

The Economic, Socio-Cultural, and Ecological Benefits of Indigenous Protected and Conserved Areas in British Columbia

Yellowstone to Yukon Conservation Initiative

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Jordan Demeulemeester, Senior Land Guardian with Saulteau First Nations does grizzly bear monitoring. Photo credit: Ryan Dickie

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Twin Sisters Native Plant Nursery, Saulteau First Nations. Photo credit: David Moskowitz



Caribou calf in the Klinse-za maternity pen, Saulteau First Nations. Photo credit: David Moskowitz

Issue Sheet:

The Benefits of Indigenous Protected and Conserved Areas in British Columbia

The Yellowstone to Yukon Conservation Initiative (Y2Y) is a transboundary Canada–United States not-for-profit organization that aims to connect and protect the 3,400 kilometers (2,100 miles) between the Greater Yellowstone Ecosystem and Yukon Territory.

We are recommending that the Government of British Columbia prioritize the establishment of a mandate to fully fund and advance Indigenous Protected and Conserved Areas (IPCAs) in agreements with Indigenous governments, federal agencies, other provinces and territories.

Indigenous Protected and Conserved Areas, or IPCAs, are clearly defined protected areas that can include both lands and waters governed by First Nations in partnership with a provincial or federal government. IPCAs benefit all British Columbians as a policy option. Supporting the establishment and maintenance of IPCAs has many economic, socio-cultural, and ecological benefits.

Land Acknowledgement

Yellowstone to Yukon Conservation Initiative’s head offices are within Treaty 7, signed in 1877 by the ȩyāǰhé Nakoda (Stoney Nakoda) Nations of Bearspaw, Chiniki, and Goodstoney; the Niitsitapi (Blackfoot) Nations of Siksika, Aapatohsipikani (North Piikani), and Kainai; Tsuut’ina First Nation; and the British Crown.

These lands also overlap with the homelands of Aamskaapipikani (Blackfeet), Secwépemc, Ktunaxa, Mountain Cree, and the Métis Nation of Alberta (Zone 3).

We further acknowledge that the broader Yellowstone to Yukon region overlays at least 75 Indigenous territories.

What are the economic benefits of Indigenous Protected and Conserved Areas?

As a form of regional economic development, IPCAs are a sound investment that create jobs, generate economic growth, and establish industry certainty through land-use planning.

Jobs

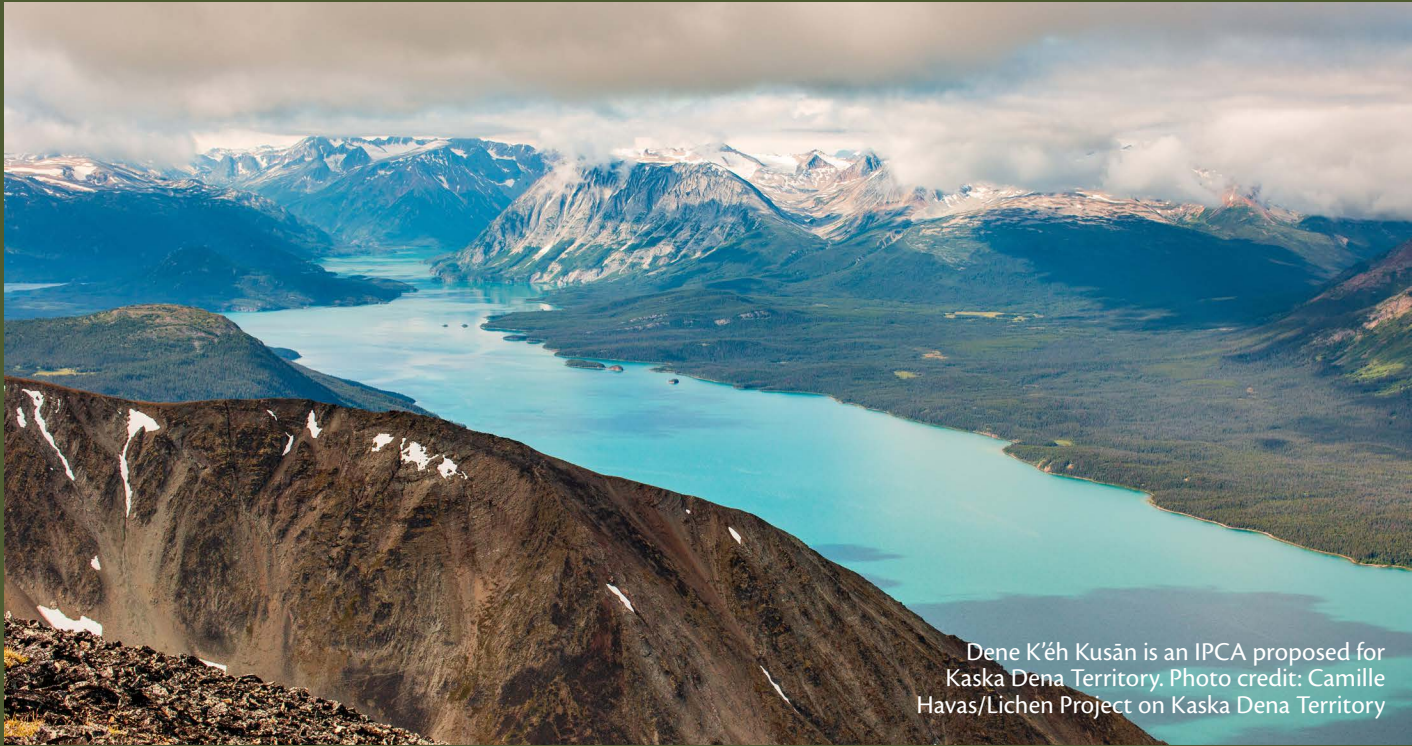
As the Indigenous Circle of Experts (2018) highlight, conservation-based economies, like those developed through Indigenous-led conservation efforts, can provide long-term, sustainable employment for local and regional residents by maximizing existing skills and knowledge.

- Indigenous Guardians are experts who manage IPCAs, restore landscapes, and monitor development. These well-paid jobs create significant benefits in the communities where Guardians reside.
- There are a total of 120 Guardian programs operating across Canada (Land Needs Guardians, n.d.-a). For example, the Łutsël K’e Dene First Nation Guardian program employs 10 people in the summer and 4 in the winter in a community of about 300 people (Indigenous Leadership Initiative, n.d.-b).
- Indigenous-led conservation creates long-term employment opportunities in sustainable sectors of the economy. Protecting the Great Bear Rainforest has created more than 1,000 permanent jobs and the establishment or growth of more than 100 local businesses (Coast Funds, 2019).

Economic Development

Supporting IPCAs offers a great return on investment, generating long-term regional economic benefits.

- An initial investment of \$4.5 million in the Łutsël K’é and Decho Guardian programs generated \$11.1 million in social, economic, cultural, and environmental value, with this return estimated to increase over time. For every \$1 invested, approximately \$2.5 of value has been created (Social Ventures Australia, November 2016).
- Łutsël K’é Dene First Nation and its public government partners have committed to spending \$4M-\$7M per year to manage Thaidene Nënë — spanning 6.5 million acres or 26,376 square kilometers — including new investments in capital projects. These investments, such as \$500,000 on equipment to help manage this protected area, are evidence of how IPCAs help circulate money through the regional economy (Indigenous Leadership Initiative, n.d.-b).



Dene K'eh Kusān is an IPCA proposed for Kaska Dena Territory. Photo credit: Camille Havas/Lichen Project on Kaska Dena Territory

Emerging Opportunity

Carbon Financing

Carbon financing can offer emerging economic opportunities that are compatible with the establishment and management of IPCAs. If advanced while upholding Indigenous rights, nature-based carbon storage solutions can help to diversify economic activities, protect landscapes and catalyze the conservation economy. However, a current lack of policy coherence and limited awareness and engagement with carbon finance opportunities are noted as significant challenges for Indigenous Nations and communities (Townsend & Craig, 2020). Mosaic Forest Management’s BigCoast Forest Climate Initiative’s commitment to share revenues with the IPCA Innovation Program offers examples of what is possible (Ecotrust Canada, 2023).

Tourism

Indigenous-led tourism is a significant source of economic growth in Canada, contributing \$1.9 billion in GDP in 2019 (Indigenous Tourism Association of Canada, 2022). IPCAs work in tandem with the growing global demand for solutions-oriented tourism, helping to protect imperiled ecosystems, and achieving worldwide recognition in doing so.

- Indigenous-led conservation efforts are helping to create and capitalize on the increasing demands for bear-viewing and ecotourism in B.C. which generates millions in economic benefits for the province (Honey et al., 2016). For example, the Kitasoo/Xai’Xais Nation’s Spirit Bear Lodge within the Great Bear Rainforest employs nearly 10 percent of the local population and has helped diversify employment opportunities in the region, especially for youth. Profits from the Lodge are reinvested in cultural programs, business development, and a research foundation that has helped attract further investment (Coast Funds, n.d.).
- The Łutsël K’é Dene First Nation has purchased a fishing lodge within Thaidene Nënë, providing employment and investment opportunities in the region and building on the Northwest Territories’ \$200 million tourism industry. Bookings at the Frontier Lodge are required a full calendar year in advance (CBC News, 2022) due to popularity.
- As part of the proposed Dene K’eh Kusān Indigenous Protected and Conserved Area in northern B.C., the Kaska Dena Council is working with guide outfitters on plans for the IPCA. Conservative estimates suggest guide outfitting could generate \$6-7 million annually in the Dene K’eh Kusān IPCA (Dena Kayeh Institute, 2020).



Black bear mother and cub. Photo credit: Shutterstock

Indigenous-led conservation has helped create, and is capitalizing on, demand for bear-viewing tourism in B.C.

IPCAs support collaborative land-use planning

As a component of land-use planning, IPCAs provide investment certainty for industry, reducing financial and reputational risk. IPCAs clearly delineate areas for conservation and for development, and many IPCA proposals outline a desire to work more effectively with industry, recognizing the important role industry plays in regional economic development.

- The Gitanyow Land-Use Plan (LUP), established in 2012, provides clear guidelines for allowable industrial activities and has strengthened the regional forestry sector while protecting nature through the Wilp Wii Ltswxw Mesiadin IPCA in northwestern B.C. Prior to the land-use plan, the Gitanyow were regularly involved in legal challenges against industry. Since the plan was implemented, no new court cases have emerged (Simmons, 2023).
- Tsay Keh Dene Nation declared the Ingenika IPCA after meeting with major licensees and tenure holders with interests in their territory in north-central B.C. They established ever-green and binding agreements with industry to not plan for operations or operate in the Ingenika IPCA. These agreements also identified areas for appropriate harvest in special management zones adjacent to the IPCA. Likewise, Tsay Keh obtained the support of global companies to not source forest products in B.C. that originate from the Ingenika IPCA or otherwise infringe Tsay Keh rights in the Ingenika (3M, 2021).
- Guardian programs can also help provide industry certainty. For example, the Innu Nation Minashkuat Kanakutuataku Guardian program monitors the Voisey’s Bay Mine in Labrador. Initially the mine’s development was a source of conflict, however the monitoring program has strengthened the social acceptability of the mine with Innu communities (Land Needs Guardians, n.d.-b).

Tsay Keh Dene Nation obtained the support of global companies to not source forest products in B.C. that originate from the Ingenika IPCA or otherwise infringe Tsay Keh rights in the Ingenika.



What are the socio-cultural benefits of Indigenous Protected and Conserved Areas?

Evidence from around the globe shows support for Indigenous-led conservation, including IPCAs, and has significant social and cultural benefits for Indigenous peoples and non-Indigenous people visiting or living in an area. These include, but are not limited to, the revival of Indigenous cultures, educational and training opportunities, and human health and well-being benefits from securing cultural species, strengthening food sovereignty, and the renewal of land-based relationships.

Berry harvesting, Saulteau First Nations.
Photo credit: David Moskowitz

Cultural Cohesion, Maintenance, and Resurgence

As ICE (2018) succinctly highlights: “Culture and language are the heart and soul of an IPCA⁵.”

- Involvement in Ranger or Guardian programs, key components of IPCAs, strengthens ties to the land, cultural responsibilities and the maintenance of traditional knowledge (Fogarty, 2012).
- Indigenous-led conservation provides opportunities for Indigenous peoples to have or revive relationships with the land. For example, Tr’ondek Hwech’in Government’s “culture camps” brings elders and youth together to maintain traditional practices and experience the source of traditional knowledge and history (Shultis & Heffner, 2016).
- By facilitating time on the land, IPCAs, Guardian programs and related trainings stimulate Indigenous youth engagement in culture, language, and biodiversity (Ens et al., 2020).

Revitalizing cultural land practices is crucial for protecting both Indigenous languages and the environment itself.

Indigenous languages are the foundation of oral history and tradition and are intimately connected to the land (ICE, 2018).

Revitalizing cultural land practices is therefore crucial for protecting both Indigenous languages and the environment itself.

- Land-based environmental management practices, collaborative conservation policy, and IPCAs improve intergenerational knowledge transfer (Tran et al., 2020b) and stimulate interest in, and maintenance of, Indigenous languages (Ens et al., 2020; Schultz et al., 2018).
- As “repositories of science” Indigenous languages hold great knowledge about socio-ecological relationships and changes observed on the land, which can make significant contributions to land management and protection (M’sit No’kmaq et al., 2021).
- Relatedly, IPCAs elevate Indigenous rights and responsibilities, including traditional values, knowledge systems, and Indigenous laws, which emerge from relationships with the environment (Indigenous Circle of Experts, 2018; M’sit No’kmaq et al., 2021; Premauer & Berkes, 2015).

Education and Training

IPCA's and the land-based opportunities they provide, help to facilitate intergenerational knowledge transfer between Indigenous elders and youth (Tran et al., 2020a).

- For example, youth Guardian programs like that of ʔaq'am in southeastern B.C. are helping to pass traditional knowledge to the next generations by facilitating time with elders and youth on the traditional territories of the Ktunaxa Nation (CBC Radio, 2023).
- Land-based learning is a powerful tool that can contribute to reconciliation (Bowra et al., 2020), helps students develop deeper professional responsibilities (Borrows, 2016), and helps develop skills to guide and protect conservation landscapes—in both rural and urban spaces (Syed, 2023).
- Indigenous land management (Schultz et al., 2018), land-based cultural programs (Fogarty, 2012), and Guardian programs (Land Needs Guardians, n.d.-c) all support various educational and training opportunities for Indigenous peoples.

In addition to providing cultural tourism opportunities for First Nations, Indigenous-led conservation is helping educate non-Indigenous people and visitors about the histories of colonialism, Indigenous culture, law, and language (Lynch et al., 2010). A practice that, despite being important for Indigenous knowledge-holders, has been limited in other protected area settings (Johnston & Mason, 2020).



Guardians in the Dehcho K'ehodi program, Dehcho First Nations.
Photo credit: Land Needs Guardians



Qat'muk is central to the Ktunaxa people's cultural and spiritual identity.
Photo credit: Shutterstock

Pauline Walker picking lichen for caribou maternity pen, Saulteau First Nations. Photo credit: David Moskowitz



Health and Well-being

The impacts of colonialism, including loss of language, culture and disconnection from traditional territories are linked to the health inequalities faced by Indigenous peoples (King et al., 2009). In protecting and restoring land and culture, Indigenous-led conservation and IPCAs can address these inequalities, offering health and well-being benefits for Indigenous peoples and all Canadians.

- Caring for the land has been shown to improve a variety of physical health indicators for Indigenous peoples (Burgess et al., 2009).
- The health and well-being benefits derived from a healthy environment means that IPCAs benefit all Canadians, including Indigenous peoples (Indigenous Circle of Experts, 2018; Lemieux et al., 2022).
- Being on the land, hunting, and access to traditional foods also positively affect mental health and well-being for Indigenous peoples (Kirmayer et al., 2008; Parlee et al., 2008).

Wildlife species, such as bison, caribou and moose, are culturally important to certain Indigenous peoples. Indigenous-led conservation efforts, including IPCAs, often centers around the care, restoration and protection of culturally significant species of animals and plants, such as camas, lichen, and berries. These efforts promote health and well-being benefits that include:

- The protection of cultural species and practices that ensure a future for Indigenous peoples and livelihoods, and helps increase access to food, hides and other animal parts for cultural practices including ceremony (Schneider, 2022).
- Increasing access to traditional foods and the protection and restoration of cultural species improves Indigenous peoples’ food sovereignty (Popp et al., 2019).
- Indigenous-led species restoration has cultural, spiritual and psychological benefits for those involved in restoration efforts and the broader community (Haggerty et al., 2018).

Indigenous-led species restoration has cultural, spiritual and psychological benefits for those involved.

What are the ecological benefits of Indigenous Protected and Conserved Areas?

Research shows that Indigenous peoples manage or have tenure rights to about a quarter of the world’s land and these lands contain 80 percent of the world’s remaining biodiversity (Sobrevila, 2008, Garnett et al., 2018). This highlights the strength of Indigenous stewardship for maintaining ecological integrity. More specifically, there are a variety of ecological benefits of IPCAs observed at both local and global scales, including but not limited to species monitoring and restoration, protected and connected lands, and climate change adaptation and resilience.

Species Monitoring and Restoration

Species monitoring provides an opportunity for the resurgence of Indigenous environmental stewardship and has been shown to effectively restore previously declining animal and plant species

- In the Great Bear Rainforest, monitoring of grizzly bear movement by the Kitasoo/Xai'xais First Nation contributes to a strong resurgence of Indigenous environmental stewardship (Tran et al., 2020b).
- After a 70 percent decline in the moose population on the traditional territory of the Gitanyow Lax'yip from 2001 to 2007, moose monitoring by the Lax'yip Guardians has helped increased the moose population by 50 percent between 2011 and 2017 (Popp et al., 2020).

Central to Indigenous peoples’ relationship with the land are the spiritual, cultural, and symbolic values attributed to many species (Goolmeer et al., 2022). IPCAs and other Indigenous-led conservation efforts support the restoration and protection of cultural species for generations to come.

- In B.C., on the traditional territory of the West Moberly First Nations and Saulteau First Nations, recovery of the nearly extirpated Klinse-Za caribou herd was led by caribou Guardians who helped revive the population from 38 caribou in 2013 to 101 in 2021 (Lamb et al., 2022).
- After Indigenous leaders, Elders, and knowledge keepers highlighted the disturbing decline of salmon in B.C.’s Fraser watershed (Hill et al., 2021), a collaborative restoration plan, led by the Katzie First Nation, was implemented to restore spawning and rearing habitat, remove river blockages and reconnect salmon pathways. The success of the project has led to long-term partnerships aimed at expanding ecosystem-level restoration efforts (WWF, n.d.)

Recovery of the nearly extirpated Klinse-Za caribou herd was led by caribou Guardians who helped revive the population from 38 caribou in 2013 to 101 in 2021

Protected and Connected Lands

IPCAs can help meet biodiversity targets and improve habitat connectivity, providing larger landscapes for wide-ranging species to travel safely (Zurba et al., 2019) and healthier ecosystems for people and wildlife alike.

- In northern B.C., within the traditional territory of the Kaska Dena, the proposed Dene K’eh Kusān IPCA would protect 40,000 square kilometers and provide connectivity to 14 adjacent provincial protected areas (Dene Kayeh Institute, 2021).
- On the traditional territories of the Kitasoo/Xai'xais First Nation, the proposed Green Inlet IPCA would provide connectivity to adjacent protected areas (Tran et al., 2020b).



Caribou. Photo credit: Shutterstock

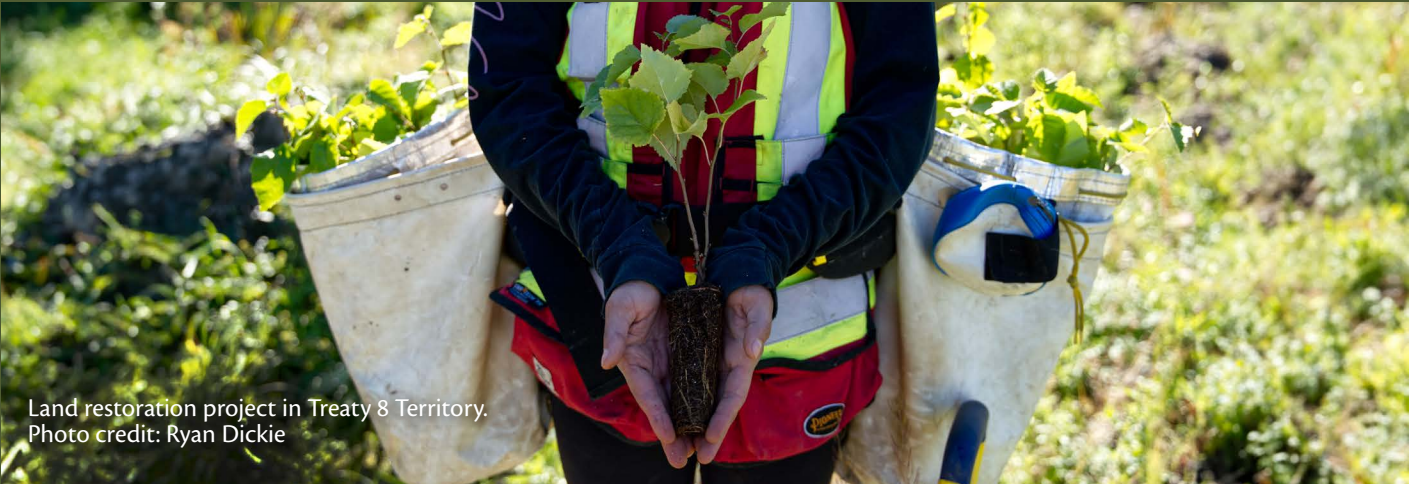
Climate Change Adaptation and Resilience

Indigenous Nations in the boreal forest conserve lands that act as some of the richest carbon storehouses in Canada (Indigenous Leadership Initiative, n.d.-a). One benefit of IPCAs is they store carbon, instead of being released into the atmosphere and contributing to climate change. These carbon storehouses are not only important for ecological reasons, but further provide economic benefits to be harnessed by First Nations with the emergence of carbon financing (Ecotrust Canada, 2023).

- In northern Manitoba, the Seal River Watershed IPCA proposed by the Sayisi Dene First Nation stores 1.7 billion tonnes of carbon, equivalent to about 8 years’ worth of total greenhouse gas emissions in Canada (International Institute for Sustainable Development, 2022).
- In northern B.C., within the traditional territory of the Kaska Dena, the proposed Dene K’éh Kusān IPCA has boreal soil, which stores at least 362 million tonnes of carbon, equivalent to 18 months of greenhouse gas emissions in Canada (Staveley, 2020).

Indigenous fire stewardship and cultural burning help replenish soil nutrients and restore the land, reduce wildfire risk by lessening fuel loads, and reduce greenhouse gas emissions by keeping carbon stores in woody vegetation, while also facilitating intergenerational knowledge transfer (Hoffman et al., 2022).

- In Australia, the reintroduction of Indigenous fire management over the past decade has cut destructive wildfires in half (Fuller, 2020).
- As of 2021, Indigenous fire stewardship in Australia abates around 1 million tonnes of emissions per year (The Nature Conservancy, n.d.).
- In North America, although Indigenous peoples use cultural burning to manage more than a dozen species, such as vascular plants, insects, and mammals, there are calls for widespread incorporation of Indigenous knowledge and cultural burning in the mitigation of wildfires (Christianson, 2022).



Land restoration project in Treaty 8 Territory.
Photo credit: Ryan Dickie

How does supporting IPCAs align with additional priorities for British Columbia?

- Supporting IPCAs can help advance reconciliation between Indigenous and non-Indigenous people in Canada and can help the government meet its goals to support Indigenous leadership in conservation in the draft action plan of the United Nations Declaration on the Rights of Indigenous Peoples Act (S.C. 2021, c. 14).
- There are currently 100,000 square kilometers of proposed and declared IPCAs in B.C. alone, which upon funding and approval, can help the province achieve its commitment of protecting 30 percent of its lands by 2030 (Canadian Parks and Wilderness Society, 2022). Additional provinces and territories can help meet their commitments to protecting lands and biodiversity by advancing IPCAs, with leadership and support from Canada.
- Supporting IPCAs can help the provinces achieve their net-zero emissions by 2050 reduction commitments and broader climate targets through the protection of nature and the acceleration of nature-based solutions.
- The Federal Government has collaborations with Indigenous, provincial and territorial governments, such as agreements with B.C. and the First Nations Health Authority, to eliminate the health-related disparities and inequalities faced by Indigenous peoples in Canada. The health and well-being benefits derived from IPCAs could help achieve this important commitment.
- Supporting IPCAs aligns with the four priority pathways outlined in the B.C. First Nations Climate Strategy and Action Plan, including Inherent Title and Rights, Capacity and Leadership, Land and Water Protection, and Climate Response and Preparedness.
- Supporting IPCAs provides opportunity for Indigenous Peoples to exercise and maintain their traditional ecological knowledge as outlined in the goals of the Declaration Act Action Plan developed as part of Bill–41: the Declaration on the Rights of Indigenous Peoples Act.

Bibliography

For more resources on Indigenous-led conservation and related topics, please visit:

- Youdelis, M., Tran, K., and Lunstrum, E. (2021). Indigenous-Led Conservation Reading List. Conservation Through Reconciliation Publication.
- https://docs.google.com/document/d/1vOzvjiSjWzOt993QO90TJ95D0u_JpD-rpi5qgL2QRaY/edit

3M (2021). 2021 Sustainability report: Improving every life. <https://multimedia.3m.com/mws/media/2006066O/2021-sustainability-report.pdf>

Artelle, K. A., Zurba, M., Bhattacharyya, J., Chan, D. E., Brown, K., Housty, J., & Moola, F. (2019). Supporting resurgent Indigenous-led governance: A nascent mechanism for just and effective conservation. Biological Conservation, 240, 108284. <https://doi.org/10.1016/j.biocon.2019.108284>

Borrows, J. (2016). Outsider Education: Indigenous Law and Land-Based Learning. Windsor Yearbook of Access to Justice, 33¹, Article 1. <https://doi.org/10.22329/wyaj.v33i1.4807>

Bowra, A., Mashford Pringle, A., & Poland, B. (2021). Indigenous learning on Turtle Island: A review of the literature on land based learning. The Canadian Geographer / Le Géographe Canadien, 65², 132–140. <https://doi.org/10.1111/cag.12659>

Burgess, C. P., Johnston, F. H., Berry, H. L., McDonnell, J., Yibarbuk, D., Gunabarra, C., Mileran, A., & Bailie, R. S. (2009). Healthy country, healthy people: The relationship between Indigenous health status and “caring for country.” Medical Journal of Australia, 190¹⁰, 567–572. <https://doi.org/10.5694/j.1326-5377.2009.tb02566.x>

Canadian Parks and Wilderness Society. (2022). CPAWS-BC celebrates a commitment to protecting 30% by 2030 and advancing Indigenous Protected and Conserved Areas in B.C. <https://cpaws.org/cpaws-bc-celebrates-a-commitment-to-protecting-30-by-2030-and-advancing-indigenous-protected-and-conserved-areas-in-bc/>

CBC News. (2022). Tour operators in the Thaidene Nënë Indigenous Protected Area poised for post-pandemic boom. <https://www.cbc.ca/news/canada/north/thaidene-nene-lutselk-e-tourism-1.6332375>

CBC Radio. (n.d.). Indigenous youth learn to care for the land – and each other. <https://www.cbc.ca/radio/unreserved/indigenous-youth-learn-to-care-for-the-land-and-each-other-1.6585604>

Christianson, A. C., Sutherland, C. R., Moola, F., Gonzalez Bautista, N., Young, D., & MacDonald, H. (2022). Centering Indigenous Voices: The Role of Fire in the Boreal Forest of North America. Current Forestry Reports, 8³, 257–276. <https://doi.org/10.1007/s40725-022-00168-9>

Coast Funds. (2019). New Report Announces First Nations create more than 1000 permanent jobs, 100 businesses using conservation finance. <https://coastfunds.ca/news/new-report-announces-first-nations-create-more-than-1000-permanent-jobs-100-businesses-using-conservation-finance/>

Coast Funds. (n.d.). The Success of Spirit Bear Lodge: How a Remote, Community-led Business Became a Global Model for Ecotourism. <https://coastfunds.ca/stories/the-success-of-spirit-bear-lodge/>

Dene Kayeh Institute. (2020). Economic Opportunities. https://denakayeh.com/wp-content/uploads/2020/12/DKK-FactSheet-Economic_Opportunities.pdf

Dene Kayeh Institute. (2021, March 30). Dene K’éh Kusān: Indigenous knowledge and science-based justification for the protection of Dene K’éh Kusān as an Indigenous Protected and Conserved Area. <https://storymaps.arcgis.com/stories/d2b6d7f98fbb4ed1a93aff91bac1b6be>

Ecotrust Canada. (2023). Advancing Indigenous Protected and Conserved Areas through Carbon Financing. <https://ecotrust.ca/latest/research/advancing-indigenous-protected-and-conserved-areas-through-carbon-financing-2023/>

Ens, E., Scott, Mitchell. L., Rangers, Y. M., Moritz, C., & Pirzl, R. (2016). Putting indigenous conservation policy into practice delivers biodiversity and cultural benefits. Biodiversity and Conservation, 25¹⁴, 2889–2906. <https://doi.org/10.1007/s10531-016-1207-6>

Fogarty, W. (2012). Country as classroom. In People on country: Vital landscapes, Indigenous futures and People on country: Vital landscapes, Indigenous futures. Federation Press. <https://openresearch-repository.anu.edu.au/handle/1885/9758?mode=full>

Fuller, T., & Abbott, M. (2020, January 16). Reducing Fire, and Cutting Carbon Emissions, the Aboriginal Way. The New York Times. <https://www.nytimes.com/2020/01/16/world/australia/aboriginal-fire-management.html>

Garnett, S. T., Burgess, N. D., Fa, J. E., Fernández-Llamazares, Á., Molnár, Z., Robinson, C. J., Watson, J. E. M., Zander, K. K., Austin, B., Brondizio, E. S., Collier, N. F., Duncan, T., Ellis, E., Geyle, H., Jackson, M. V., Jonas, H., Malmer, P., McGowan, B., Sivongxay, A., & Leiper, I. (2018). A spatial overview of the global importance of Indigenous lands for conservation. Nature Sustainability, 1(7), Article 7. <https://doi.org/10.1038/s41893-018-0100-6>

Goolmeer, T., Skroblin, A., Grant, C., van Leeuwen, S., Archer, R., Gore-Birch, C., & Wintle, B. A. (2022). Recognizing culturally significant species and Indigenous-led management is key to meeting international biodiversity obligations. Conservation Letters, 15⁶, e12899. <https://doi.org/10.1111/conl.12899>

Haggerty, J., Rink, E., McAnally, R., & Bird, E. (2018). Restoration and the Affective Ecologies of Healing: Buffalo and the Fort Peck Tribes. Conservation and Society, 16¹, 21. https://doi.org/10.4103/cs.cs_16_90

Hill, C., Bailey, R., Power, C., & McKenzie, N. (2021). Supporting communities in caring for salmon and each other: Creek restoration as a site for multi-system change and wholistic re/conciliation. Canadian Journal of Action Research, 21³, 72-94.

Hoffman, K. M., Christianson, A. C., Dickson-Hoyle, S., Copes-Gerbitz, K., Nikolakis, W., Diabo, D. A., McLeod, R., Michell, H. J., Mamun, A. A., Zahara, A., Mauro, N., Gilchrist, J., Ross, R. M., & Daniels, L. D. (2022). The right to burn: Barriers and opportunities for Indigenous-led fire stewardship in Canada. FACETS, 7, 464–481. <https://doi.org/10.1139/facets-2021-0062>

Honey, M., Johnson, J., Menke, C., Cruz, A.R., Karwacki, J., & Durham, W.H. (2016). The comparative economic value of bear viewing and bear hunting in the Great Bear Rainforest. Journal of Ecotourism, 15³, 199-240. <https://doi.org/10.1080/14724049.2016.1142554>

Indigenous Circle of Experts. (2018). We Rise Together: Achieving Pathway to Canada Target 1 through the creation of Indigenous Protected and Conserved Areas in the spirit and practice of reconciliation. https://static1.squarespace.com/static/57e007452e69cf9a7af0a033/t/5ab94aca6d2a7338ecb1d05e/1522092766605/PA234-ICE_Report_2018_Mar_22_web.pdf

International Institute for Sustainable Development. (2022). Seal River Watershed: The case for conservation. <https://www.iisd.org/system/files/2022-12/seal-river-watershed-case-for-conservation.pdf>

Indigenous Leadership Initiative. (n.d.-a). Indigenous-Led Conservation in the Boreal Is Key to Climate Leadership. <https://www.ilinationhood.ca/publications/backgrounderborealcarbonipca>

Indigenous Tourism Association of Canada. (2022). The Indigenous Tourism Association of Canada releases its revised three-year strategic plan. <https://indigenoustourism.ca/the-indigenous-tourism-association-of-canada-releases-its-revised-three-year-strategic-plan/>

Johnston, J. W., & Mason, C. (2020). The Paths to Realizing Reconciliation: Indigenous Consultation in Jasper National Park. International Indigenous Policy Journal, 11⁴, 1–27. <https://doi.org/10.18584/iipj.2020.11.4.9348>

King, M., Smith, A., & Gracey, M. (2009).
Indigenous health part 2: The underlying causes of the health gap. The Lancet, 374(9683), 76–85. [https://doi.org/10.1016/S0140-6736\(09\)60827-8](https://doi.org/10.1016/S0140-6736(09)60827-8)

Kirmayer, L., Fletcher, C., & Watt, R. (2008).
Locating the ecocentric self: Inuit concepts of mental health and illness. Healing Traditions: The Mental Health of Aboriginal Peoples in Canada, 289–314.

Lamb, C. T., Willson, R., Richter, C., Owens-Beek, N., Napoleon, J., Muir, B., McNay, R. S., Lavis, E., Hebblewhite, M., Giguere, L., Dokkie, T., Boutin, S., & Ford, A. T. (2022).
Indigenous-led conservation: Pathways to recovery for the nearly extirpated Klinse-Za mountain caribou. Ecological Applications, 32⁵, e2581. <https://doi.org/10.1002/eap.2581>

Land Needs Guardians. (n.d.-a).
Guardians Progress Report. <https://landneedsguardians.ca/guardiansprogress#timeline>

Land Needs Guardians. (n.d.-b).
Voisey’s Bay Mine, Guardians and a Path to Sustainability. <https://landneedsguardians.ca/resources/from-standoff-to-stewardship>

Land Needs Guardians. (n.d.-c).
What Guardians Do. <https://landneedsguardians.ca/what-guardians-do>

Lemieux, C. J., Groulx, M. W., Buxton, R. T., Reining, C. E., Blye, C.-J., Hassen, N., Harding, S.-L., Halpenny, E. A., Lem, M., & Jakubec, S. L. (2022).
The ‘healthy parks–healthy people’ movement in Canada: Progress, challenges, and an emerging knowledge and action agenda. PARKS, 28.1, 7–21. <https://doi.org/10.2305/IUCN.CH.2022.PARKS-28-1CIL.en>

Lynch, M.-F., Duinker, P., Sheehan, L., & Chute, J. (2010).
Sustainable Mi’kmaw cultural tourism development in Nova Scotia, Canada: Examining cultural tourist and Mi’kmaw perspectives. Journal of Sustainable Tourism, 18⁴, 539–556. <https://doi.org/10.1080/09669580903406605>

M’sit No’kmaq, Marshall, A., Beazley, K. F., Hum, J., Joudry, S., Papadopoulos, A., Pictou, S., Rabesca, J., Young, L., & Zurba, M. (2021).
“Awakening the sleeping giant”: Re-Indigenization principles for transforming biodiversity conservation in Canada and beyond. FACETS, 6, 839–869. <https://doi.org/10.1139/facets-2020-0083>

Parks Canada (2023).
National Program for Ecological Corridors. <https://parks.canada.ca/nature/science/conservation/corridors-ecologiques-ecological-corridors>

Parlee, B., Berkes, F., & Gwich’in, T. (2005).
Health of the Land, Health of the People: A Case Study on Gwich’in Berry Harvesting in Northern Canada. EcoHealth, 2², 127–137. <https://doi.org/10.1007/s10393-005-3870-z>

Popp, J. N., Priadka, P., & Kozmik, C. (2019).
The rise of moose co-management and integration of Indigenous knowledge. Human Dimensions of Wildlife, 24², 159–167. <https://doi.org/10.1080/10871209.2019.1545953>

Popp, J. N., Priadka, P., Young, M., & Koch, K. (2020).
Indigenous Guardianship and Moose Monitoring: Weaving Indigenous and Western Ways of Knowing. Human Wildlife Interactions.

Premauer, J. M., & Berkes, F. (2015).
A Pluralistic Approach to Protected Area Governance: Indigenous Peoples and Makuira National Park, Colombia. Ethnobiology and Conservation, 4⁴, 1–16. <https://doi.org/10.15451/ec2015-5-4.4-1-16>

Puzyreva, M., Qi, J., Terton, A., & Farrow, T. (n.d.).
Seal River Watershed: The case for conservation. International Institute for Sustainable Development.

Schneider, L. (2022).
Decolonizing conservation? Indigenous resurgence and buffalo restoration in the American West. Environment and Planning E: Nature and Space, 251484862211191. <https://doi.org/10.1177/25148486221119158>

Schultz, R., Abbott, T., Yamaguchi, J., & Cairney, S. (2019).
Australian Indigenous Land Management, Ecological Knowledge and Languages for Conservation. EcoHealth, 16¹, 171–176. <https://doi.org/10.1007/s10393-018-1380-z>

[org/10.1007/s10393-018-1380-z](https://doi.org/10.1007/s10393-018-1380-z)

Schuster, R., Germain, R. R., Bennett, J. R., Reo, N. J., & Arcese, P. (2019).
Vertebrate biodiversity on indigenous-managed lands in Australia, Brazil, and Canada equals that in protected areas. Environmental Science & Policy, 101, 1–6. <https://doi.org/10.1016/j.envsci.2019.07.002>

Shultis, J., & Heffner, S. (2016).
Hegemonic and emerging concepts of conservation: A critical examination of barriers to incorporating Indigenous perspectives in protected area conservation policies and practice. Journal of Sustainable Tourism, 24(8–9), 1227–1242. <https://doi.org/10.1080/09669582.2016.1158827>

Simmons, M. (2023).
Some feared the Gitanyow’s plan would hurt forestry. But land is protected – and industry is thriving. The Narwhal. <https://thenarwhal.ca/gitanyow-land-plan/>

Sobrevila, C. (2008).
The Role of Indigenous Peoples in Biodiversity Conservation. The World Bank. <https://sacredland.org/wp-content/uploads/2019/11/World-Bank-Indigenous-Peoples-in-Biodiversity-Conservation.pdf>

Social Ventures Australia. (2016).
Analysis of the Current and Future Value of Indigenous Guardian Work in Canada’s Northwest Territories. https://www.indigenousguardianstoolkit.ca/sites/default/files/Community%20Resource_Indigenous%20Leadership%20Initiative%20and%20Tides%20Canada_Analysis%20of%20Current%20and%20Future%20Value%20of%20Indigenous%20Guardian%20Work%20in%20Canada%27s%20Northwest%20Territories_0.pdf

Staveley, G. (2020).
How Indigenous Protected Areas can help build a better B.C. The Narwhal. <https://thenarwhal.ca/opinion-bc-indigenous-protected-areas-kaska/>

Syed, F. (2023).
“This land means everything”: The messy journey to create a national urban park in Windsor. The Narwhal. <https://thenarwhal.ca/windsor-ojibway-national-urban-park/>

The Nature Conservancy. (n.d.).
Bringing Indigenous Fire Back to Northern Australia. <https://www.nature.org/en-us/about-us/where-we-work/asia-pacific/australia/stories-in-australia/bringing-indigenous-fire-back-to-northern-australia/>

Townsend, J. & Craig, M.K. (2020).
Nature-Based Solutions: Indigenous-led Conservation and Carbon Storage in Canada. Conservation Through Reconciliation Partnership. https://metcalfoundation.com/wp-content/uploads/2020/02/CRP_Indig_NatureBasedSolutions_2020Report_final.pdf

Tran, T. C., Ban, N. C., & Bhattacharyya, J. (2020a).
A review of successes, challenges, and lessons from Indigenous protected and conserved areas. Biological Conservation, 241, 108271. <https://doi.org/10.1016/j.biocon.2019.108271>

Tran, T. C., Neasloss, D., Kitasoo/Xai’xais Stewardship Authority, Bhattacharyya, J., & Ban, N. C. (2020b).
“Borders don’t protect areas, people do”: Insights from the development of an Indigenous Protected and Conserved Area in Kitasoo/Xai’xais Nation Territory. FACETS, 5¹, 922–941. <https://doi.org/10.1139/facets-2020-0041>

United Nations Declaration on the Rights of Indigenous Peoples Act, S.C. 2021, c.14.

White, E. (2022).
Good for the land, good for the people, good for the economy: A call to action to recognize, support and implement Indigenous Protected and Conserved Areas and Indigenous Guardians in British Columbia. https://www.wcel.org/sites/default/files/publications/2022-01-20-ipcas-indigenous-guardians-discussion-paper_final_web-min.pdf

World Wildlife Fund. (n.d.).
Restoration in the Lower Fraser River. <https://wwf.ca/restoration-in-the-lower-fraser>

Zurba, M., Beazley, K., English, E., & Buchmann-Duck, J. (2019a).
Indigenous Protected and Conserved Areas (IPCAs), Aichi Target 11 and Canada’s Pathway to Target 1: Focusing Conservation on Reconciliation. Land, 8¹, 10. <https://doi.org/10.3390/land8010010>



The Moberly River drains out of the newly created Klin-se-za
Twin Sisters Protected Area in Treaty 8 Territory.
Front and back cover photos: David Moskowitz

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