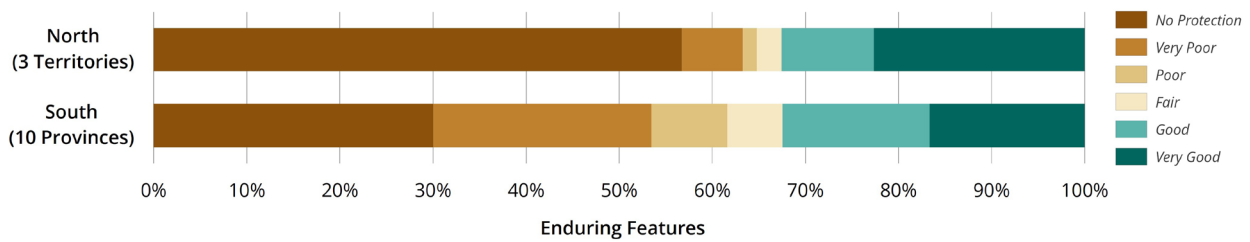


Figure 2. Comparing the ecological representation of Canada’s protected and conserved areas network in the North (three territories) and the South (10 provinces).

The generalization of the north-south divide provides interesting insights into the spatial prioritization of nature-based climate solutions in Canada. In particular, Canada’s human footprint is predominantly prevalent in the South,³² where land use and land-use change are driving wildlife population declines³³ as well as land-based greenhouse gas emissions.³⁴ Consequently, there are fewer natural areas remaining in the South as compared to more northern jurisdictions.

Restoring Canada’s converted landscapes

We found that there are sufficient natural, intact ecosystems in the North to achieve adequate scores of ecological representation of Canada’s protected areas network (Figure 3), should additional protected areas be established. However, given our large human footprint in the South, our analysis suggests that some regions will require substantial ecological restoration to increase healthy habitats and make adequate protection possible (see Supplementary Material). In these areas, ecological restoration should be implemented alongside protection to effectively deliver long-term benefits for wildlife and climate. Consequently, a more holistic and complimentary approach to conservation is needed to maximize benefits across landscapes.

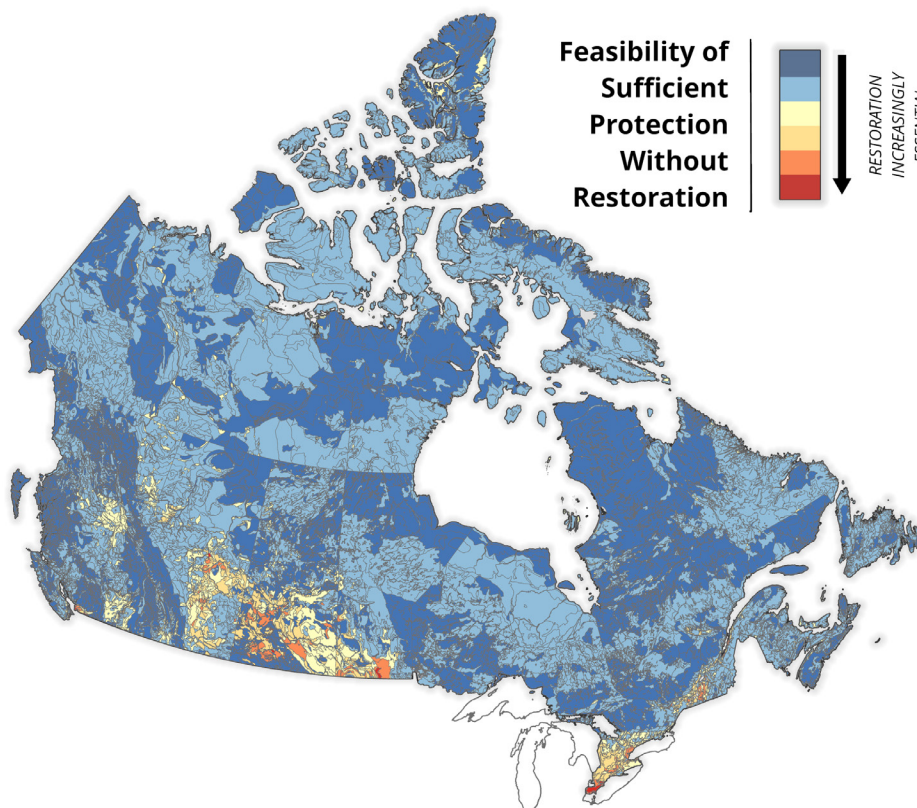
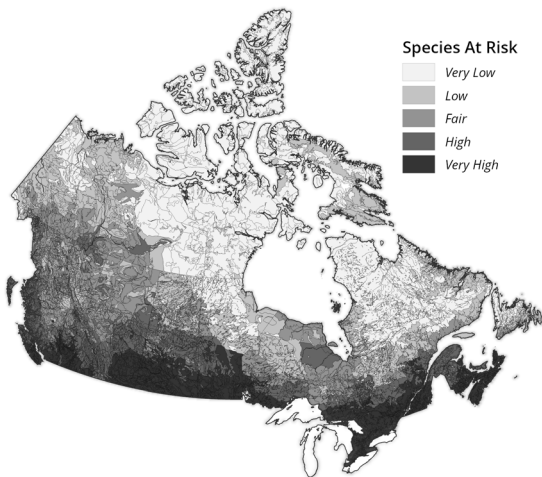


Figure 3. Assessment of the proportion of remaining natural habitat within each enduring feature, relative to the area needed for adequate protection within the analysis.

Key considerations for a protected areas network that benefits biodiversity and climate

Many different values can and should be considered when developing a national protected areas network. We focused our analysis on developing a protected areas network that would help to effectively deliver nature-based climate solutions in Canada using spatial data that was available at a national scale. Our analysis incorporated concentrations of species at risk, carbon storage, climate resiliency and ecological connectivity. However, other key considerations should also be acknowledged and incorporated, where information permits, including prioritizing the protection of ecosystem services³⁵ and Key Biodiversity Areas — the identification of which are now underway in Canada.

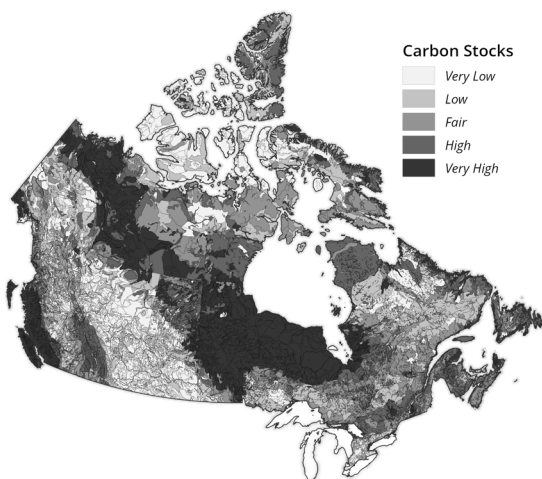


Species at Risk

In Canada, species at risk follow a north-to-south gradient, with hotspots of species at risk of extinction overlapping with areas of high human footprint,³⁶ or areas characterized by intensive land use for agriculture and development.³⁷⁻³⁸ Consequently, a competition for space may be impacting biodiversity along Canada's southern border.

In addition, species richness gradients are often strongly correlated to climate,³⁹ and many species reach their north range limits along the southern periphery of Canada.⁴⁰

Recent research has shown that vertebrate biodiversity on Indigenous-managed lands in Canada is more species rich than in protected areas, and that Indigenous-managed lands support more threatened wildlife.⁴¹ Support for, and advancement of, Indigenous leadership in this space will be critical for effectively safeguarding wildlife.



Carbon Stocks

Terrestrial ecosystems store carbon in plants and soils, though their contribution to climate change mitigation is not equal. On average, carbon density in Canada is highest in soils, particularly peatlands.⁴² Consequently, patterns in carbon stocks generally align with peatland extent in Canada. Canada has an estimated 1.1 million km² of peatlands — about 12 per cent of the country and second in size only to Russia.⁴³

Understanding the spatial distribution of carbon stores across the country can help with their protection, especially because some of the most significant carbon stores in the world are found in Canada and are located on the territories of Indigenous Nations. This underscores the importance of working with Indigenous communities and advocating for the creation of more IPCAs in which Indigenous communities lead stewardship of the land, which provide opportunities for food security, sustainable harvests and economic development.

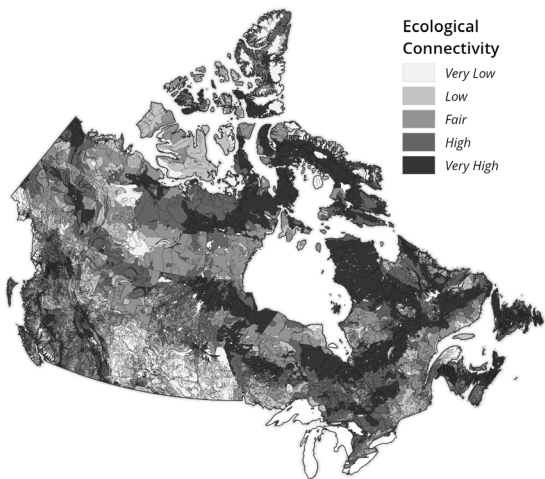
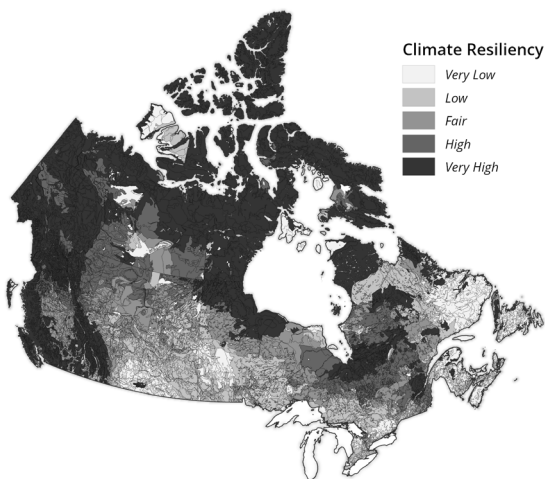
Climate Resiliency

Ecosystems' vulnerability to climate change underscores the need for building a resilient protected areas network. As climate change progresses, we must design our protected areas network to ensure it will remain beneficial for wildlife into the future and provide a necessary buffer for climate adaptation. The climate resiliency lens incorporates both climate refuges and climate connectivity.

Climate refuges: Areas with unique climate conditions that are anticipated to remain relatively stable despite future climate change. These areas are projected to have increasingly rare climatic conditions and are therefore a priority for protection, as species concentrations may be higher in these regions in the future.⁴⁴ Climate refuges are generally found in high elevations or areas with complex topography.

Climate connectivity: Represents the distribution of ideal corridors between current climate types and the location of those climates under future climate change.⁴⁵

Protecting these regions now will be critical as wildlife move, seeking out ideal climate conditions under a warming climate.



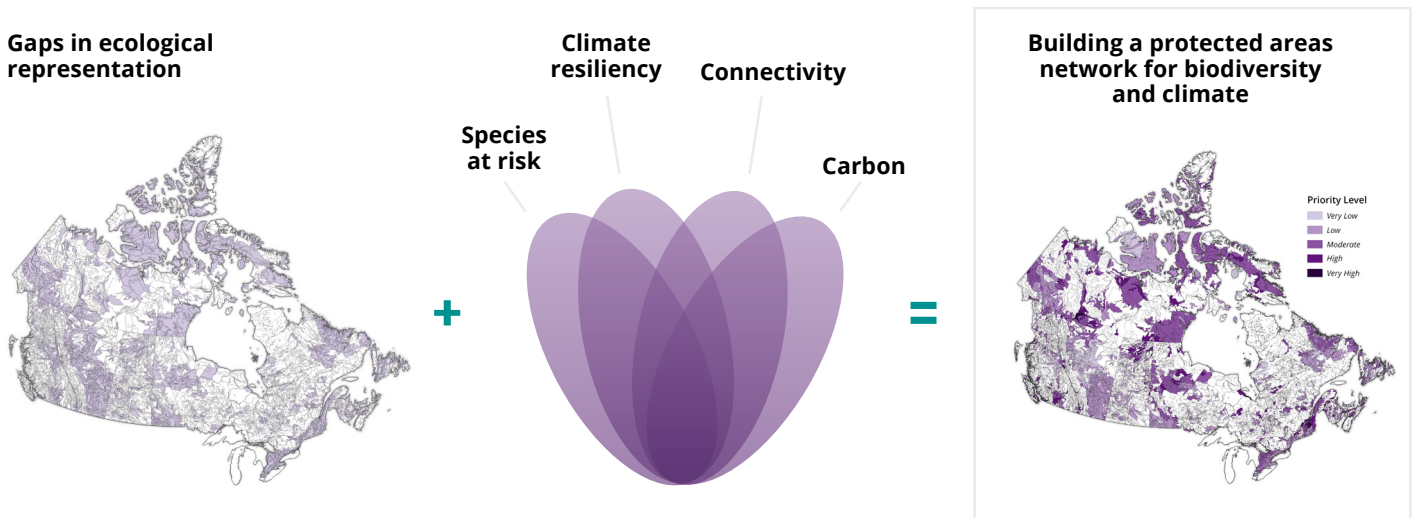
Ecological Connectivity

Land use and land-use change (i.e., habitat loss) is a major driver of species loss^{46 47 48} and its effects can be further intensified when remaining habitat is fragmented and separated by barriers that restrict wildlife movement.⁴⁹ While protected areas help to safeguard wildlife habitat, healthy corridors are also necessary to facilitate wildlife movement, which is important for maintaining a flow of species, genes and ecosystem functioning.⁵⁰ This is particularly true as climate change progresses.



Safeguarding Canada's remaining intact areas in an era of climate change

Priorities for protected area establishment through the lens of NbCS were identified by selecting for gaps in ecological representation (i.e., scores of no protection or very poor protection) and incorporating key conservation values (i.e., species at risk, carbon, ecological connectivity and climate resiliency).



The territories have the greatest proportion of enduring features (and total area) that completely lack protection. Consequently, when identifying key areas for the establishment of new protected and conserved areas, the territories remain a priority (Figure 4). These areas face a disproportionate need for protection to ensure that they can provide a critical haven for wildlife in the era of climate change. Approximately 29 per cent of enduring features in the North are considered to be of moderate to high priority for the establishment of new protected and conserved areas, compared to 14 per cent of enduring features in the South (Figure 5). In terms of total area, 119 million hectares in the North are of moderate to high priority, compared to 71 million hectares in the South. Working alongside northern communities to safeguard these regions will be particularly critical for protecting large carbon stocks and maintaining climate resiliency of Canada's protected areas network.

While protected areas serve as nature-based climate solutions, they are simultaneously vulnerable to the impacts of climate change — a catch 22 that is particularly relevant in Canada's North, which is warming at three times the global average.⁵¹ Effective planning and sustainable management of protected areas under climate change will help to protect key ecosystem features and processes as landscapes adapt to a changing climate. Conserving, restoring and connecting protected areas enhances the resiliency of the network and is critical for delivering co-benefits, such as climate adaptation.



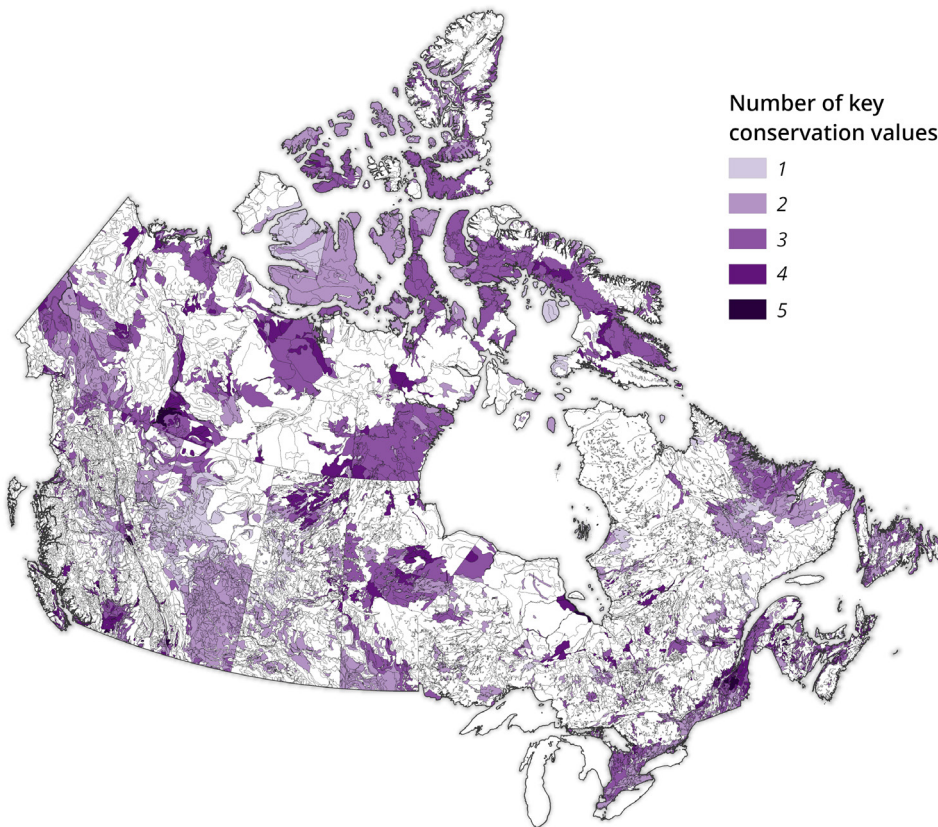


Figure 4. All coloured areas have been identified as gaps in Canada’s protected areas network, and are therefore considered near-term priorities, with the colour gradient depicting the relative priority, dependent upon the number of overlapping key conservation values. Importantly, any IPCA should be given priority for protected status.

It’s important to note that protected and conserved areas will need to be established in all provinces and territories to effectively develop an ecologically representative protected areas network. To get there, all regions and levels of government have a role to play in achieving the federal goal of conserving 30 per cent of Canada’s terrestrial and freshwater by 2030.

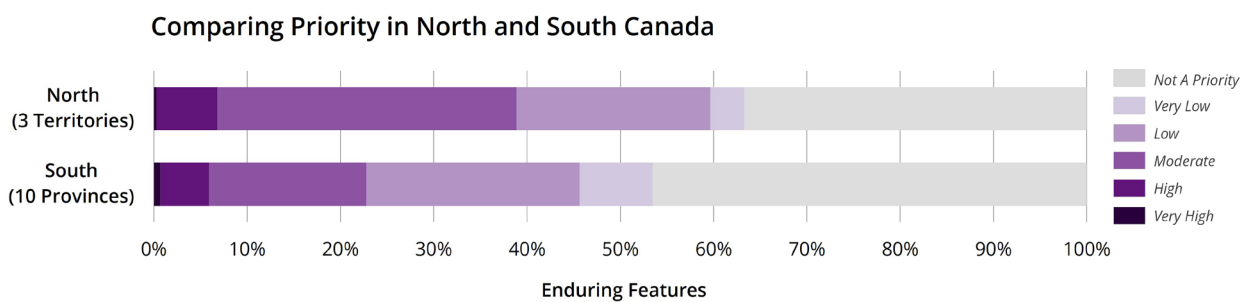


Figure 5. Comparing national priorities for protected area establishment in Canada in the North (three territories) and the South (10 provinces).

While this report provides recommendations for action based on metrics associated with wildlife and climate, conservation can’t be entirely metric driven. To be successful, protected and conserved areas must be co-developed and implemented with Indigenous consent, recognizing and supporting the rights and title of the lands on which such actions are taken.

INDIGENOUS PROTECTED AND CONSERVED AREAS

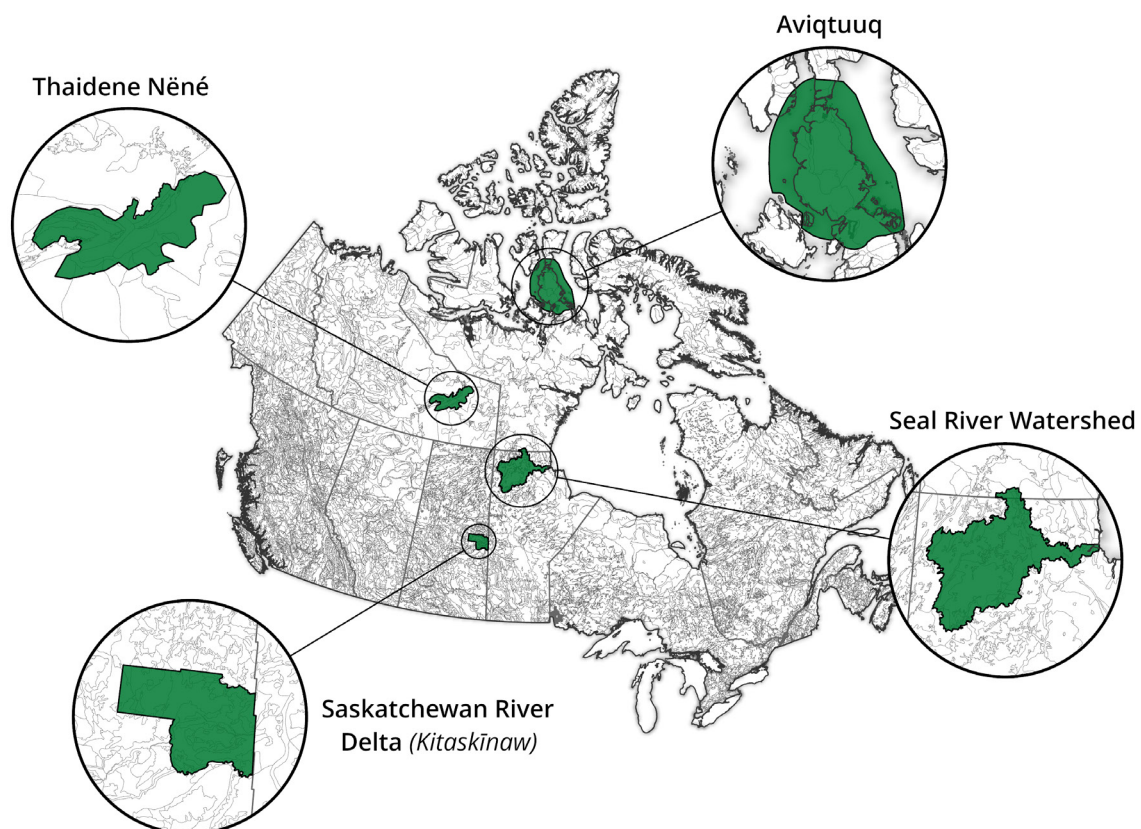
The effective establishment of a protected areas network for Canada requires a more holistic approach that upholds the principles of nature-based climate solutions, including measurable benefits for biodiversity, and Indigenous Peoples and local communities.⁵² While this report provides a framework on which to act, conservation can't be entirely metric driven. To be successful, NbCS must be co-developed and implemented with Indigenous consent, recognizing the rights and title of the lands on which such actions are taken. Critically, not only does the success of NbCS hinge upon their ethical and equitable implementation, but implementation of NbCS in the absence of appropriate engagement can negatively impact Indigenous Peoples e.g., through the disruption of cultural and economic well-being, and other negative impacts), some of whom are already more vulnerable to the impacts of climate change. Recent research has amplified the effective stewardship of biodiversity on Indigenous lands, where biodiversity on Indigenous-managed lands is higher than protected areas in Canada.⁵³

One effective approach is to elevate the importance, number and sovereignty of IPCAs in Canada. IPCAs include a variety of land protection initiatives including Tribal Parks and Indigenous Cultural Landscapes. While IPCAs vary with respect to their governance approaches and management objectives, they generally comprise three key components: they are Indigenous-led; represent a long-term commitment to conservation; and elevate Indigenous rights and responsibilities.

IPCAs can also enable sustainable, conservation-based Indigenous economies, which are important for contributing to, and diversifying, local economies and investments — in contrast to non-renewable resource industries, which result in boom-and-bust economic cycles. Consequently, establishment and long-term investment in the management of IPCAs can support a just transition to a more sustainable future — economically, environmentally and culturally.

Under Canada's Pathway to Target 1 initiative, the Indigenous Circle of Experts made 28 recommendations showing how federal, provincial, territorial and Indigenous governments can collaboratively deliver upon national and international protected areas targets.⁵⁴ The recommendations are vast, incorporating elements of reconciliation, holistic and integrated approaches to stewardship, capacity building, long-term funding, and implementation, among others. These recommendations provide invaluable insights into how protected areas should be established and managed in Canada.

There are a growing number of existing and proposed IPCAs across Canada. Below, we highlight a selection, sharing the results of our analysis alongside interviews with Indigenous conservation leaders who share their experiences working to protect these important places.



Thaidene Nënë

Thaidene Nënë, which translates to “Land of the Ancestors” in Dënesųliné Yati is an IPCA spanning more than 26,000 km² in the Northwest Territories. It lies at the transition between the boreal forest and the tundra and includes the east arm of Great Slave Lake, North America’s deepest freshwater source. Thaidene Nënë is home to a variety of wildlife including bears, wolves and moose. Designated as an IPCA in 2019 by the Łutsël K’é Dene First Nation under Dene Law, and through establishment agreements with Parks Canada and the Government of the Northwest Territories, the IPCA comprises a national park reserve (14,305 km²), a territorial protected area (8,906 km²) and a wildlife conservation area (3,165 km²) — each with its own set of laws. The IPCA is co-managed by Indigenous and Crown governments to conserve the natural and cultural heritage of the region.

Prior to establishment of Thaidene Nënë, enduring features in southeast Northwest Territories largely lacked protection. However, Thaidene Nënë substantially improved the ecological representation scores within the protected area, transitioning from no protection to adequate protection, including scores of “Very Good” where the protected area is situated (Figure 6). Furthermore, the defined boundary of Thaidene Nënë satisfies an “Adequate” ecological representation score across a much broader region beyond the IPCA boundary.

While Thaidene Nënë improves the ecological representation of Canada’s protected areas network, its cultural and societal contributions are of critical importance. For instance, the Łutsël K’é Dene First Nation established a trust fund to support management and operation of the IPCA, in addition to supporting sustainable community livelihoods through local economic development over time.

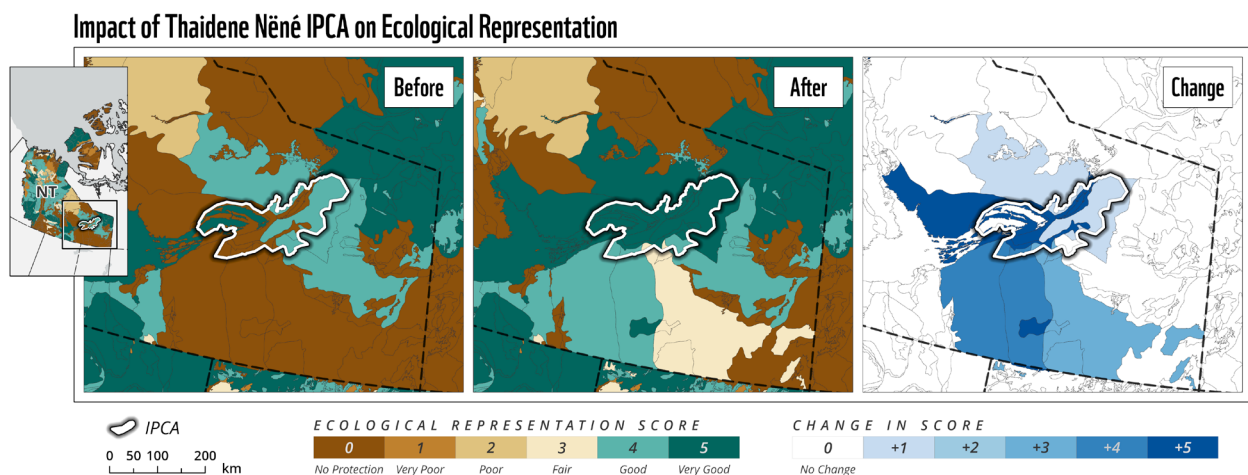


Figure 6. Ecological representation score of Thaidene Nënë. Maps depict (i) the ecological representation before establishment, (ii) the ecological representation score following establishment, and (iii) the resulting change in score.

Steven Nitah, Łutsël K’é Dene First Nation

Growing up I moved around a lot. As a family we’d go with the seasons, following the hunting and gathering cycles. In the summer, we’d be out in the barren lands, hunting caribou, then come the end of August we’d be back in the community drying fish we’d collected for winter. In the fall, we’d go to the boreal to hunt and trap lynx, mink and other fur animals and then when summer came back around it was time to repeat. That’s how the family grew up. These days, it’s different. People are spread out all over the country, but there’s still the homeland to come back to, and it’s a homeland I’m proud to say I help protect. As a member of Łutsël K’é Dene First Nation, I serve as the chief negotiator for the Thaidene Nënë, an Indigenous Protected and Conserved Area (IPCA) here in the Northwest Territories. I, and my community, have always had a deep relationship with the environment, nature and territory that makes up Thaidene Nënë. It’s a relationship that’s interconnected, reciprocal and one that defines who we are as people and the knowledge systems we use.

Protecting Thaidene Nënë

Established in 2019, Thaidene Nënë is in the heart of the Łutsël K’é Dene homeland. It’s over 26,000 square kilometers – an amount of land that’s nothing to sneeze at – and [protected under](#) Łutsël K’é Dene law. But that protection isn’t what you might think – it’s less about managing the territory and more about managing people. The land will do what it wants and it’s our job not to over manage it. Where management on the ground is required, we utilize traditional Indigenous ecological knowledge and place-based knowledge combined with science of today. And while that all sounds well and good – which it is – it wasn’t easy establishing Thaidene Nënë as an IPCA. This is mining territory – [a large part of the economy in the Northwest Territories relies on resource extraction](#). So locking up land of this size was difficult to grapple with for a lot of people, governments and industry.



Thaidene Nënë as an IPCA

IPCAs represent a new relationship between Indigenous governments and the Crown. The mandate that was given was to implement the spirit of intent with which we entered the treaty — to share the land, the benefits of it and the responsibility for its management. We achieved this through an agreement with Parks Canada and the territorial government. The [United Nations even gave us an award](#), indicating that this is a good project and a model worth replicating. Thaidene Nënë is a place we know we have to defend and fight to protect on a continuous basis. Protecting it is consistent with our way of life and will continue to provide us the opportunity to be Dene. But in thinking about the future of the territory, there are things that are

out of our control. We're always thinking of ways we can mitigate the impacts of climate change. We know that if left unmanaged, the impacts of climate change, the fires, they'll be detrimental — but presently, we don't have the financial resources to manage that. Thaidene Nënë, like all IPCA's should be a place where Indigenous people can exercise their rights and responsibilities.

We need the financial resources to create opportunities for economic reconciliation, land reconciliation and cultural reconciliation so we can use our worldviews and knowledge systems to manage territories across this nation.

Aviqtuuq

Taloyoak, the northernmost community on the mainland in Canada, is working to establish an Inuit Protected and Conserved Area in their traditional lands of Aviqtuuq. As delineated by the community, the proposed IPCA would cover almost 90,000 km² of marine, terrestrial and freshwater ecosystems in Nunavut, helping to safeguard caribou, polar bear, muskox and arctic whales. The region is currently under threat from industrial development; the risks of international shipping and mining threaten the area that the community relies on, particularly for food security and economic prosperity.

As a result, Taloyoak residents proposed a prize-winning plan (*Niqihaqut*; meaning “our food”) to form the management of Aviqtuuq. Through development of a conservation and food-based economy, the IPCA can help to conserve nature's bounty and support sustainable access to food and other resources for northern communities.

The proposed Inuit Protected and Conserved Area would also improve upon ecological representation scores within Nunavut, shifting the enduring features within the proposed boundary from scores of “No protection” to “Very Good” ecological representation (Figure 7). The size of the protected area also has positive effects for adjacent enduring features, improving the ecological representation of the protected areas network well beyond the boundary of the protected area. There are more than 554 million tonnes of carbon (at a density of 14.5 kilograms/m²) stored within the terrestrial and freshwater ecosystems of Aviqtuuq, and the area is nationally important for ecological connectivity and climate resiliency.

Impact of Proposed Aviqtuuq IPCA on Ecological Representation

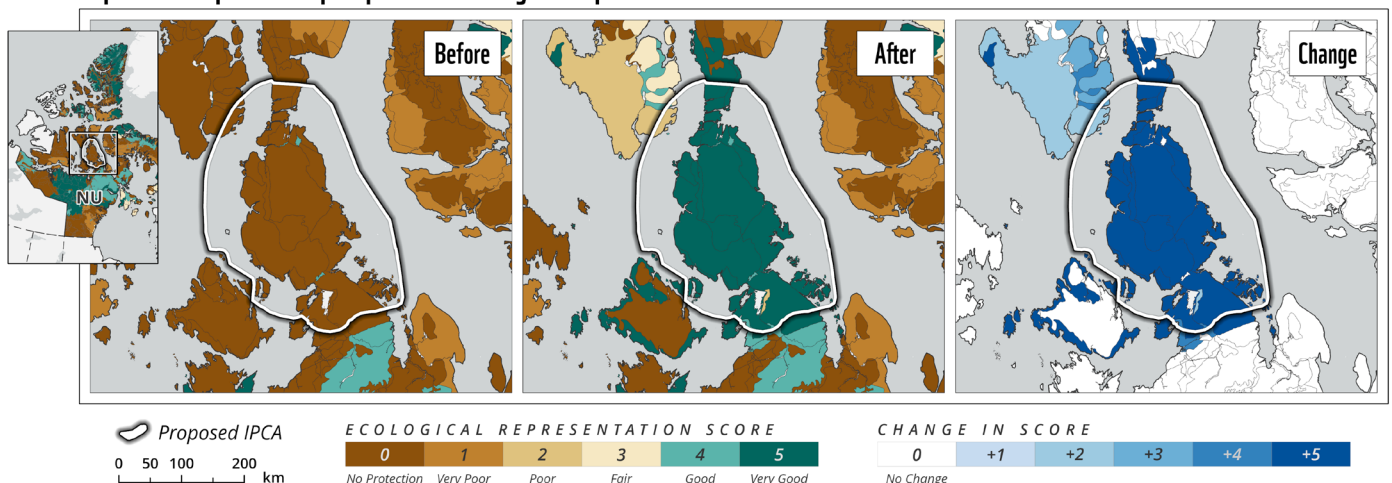


Figure 7. Ecological representation score of Aviqtuuq. Maps depict (i) current ecological representation, (ii) the resulting ecological representation score following establishment, and (iii) the anticipated change in score if established.

Jimmy Ullikatalik, manager of Spence Bay HTA in Taloyoak, NU

Taloyoak is the most northerly community on the mainland in Canada, and the friendliest in Nunavut. From here, on the southwestern coast of Aviqtuuq, there are only islands, so all wildlife has to pass through, by water or land, during their migration. So as soon as it starts to warm up, we go out fishing and hunting.

In the past 50 years, we've gone from using dog teams to using iPhones. It's a big change. But the environment is changing, too, and it is affecting our food security because food from the land is under threat from climate change and from mining exploration. Climate change is also thinning the sea ice cover in the nearby Northwest Passage, this will soon bring new international shipping routes to our marine wildlife habitats, and the dangers of oil spills.

Since my grandfather's era, when there was talk of building a pipeline across Aviqtuuq, we've fought to keep it safe. So, we're working to create the Aviqtuuq Inuit Protected and Conserved Area (IPCA), which would cover 40,730

square kilometres of ocean, 4,413 square kilometres of freshwater, 20,532 kilometres of rivers and 45,039 square kilometres of land.



An IPCA is not like a regular protected area because it puts Indigenous people in charge, ensuring our food security with a sustainable harvest as well as economic development like small-scale fisheries, outfitting camps, and tourism.

Aviqtuuq is our home, our traditional lands. It has provided us with what we have needed to survive and thrive here for generations. We want to see the lands and resources here protected from industrial development because the area is sacred to us, and has everything we need to prosper. A mine might create jobs for 20 years. But the first-ever Inuit Protected and Conserved Area in Canada, would generate jobs forever, from generation to generation, and still protect the land.

Saskatchewan River Delta (Kitaskīnaw)

The Saskatchewan River Delta is a 9,706 km² inland water delta, the largest in North America. It is a collection of wetlands, lakes, river channels and forests that provides vital habitat for wildlife, while sequestering carbon from the atmosphere. The delta has supported Indigenous peoples for more than 7,000 years, but continued habitat degradation and biodiversity loss has affected the community's way of life.

In June 2021, the Cumberland House Cree Nation declared formal protection for the Kitaskīnaw under Indigenous law. Establishment of the Saskatchewan River Delta ensures that Canada's protected area network adequately represents physical habitats (e.g., enduring features) that are both within reach, and beyond the region (Figure 8). The Saskatchewan River Delta stores more than 949 Mt C (at a density of 94.9 kg/m²) in its plant biomass and soils up to one meter in depth.

Impact of Proposed Saskatchewan River Delta IPCA on Ecological Representation

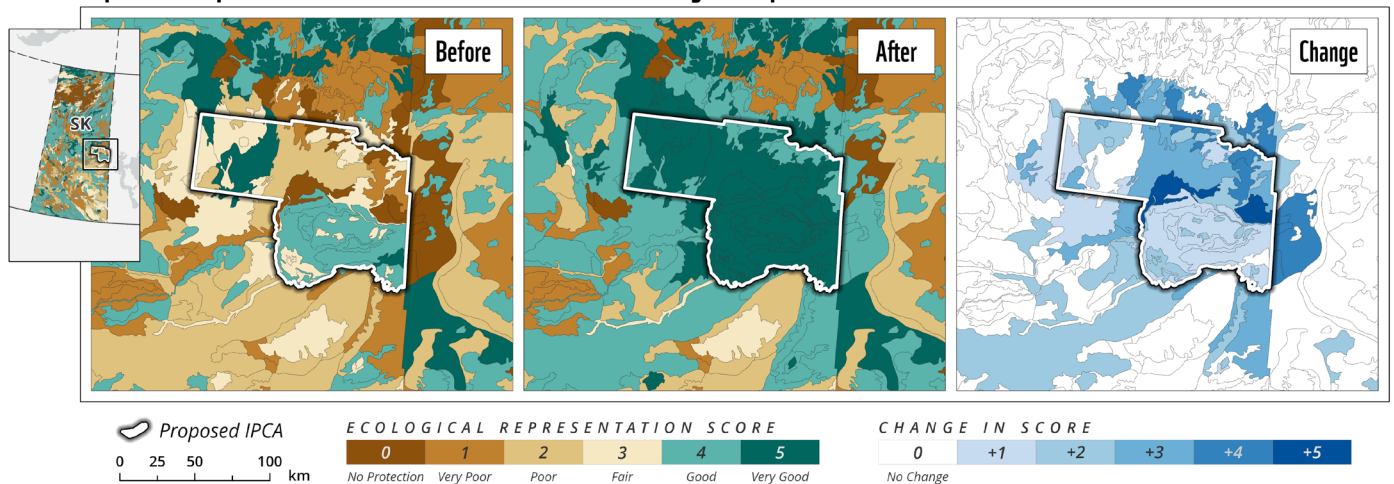


Figure 8. Ecological representation score of Kitaskīnaw. Maps depict (i) current ecological representation, (ii) the resulting ecological representation score following establishment, and (iii) the anticipated change in score if established.

Nadina Gardiner, Cumberland House Cree Nation

My name is Nadina Gardiner, I am a member of the Cumberland House Cree Nation and advocate for the Saskatchewan River Delta. Cumberland House was established as a community by the Hudson's Bay Company because of the richness of the land and the fur trade. We were trappers and fishermen and our people moved with the seasons throughout our territory.

Cumberland House sits in the Saskatchewan River Delta, which is the largest inland delta in North America, and it's the third largest in the world, at 10,000 square kilometres. In June of 2021, Cumberland House declared the Delta to be under the protection of Indigenous law and under our jurisdiction as a Cree Nation. This way, when the protection under federal and provincial laws and processes fail, we still maintain jurisdiction over this traditional territory — we've taken that upon ourselves to protect this area.

Right now, our Delta is dying and some people think it's because we need water, but it's not just water that we need, it's the type of water that we need and when we need the water. There's been such a change in flow as the Saskatchewan River has been dammed upstream at multiple points. When you reverse or completely change the flow of a river, you're not just changing the flow of that river, you're changing the flow of all the animals and all the species and everything the river supports.

We have been sounding the alarm about the Delta for years, since long before my time. There's people and Elders before me who have tried to get the word out. Do you know

what the Florida Everglades are? I do. Everybody knows that from all corners of the world, and there's protection for them. But nobody knows about the Saskatchewan River Delta. We need to realize what we have right here.

This is such a significant area for nesting and migration for waterfowl, some of which travel all the way to South America. This doesn't just affect us, it affects everybody in this country and beyond. Even if you just consider the amount of carbon that these wetlands capture, you would see why it was so important to keep it healthy and to maintain, restore and rejuvenate it, so it becomes an area of carbon capture instead of release. This goes beyond just our community — we need everyone to see this important ecosystem.

I think that people are seeing that distinct connection between our culture and the land, and how those two go hand in hand. Everything is connected. In the past 10 or 15 years, I have noticed that our voices are getting stronger as we have continued educating ourselves more about our rights as Indigenous peoples. We talk a lot about reconciliation in this country, and I think it's within ourselves to reconcile with what has happened and move forward and do something about it. Social media and technology play a big part in that, and that's where we see what's going on in other First Nation communities. I think even just seeing that empowers us to see how others are protecting their lands. It's catching fire all over.



Seal River Watershed

The Seal River Watershed is one of the world's last remaining intact spaces. It is a unique region devoid of roads, development or mines where biodiversity is able to move unencumbered throughout the vast landscape. The watershed is found west of Churchill, in the northern reaches of Manitoba, and spans 50,000 km². As the only community located within the region, the Sayisi Dene First Nation call the Seal River Watershed home. Their goal is to ensure that the Seal River Watershed is protected so that the region can continue to provide an abundance of ecological and cultural resources for all future generations. While being led by the Sayisi Dene First Nation, the initiative is supported through partnership with their Cree and Dene neighbors.

Generally, many enduring features within the Seal River Watershed are adequately represented within Canada's protected areas network. Nevertheless, through formal recognition and protection of this region, the entire watershed would be adequately represented, with most enduring features achieving the highest scores for ecological representation (Figure 9). The Seal River Watershed stores more than 2,070 Mt C (at a density of 50.5 kg/m²) in its plant biomass and soils up to one meter in depth and is particularly important for climate resiliency and ecological connectivity on a national scale.

Impact of Proposed Seal River Watershed IPCA on Ecological Representation

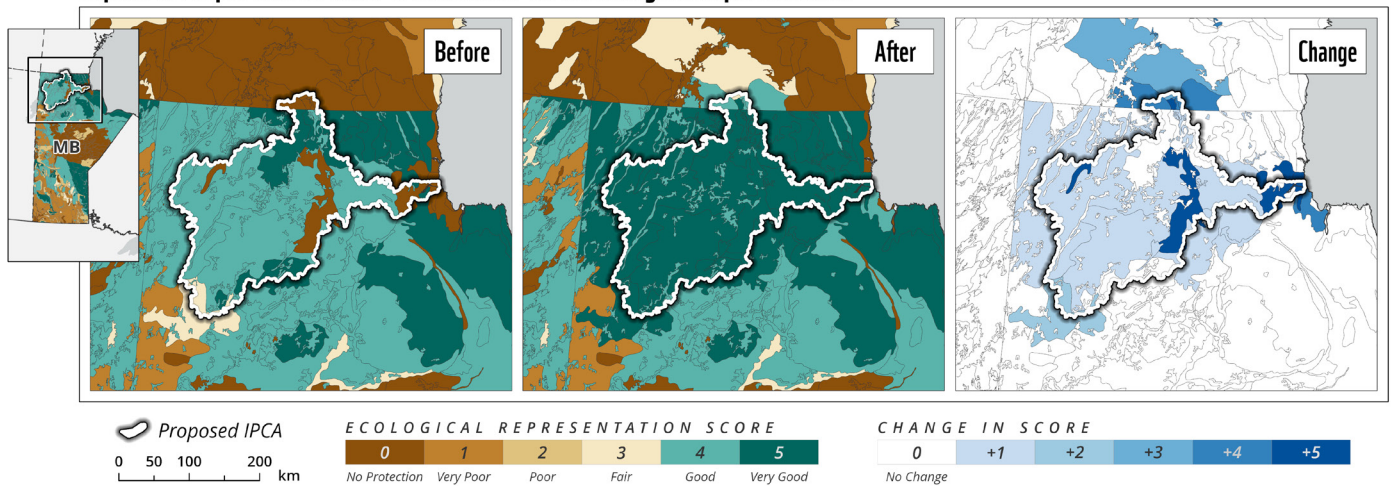


Figure 9. Ecological representation score of Seal River Watershed. Maps depict (i) current ecological representation, (ii) the resulting ecological representation score following establishment, and (iii) the anticipated change in score if established.

Stephanie Thorassie, Executive Director, Seal River Watershed Alliance, Sayisi Dene First Nation



The Seal River Watershed is my home. It's an incredible place to be if you have access to it. It's isolated, but that's part of the beauty of it. The Seal River is the last major river in Manitoba that is undammed and untouched right now.

This area that we're talking about protecting as an Indigenous Protected and Conserved Area is a very large space — the same size as Nova Scotia. It is traditional territory that's shared with four communities, including our neighbors to the west, south, and even a little bit to the north of us. It's 50,000 square kilometres, and 99.97 per cent of it is pristine land. The eskers, the lakes, the trees, the water, the caribou — the Dene people are people of the caribou — every aspect of this watershed is essentially the same as it was when my great, great, great great-grandparents were here. And this is the area we're striving to protect for our children's children's children. We want to ensure that we keep a connection to the land and our traditional territory and give our future generations a strong place to stand on their two feet.

There's also 2 billion tons of carbon in the watershed right now and if we release that into the air, it would cost billions of dollars to repair the damage. The Seal River Watershed is doing a service for Mother Earth — it's a set of lungs that we all need to breathe.

These are some of the reasons why this area is so important and protecting it has really been a grassroots-led type of project. We've been trying to elevate and hold up the voices of our community members and Elders while using our own Indigenous laws to protect the land and be good stewards of it. We've invited industry and the provincial and federal governments to sit at our table and talk about what this could mean for all of us as we move forward.

The Sayisi Dene First Nation isn't working alone. We work with four different Chiefs, four sets of Elders, four sets of community members and staff. We recognize that traditional use of the area has happened for all four communities and we're really trying to honour that and bring all those voices to the table to make sure that we all have a say.

There is an incredible energy that comes from being connected to the land, but also to community members in the Seal River Watershed. When we continue to encourage these connections, amazing, incredible things can happen. There's no real words to describe how incredible it is to be part of that.

THE PATH TOWARD A NEW MODEL FOR PROTECTED AREAS IN CANADA

Protected area establishment in Canada cannot continue under a “business-as-usual” approach. The dual crises of biodiversity loss and climate change demand that new protected areas deal with both at the same, and our responsibility to advance reconciliation demands the prioritization of Indigenous rights and title. This is why we need a new model.

The new model should:

- Consider connectivity, ecological representation, climate refuges, carbon storage and Indigenous rights and title, all while incorporating strategies for long-term management and stewardship.
- Prioritize Indigenous Protected and Conserved Areas (IPCAs). Non-IPCAs should be co-developed and implemented with Indigenous consent, recognition of territorial rights and title, and incorporation of Indigenous knowledge systems, leadership and stewardship.
- Establish and define emissions reduction targets for protected areas, and include them in the Government of Canada’s Naturally Determined Contributions (NDCs).
- Create new financial tools that account for the establishment, management and long-term stewardship of protected areas so that they can provide prolonged benefits for biodiversity and climate in the centuries to come.
- Develop new legislative tools to advance IPCAs where current protected areas establishment tools are limited -- as identified by the Indigenous Circle of Experts during the Pathway to Target 1 process. Crown governments must also recognize and support IPCAs when unilaterally declared by Indigenous Nations in acknowledgment of self-determination and self-governance.



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