

Reconciliation Through Research:

Braiding Indigenous and Western
Knowledge Systems for the Wellbeing of
Mountain People, Places, and Beyond

September 2022

Highlight Report of the Canadian Mountain Network

Prepared in Collaboration with Vancouver Island University's
Mount Arrowsmith Biosphere Region Research Institute



Acknowledgements

This report was researched and prepared by employees of the Mount Arrowsmith Biosphere Region Research Institute (MABRRI), where we learn, research, live, and share knowledge on traditional lands of Snuneymuxw, Quw'utsun, Tla'Amin, Snaw-naw-as and Qualicum First Nations. We would like to acknowledge that most MABRRI employees identify as non-Indigenous and were educated with Western worldviews, which may be reflected in the structure of this report.

As researchers and knowledge holders from across the land we now call Canada, we would like to acknowledge the rich and diverse history and culture of First Nations, Inuit, and Métis ways of knowing and doing. While we are grateful to have the opportunity through this work to learn how Indigenous and Western ways of knowing and doing can be respectfully braided together, we also recognize the traumas that Indigenous Peoples have faced and are continuously facing across Canada.

Image credits

p. 5 Photo from CMN project: Pacific Indigenous Protected and Conserved Area Innovation Centre (Jeremy Williams)

p. 7 Photo from CMN project: Níó Nę P'ęné – Trails of the Mountain Caribou (Pierre Emmanuel Chaillon)

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p. 26 Reconnecting with Traditional Foods at Moose Lake; Photo from CMN project: Łingít Kusteeyí (Tlingit Way of Life) (Aimee Schmidt)

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p.27 Photo from CMN project: Níó Nę P'ęné – Trails of the Mountain Caribou (Pierre Emmanuel Chaillon)

p. 30 Berry picking; Photo from CMN project: Explore, describe and develop a methodology to best account Indigenous perspectives on the value of Land Guardianship in Mountain Regions and the contributions to the biodiversity and well-being of their Nations (Norma Kassi)

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Back Cover Photo from CMN project: Níó Nę P'ęné – Trails of the Mountain Caribou (Pierre Emmanuel Chaillon)

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Use of Terms

The United Nations Declaration of the Rights of Indigenous Peoples (the *UN Declaration*):

The most comprehensive international human rights instrument to specifically address the economic, social, cultural, political, civil, spiritual, treaty, and environmental rights of Indigenous Peoples. The *UN Declaration* sets out minimum standards necessary for dignity, survival, and wellbeing of Indigenous Peoples. The *2021 United Nations Declaration on the Rights of Indigenous Peoples Act* is federal legislation which requires the alignment of Canadian laws with the *UN Declaration*, the creation of an action plan to achieve this alignment, and regular reporting to Parliament.

In this report, references to the *UN Declaration* will be in the context of the spirit and intent of the *UN Declaration*, which is to promote respect and recognition of the human rights of Indigenous Peoples as a necessary step towards reconciliation. Other human rights instruments such as the *American Declaration on the Rights of Indigenous Peoples* can also support a principled approach to the human rights of Indigenous Peoples.

The United Nations Sustainable Development

Goals (SDGs): A global call to action consisting of 17 Goals with correlating targets and indicators to be met as part of the 2030 Agenda for Sustainable Development. The Goals encompass social, environmental, and economic spheres, and are meant to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity.

Braiding Knowledge: The constructive, respectful, and holistic interplay between

Indigenous and non-Indigenous (Western) knowledge systems. The term braiding knowledge came to the fore in Robin Wall Kimmerer's book, *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants*. While there are numerous terms to describe the bringing together of Indigenous and Western knowledge systems, braiding knowledge is used in the context of this report; however, the term is not meant to be limited to any one method of collaboration between knowledge systems. More information can be found on page 17.

Ethical Space: Coined by Willie Ermine and informed by Roger Poole, Ethical Space refers to the respectful, neutral space between two knowledge systems that proposes a framework for engagement between diverse worldviews. Further explanation can be found [in this video by the Conservation through Reconciliation Partnership](#).

Two-Eyed Seeing: A guiding principle brought forward by Mi'kmaw Elder Albert Marshall, described as the gift of multiple perspectives treasured by many Indigenous Peoples.¹ Two-Eyed Seeing refers to learning to see from one eye with the strengths of Indigenous knowledges and learning to see from the other eye with the strengths of Western knowledges, as well as learning to use both these eyes together.²

Wellbeing: In the context of this report, wellbeing is a term that extends beyond economic means, and encompasses physical, emotional, and spiritual human wellbeing,

as well as that of the environment and the interconnections between the two, now and in the future. More information about wellbeing in the context of this report can be found on page 28.

Sustainability: A term of subjective meaning, sustainability in the context of this report

speaks to the holistic, yet diverse ways in which the wellbeing of society, environment, culture, spirit, and economy can be continuously tended to, in both present and future. More information about sustainability in the context of this report can be found on page 12.



About this Report

The purpose of this report is to highlight and publicly share that the Canadian Mountain Network's (CMN) research approach consists of braiding Indigenous and Western knowledge systems in ways that align with the overarching spirit and intent of the United Nations (UN) Sustainable Development Goals and the *UN Declaration on the Rights of Indigenous Peoples*. Information was gathered from CMN's funded initiatives through a series of interviews with researchers and knowledge

holders, and summarized through thematic analysis to highlight achievements. This report aims to illustrate the impacts and potential of braiding Indigenous knowledge and Western science in Canadian mountain systems and beyond. MABRRI and CMN both recognize that is continuous work to be done in terms of respectfully braiding Indigenous and Western ways of knowing and doing in the advancement of sustainability and sustainable development.

About the Canadian Mountain Network

Established in 2019 and funded by a 5-year research grant from the Government of Canada's Networks of Centres of Excellence program, CMN is a national not-for-profit organization that supports the resilience and wellbeing of mountain systems and beyond through research partnerships based on Indigenous and Western ways of knowing.

While mountains are the focus and foundation of CMN, it is recognized that these geological and cultural features create critical connections to other landscapes. Recognition and sustenance of these systems aims to address issues such as climate change from the top-down geologically, and the bottom-up socially. Despite its young age, and enduring the challenges of a global pandemic for much of its time in operation, CMN has supported over 200 researchers and trainees through:

CMN's research priorities:

1. Exploring how Indigenous Peoples apply Indigenous culture and knowledge to decision-making within mountain systems
2. Advancing an integrated, continental-scale understanding of the impacts of climate change and human activities on mountain systems
3. Identifying and developing innovative planning, risk, and governance models applicable to the unique nature of mountain systems
4. Exploring opportunities to support the viability and resilience of place-based livelihoods that sustain the resilience of mountain systems

- **17 place-based research projects**
- **7 strategic initiatives: cross-cutting initiatives focused on moving research forward with a spirit of innovation and reconciliation**
- **7 knowledge hubs: centres of activity that are co-led and co-developed by Indigenous Peoples, including Elders and knowledge holders, and Western researchers.**

*Throughout this report, research projects, strategic initiatives, and knowledge hubs will be referred to collectively as CMN initiatives.

Coherence: Creating Space for the UN Declaration & the SDGs to Work Together

It was acknowledged in Canada's 2022-2026 Draft Federal Sustainable Development Strategy that with the global threats to the health of humans and the environment, "solving the interrelated environmental, social and economic challenges of sustainable development has never been so important".³ While the Sustainable Development Goals (SDGs) provide a global framework for a more sustainable future, holistic and inclusive sustainable development cannot be fully achieved without coherence with complementary human rights principles, such as those outlined in the *UN Declaration on the Rights of Indigenous Peoples* (the *UN Declaration*). In Canada, the Truth and Reconciliation Commission (TRC) of Canada's Calls to Action and the National Inquiry into Missing and Murdered Indigenous Women, Girls, and 2-Spirit People (MMIWG2S) Calls for Justice are Indigenous-led initiatives that

support a pathway for improved sustainability through a lens of reconciliation. When used in tandem with international instruments such as the *UN Declaration* and the SDGs, Canadian perspectives such as the TRC Calls to Action and the National Inquiry into MMIWG2S Calls for Justice support a coherent strategy to combat hindrances to collective wellbeing of people and the environment, with no diminishment of rights. To support a holistic approach to sustainability, sustainable development, and reconciliation, coherence between a variety of strategies used in Canada is enhanced when centred around community needs and community-based action (Figure 1). Among CMN funded initiatives, this coherence is being demonstrated with a movement away from sole reliance on Western science to advance decision-making related to sustainability and sustainable development.

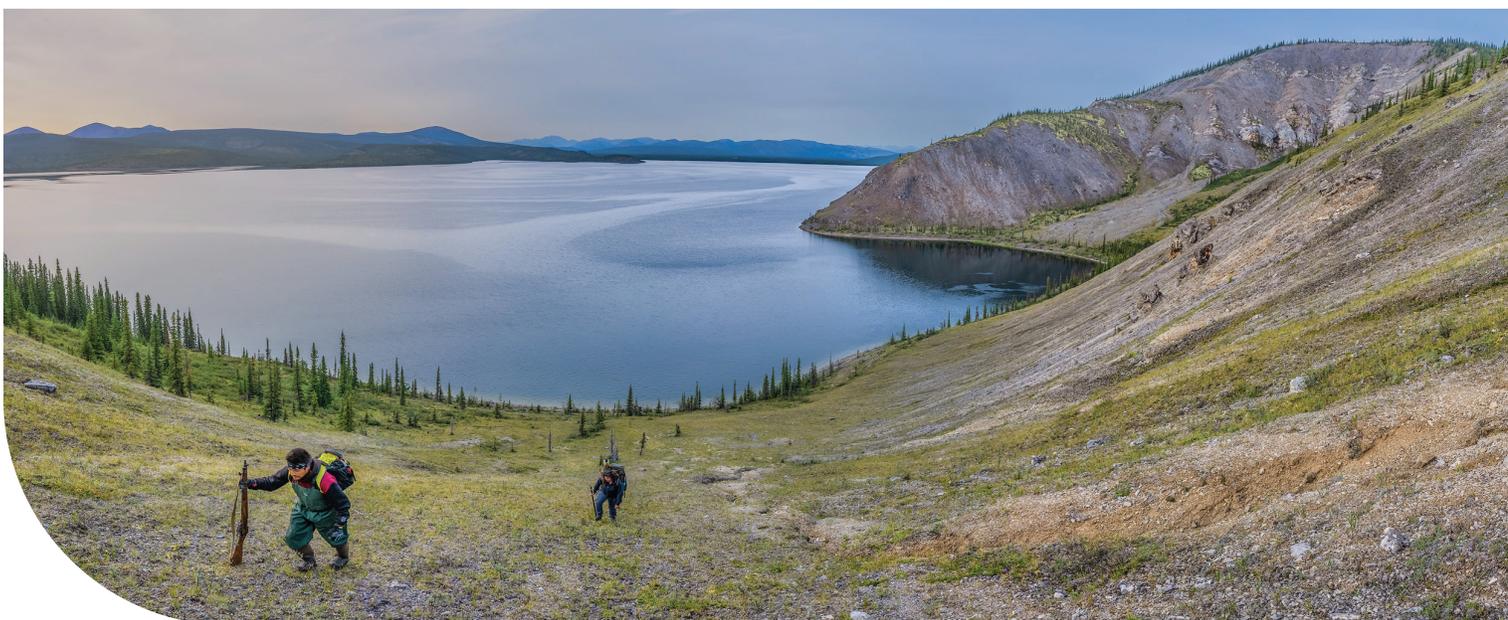


FIGURE 1: COHERENCE CENTRED AROUND COMMUNITY



COMING TOGETHER THROUGH WELLBEING

Wellbeing of humanity and the environment (and their interconnections) is at the crux of the *Leave No One Behind* principle of the 2030 Agenda for Sustainable Development, which represents a commitment to eradicate, end, and reduce inequalities and vulnerabilities that create disparities.

SDG 3 (Good Health and Wellbeing) outlines a global call to action in the enhancement of wellbeing for all, as do the ambitions, targets, and indicators of Goal 3 in the Canadian Indicator Framework. While this is an example of a commendable pledge, deconstruction of societal barriers is required to allow for true inclusion and equity. In Canada, Indigenous Peoples face disproportionate inequity due to ongoing impacts of colonization. While progress is being made towards reconciliation with Indigenous Peoples and building renewed relationships, circumstances do remain in which Indigenous Peoples are left behind. Canada's 2030 Agenda National Strategy recognizes that there are sparse explicit references to Indigenous Peoples in the SDGs, with particular lack of acknowledgement to Indigenous ways of knowing, and conceptualizations of wellbeing that expand beyond economic potential. This is one reason why numerous human rights principles, when used collectively, hold capacity to provide more holistic support, with particular focus on those at risk of getting left behind. Coherent commitment to the *UN Declaration* and the SDGs is a step towards ensuring Indigenous Peoples of Canada have a legally regulated minimum standard for rights and wellbeing.⁴

To follow suit on the *Leave No One Behind* principle, sustainable development cannot be

achieved while leaving Indigenous Peoples behind, and advancing initiatives that are driven by Indigenous knowledge and the needs of First Nations, Inuit, and Métis Peoples are at the crux of moving towards an inclusive and sustainable future. Indigenous knowledge and self-determined involvement is imperative in advancing the SDGs; however, there must be a grounded understanding of the power imbalances between Indigenous and Western knowledge systems when braiding the ways of knowing together. Working towards the *UN Declaration* and the SDGs in Canada concurrently creates more space for Indigenous Peoples to contribute through self-determination and free, prior, and informed consent, and for non-Indigenous Canadians to take steps towards reconciliation—both of which are inextricably linked to advancement of collective wellbeing and sustainable development. Action 18 in 30 Actions Towards 2030 outlines the Government of Canada's intentions to enhance data disaggregation and integration of Indigenous and community-based research to widen the scope of wellbeing in sustainability.⁵ As a unique network of researchers and knowledge holders across Canada, CMN's prioritization of community-based research is outlining the broadened path forward that makes space for reconceptualization of wellbeing within sustainability initiatives.



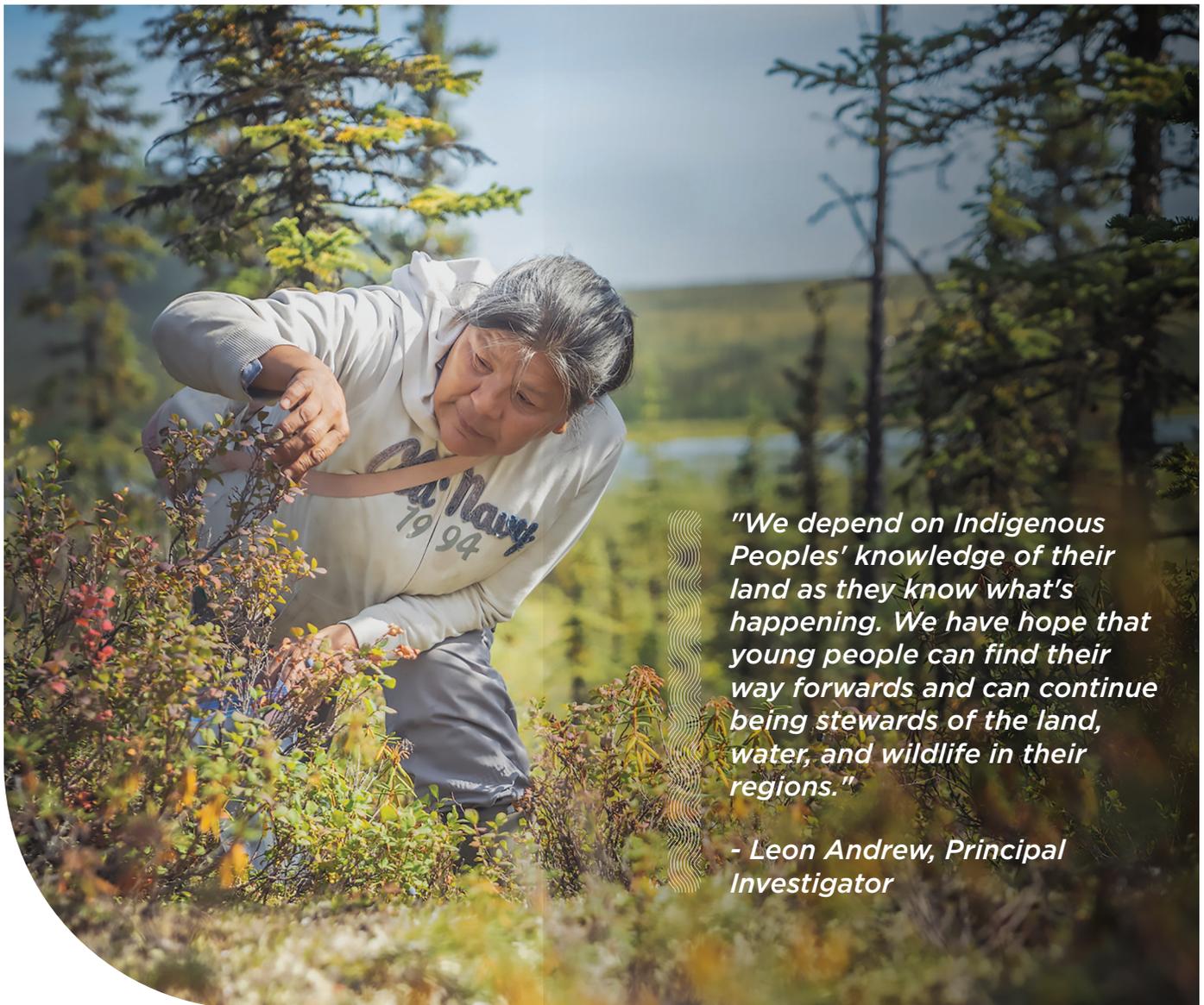
"The process for SDGs going forward has got to have Indigenous Peoples sitting at the forefront of those tables, at every level, from the United Nations right to local communities."

-Norma Kassi, Principal Investigator

Funding focused on activities that harness local knowledge holds invaluable potential for larger scale impact. This is critical in supporting Canada's commitments to sustainability through a lens of reconciliation. CMN initiatives that work from the bottom-up and prioritize local perspectives on issues such as the climate crisis and loss of biocultural diversity collectively impact wellbeing on a range of scales, from local community, to mountain regions, to nation-wide.

"In the context of climate change, individual First Nations have Land Guardians that understand the traditional territory and ecosystems at a local scale of knowledge... The consideration of scaling is really important for climate change; we need to take local knowledge and situations and scale them up."

-Dennis Zimmermann, Knowledge Co-Leader



"We depend on Indigenous Peoples' knowledge of their land as they know what's happening. We have hope that young people can find their way forwards and can continue being stewards of the land, water, and wildlife in their regions."

- Leon Andrew, Principal Investigator

BRAIDING KNOWLEDGE TO MAKE WAY FOR COHERENCE

Uplifting and creating space for self-determined Indigenous ways of knowing and doing through on-the-ground actions such as research and knowledge sharing is vital in progress towards sustainable development, which must be preceded by reconciliation. To that end, support for community-based actions relevant to the *UN Declaration*, the TRC Calls to Action, and the National Inquiry into MMIWG2S are vital in addressing the inequalities and vulnerabilities that are faced by Indigenous Peoples in Canada. By using creativity, taking time to build relationships, and working towards common goals, CMN demonstrates important first steps to reconciliation through collaborative research that braids Indigenous knowledge with Western science. Braiding knowledge is an exchange⁶ that is not intended to replace any ways of knowing, and can only take place with an established understanding of historical and systemic injustices, a shared, representative language, and a commitment and dedication to the long-term.⁷ This process opens space to work towards instruments—such as the *UN Declaration* and the SDGs—that tie together the wellbeing of people and the planet in ways that foster peace, prosperity, and partnerships. By meaningfully braiding knowledge systems with respect and reciprocity, opportunities are created to advance sustainability through a lens of reconciliation, wherein the human rights of Indigenous Peoples are prioritized to close the gaps that leave them behind. This includes recognition of self-determination and return of autonomous control over knowledge, land, and wellbeing in CMN funded initiatives. Reconciliation and braiding knowledge

systems are intrinsic to sustainability. Canada's commitment to sustainable development is being achieved in action by those who hold local knowledge and support collective wellbeing: First Nations, Inuit, and Métis Peoples across Canada.

With initiatives that range in scope from revitalizing Indigenous cultural practices, to enhancing wellbeing of wildlife, to understanding social, ecological, and economic impacts of climate change, CMN can be viewed as an example-in-action of the successes of collaboration between Indigenous and Western knowledge in research and knowledge sharing. Each of the initiatives funded by CMN align with the SDGs in their own unique way, while also demonstrating an overall commitment to the *UN Declaration*. This creates space for self-determination, community-based research, and strong principles of ethics to be woven throughout.





Responsibilities: Accountability & Transparency

RECONCEPTUALIZING SUSTAINABILITY

The definition of sustainability is not simple and cannot be considered universally encompassing of all worldviews. In general, sustainability can be considered a paradigm in which environmental, cultural, societal, and economic factors are balanced, through foundational principles such as equity and equality, poverty elimination, environmental preservation and restoration, conservation of natural resources, and peaceful societies. However, sustainability can be very context specific, especially with considerations of the differences between Indigenous and Western worldviews.

“When we try to define sustainability in a Traditional Knowledge aspect or from that perspective, one thing that’s important to recognize is language. Different Nations have different terms for sustainability, conservation, and biodiversity. It’s not always a noun-based, one-to-one relationship.”

- William Snow, Principal Investigator

In many cases, Indigenous knowledge holders may not have exact terms or definitions for concepts that Western governance and science would associate with sustainability because Indigenous Peoples were living in harmony with the Earth prior to contact with settlers.

The concept of sustainable development was defined by the Brundtland Commission Report as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”.⁸ The Brundtland Commission Report acknowledges that the environment does not exist as a sphere separate from human actions, needs, and consequences, and that challenges arise in pursuing global development and economic growth. Sustainability and sustainable development are ever-evolving and progressive concepts. Today, integrative views of sustainable development are becoming more widely accepted and speak to achieving and maintaining collective wellbeing. Indigenous and local knowledge holders are invaluable in the holistic and intergenerational approach to sustainability and sustainable development and thus, wellbeing.

For researchers and knowledge holders within CMN, sustainability is practiced and conceptualized in a variety of ways (Figure 2). For example, in some contexts, sustainability may be conservation-focused to protect traditional territories from excessive resource extraction, while in other contexts, sustainability may be more focused on building long-term relationships to maintain the capacity of small communities. Now more than ever, it is critical to recognize and be open to the diversity of ways in which sustainability and sustainable development can be advanced.

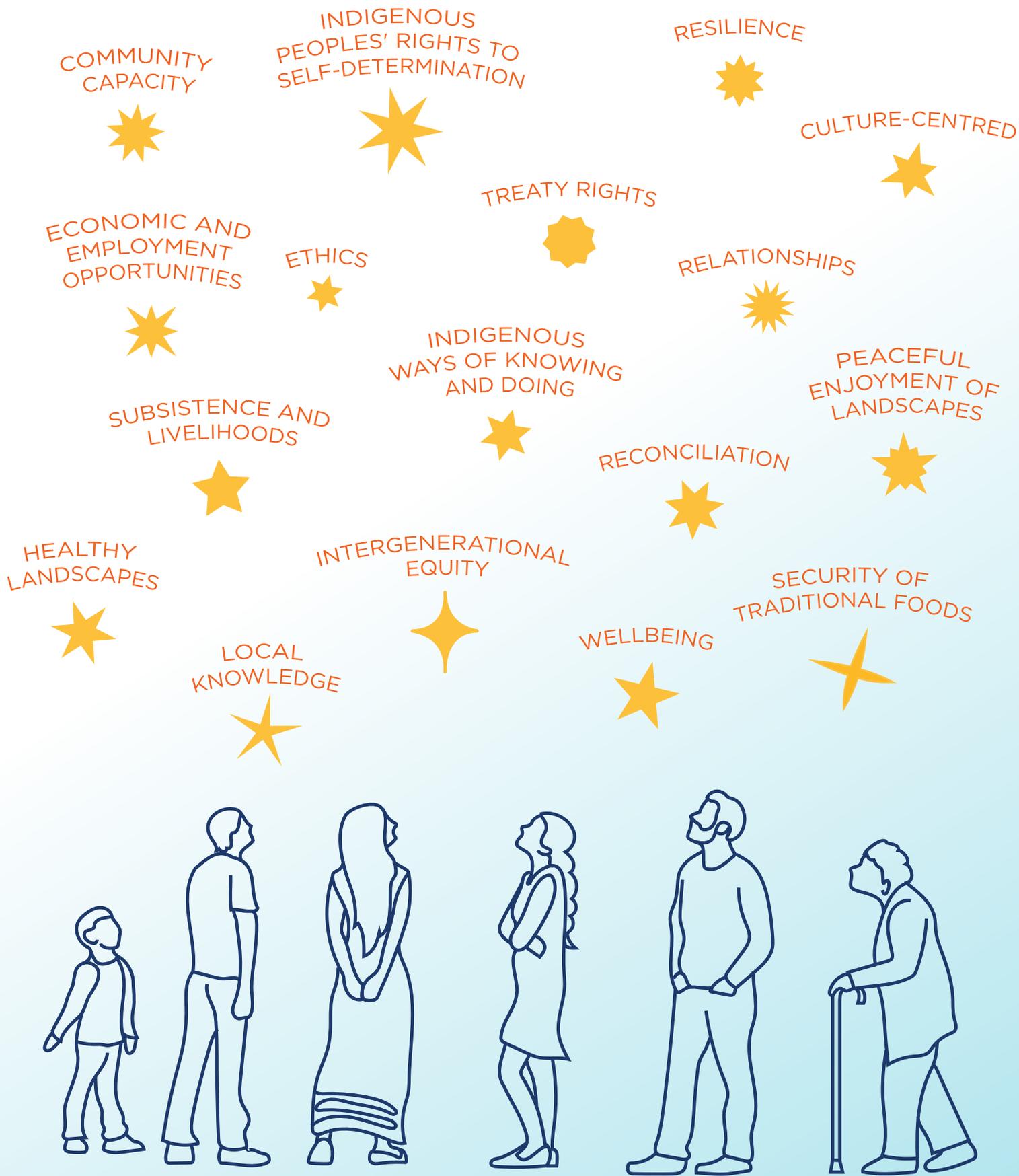


FIGURE 2: CONCEPTUALIZATIONS OF SUSTAINABILITY WITHIN CMN INITIATIVES

For example, the Government of Canada has implemented the Federal Sustainable Development Act as an approach to ensure accountability and transparency in progress towards sustainable development. On the other hand, Mountain Dene/Dena of Tulí t'a, Norman Wells, and Tu ǂidlini (the community of Ross River, Yukon Territory), are concerned about their ability to maintain ways of life in the areas where they live, because of the impacts from climate change and overall environmental degradation. Therefore, a CMN funded research initiative—*Nío Neǂ P'ǂneǂ: Trails of Mountain Caribou*—was developed to learn and share knowledge, where the communities are in control of negotiating the values that are needed to survive and to achieve social and economic wellbeing. Through this work, the SDGs are being addressed with research on

sustainable livelihoods, on-the-land learning opportunities involving families, including women, men, Elders, harvesters, and youth, and working in partnerships to identify actions required in response to climate change impacts.

In order to approach sustainable development through a truly holistic lens and balance the social, cultural, environmental, and economic pillars of sustainability, the concept must occur in a polycentric space where the integrity of both Indigenous and non-Indigenous knowledge systems is appropriately respected. Those working within initiatives funded by CMN demonstrate accountability in understanding that everyone holds different perspectives and may view sustainability and sustainable development through different lenses.

TRANSPARENT INFORMATION SHARING

To apply holistic considerations of progress towards sustainable development, it is vital to consider inclusive, transparent, and meaningful measures to share ideas, best practices, gaps, and challenges. However, prior to the sharing of knowledge and information—especially when provided to researchers, scientists, or governing bodies by Indigenous Peoples—

free, prior, and informed consent should be considered the minimum standard of consent. Through CMN initiatives, researchers and knowledge holders have demonstrated ways in which research can be guided by respect, reciprocity, responsibility, and relevance, such as providing training on the principles and practice of Ethical Space.





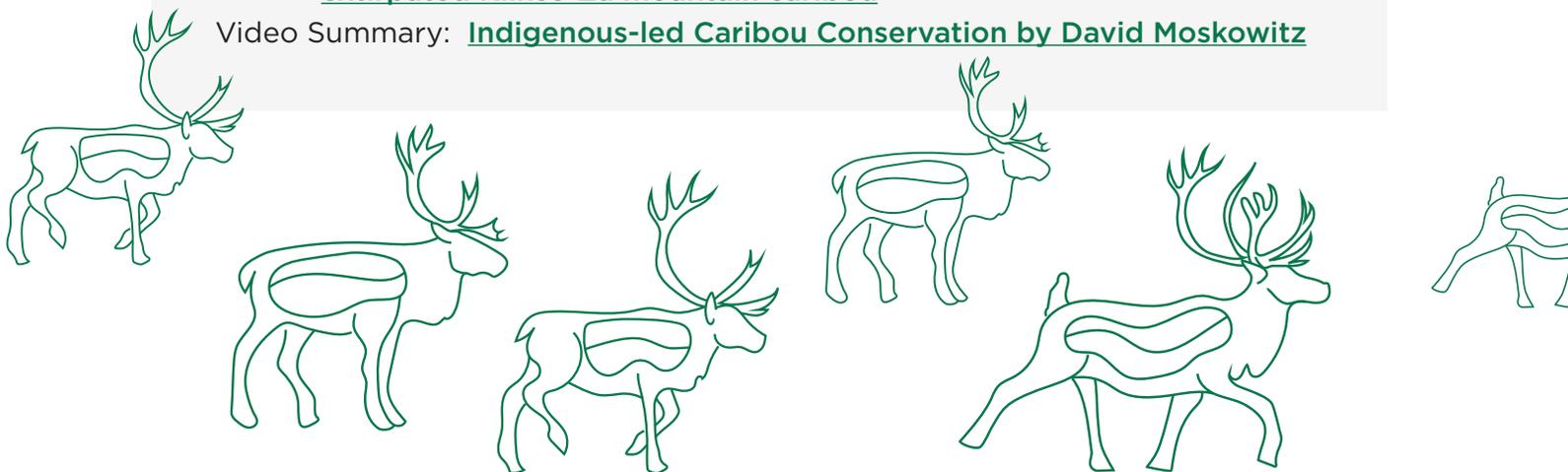
Western academics have come together with West Moberly and Saulteau First Nations through the shared interest in stewarding the lands and elevating caribou abundance that inhabit the northern and central Rocky Mountains of British Columbia and Alberta. In this project titled *Rekindling Indigenous-led Land Stewardship and Cultural Connections in the Rockies*, there is an understanding that Western perspectives of sustainability may be viewed through a different lens than First Nations perspectives on sustainability, which include a variety of aspects such as peaceful enjoyment of the landscape, Treaty rights, subsistence, and livelihood. However, for all researchers and knowledge holders working on this project, a common goal brings them together in a good way: the conservation of caribou that is closely linked to the wellbeing of the landscape. “[Part of the goal of this project is to work through] unprecedented collaboration for successful conservation... The desire for a holistic approach [to conservation] is reflected in the fact that the caribou are an umbrella species for the landscape - if the caribou are not doing well then it brings about the idea that there must be something on the landscape that is not working” (Clayton Lamb, Knowledge Co-Leader). This project is also probing the space of what sustainable development could look like, in the context of West Moberly and Saulteau First Nations values. The caribou program underway is set up to test best practices for things like areas where the natural resource industry is permitted to operate through a caribou-specific lens, “acknowledging that some level of development may be required but needs to be done with a lighter and ecologically sensitive footprint” (Clayton Lamb, Knowledge Co-Leader).

To learn more:



Paper: [Indigenous-led conservation: Pathways to recovery for the nearly extirpated Klinse-Za mountain caribou](#)

Video Summary: [Indigenous-led Caribou Conservation by David Moskowitz](#)



By doing so, the conditions are created to collaborate between worldviews in a non-hierarchical, equally representative, and respectful setting with a mutual willingness to learn.⁹ Positive and continuous consent must have a baseline of ethical standards that are adaptable and based on community priorities, protocols, and contextual circumstances. Additionally, Indigenous knowledge must be credited in appropriate ways. In many cases when research results have been informed by Indigenous knowledge, it is often only the scientists who receive credit for the work, as Indigenous knowledge is not credited in the same way as Western scientific knowledge.

Of particular importance is ensuring that information from knowledge shared is accessible in ways that are ethical and intentional. In northern regions of Canada, such as Yukon Territory, First Nations have welcomed visitors and scientists and encouraged learning more about northern and remote regions in order to enhance their capacity. However, issues arise when researchers take information or knowledge that is shared by Indigenous Peoples and do not return to the area, do not continue engagement, or do not share the results of the research back to those who provided the information. In terms of research and knowledge sharing that is supported by CMN, a “no more research about us without us” principle is not

only encouraged to all researchers, but also self-determined by Indigenous Peoples who want to be involved. For example, for many initiatives funded by CMN, the end users of the knowledge include those that have helped to create the knowledge. Additionally, knowledge is often mobilized in ways that are understandable and accessible to various audiences to allow for sharing different types of knowledge.



"In addition to multiple ways of knowing and allowing space for different narratives, [the Mountain Legacy Project] is also focused on multiple ways of seeing. We don't want to assume that's what's visible to one viewer is what's most visible to others. Part of different ways of knowing includes the different ways we interact with things."

-Sarah Jacobs, Strategic Initiative Project Assistant

To work collaboratively in research, it is fundamental that information is shared with local knowledge holders and community members in accessible and engaging ways, beyond textual content. For example, a project taking place in the community of Rigolet, Labrador is contributing to the development of [a film that shares the stories of Inuit facing the caribou conservation crisis.](#)

Braiding Knowledge: Opportunities for Knowledge Co-Production

BRAIDING KNOWLEDGE

In keeping with the 2030 Agenda's emphasis on partnerships for sustainable development, CMN's partnerships take many forms, wherein researchers and knowledge holders work together with educational institutions, government institutions, non-government organizations, Indigenous partners, and business and community partners. CMN's main focus is on fostering research partnerships between Indigenous and Western ways of knowing. These partnerships and collaborations are centred around braiding knowledge, a process written about by Robin Wall Kimmerer in her award-winning book, *Braiding Sweetgrass: Indigenous wisdom, scientific knowledge and the teaching of plants*. Braiding knowledge is the coming together of Indigenous and Western knowledge, in which each knowledge system is a strand of a braid; one strand is Western knowledge, another is Indigenous knowledge, and the third strand unites the first two, making the braid stronger.¹⁰ However, processes and partnerships associated with braiding knowledge take many forms, and

the term cannot be considered universally representative of how all First Nations, Inuit, and Métis Peoples approach knowledge sharing and collaboration. For some, other terms may be more relevant to their ways of knowing and being, while for others, sharing knowledge does not need to have a defined term. For example, Stoney Nakoda First Nation has adopted the term *Biculturalism* as written about by late Chief Snow in describing combining wisdom of both Western knowledge and Traditional knowledge to become bilingual and bicultural—a process which must be led by Elders.¹¹ On the other hand, for Inuvialuit Peoples, a term does not currently exist to describe collaboration between Inuvialuit ways of knowing and Western ways of knowing. Overall, the common themes in concepts like braiding knowledge include being reflexive, listening openly, acknowledging biases, having flexibility in approach, creating space for different perspectives, accepting that all forms of knowledge are valid, and having two-way, open communication.





A flagship initiative of CMN, the Canadian Mountain Assessment (CMA), is a 3.5-year long project that will clarify what we know, do not know, and need to know about Canada's diverse and rapidly changing mountain systems. The initiative arose as an opportunity to advance a more holistic assessment approach through weaving Indigenous and Western scientific knowledge of mountains together in a good way. The final output of this initiative - a multi-section assessment report - will be written by a variety of authors and include insight from First Nations, Inuit, and Métis knowledges. Adopting a multiple evidence base approach - a framework developed to support the respectful braiding of Indigenous and Western scientific knowledge - the CMA is working within the concept of Ethical Space where no one kind of knowledge is prioritized over another. In situating the CMA among braiding knowledge landscapes, project stewards acknowledge that "braiding knowledge is a process in and of itself, rather than an outcome. As we aspire towards braiding, we're taking steps and not necessarily expecting that we'll get there, but that there are teachings in the journey itself" (Madison Stevens, Project Assistant). Using the analogy of the aspiration of braiding knowledge as climbing a mountain, project leader Graham McDowell describes, "When preparing for the climb, we're creating space for multiple ways of knowing, which is a precondition for braiding knowledge. As we climb higher on the mountain, we begin working together more substantively, perhaps within our knowledge systems. This can be thought of as interdisciplinary sciences or Inuit, Métis, and First Nations individuals speaking about their shared and differing understandings and knowledges. Standing together at the summit would then be an ideal of respectfully braiding ways of knowing. All along the journey, we're enhancing our understanding of mountain systems, but it's also the case that if we only ascend part of the way, we are doing so together and we learn together. This then provides us with more information and skills to climb higher the next time we embark on the work."

More about the Canadian Mountain Assessment on
[this episode of the Canadian Mountain Podcast.](#)

RELATIONSHIP BUILDING

Generally, collaborations between Indigenous knowledge holders and Western academics or scientists are fostered to work towards a common goal and empower positive change. CMN initiatives that bring together Indigenous and Western ways of knowing and doing hold wellbeing—in all its forms—at their core. Whether an initiative is focusing on bison reintroduction in Banff National Park through cultural monitoring, or assessing the state of mountains across Canada, the connections between ecological, sociological, spiritual, cultural, and economic wellbeing are at the core of braiding knowledge. While braiding knowledge is initiated with good intentions, it must be recognized that research continues to occur predominantly through the lens of Western science.

In committing to improved models of research that uplift the capacity of Indigenous Peoples to self-determine their research priorities, commitments to reconciliation and decolonization of research must be enacted. As demonstrated by Indigenous-led and co-led CMN initiatives, practicing braiding knowledge through a Two-Eyed Seeing approach and prioritizing time towards building relationships between Indigenous and non-Indigenous researchers are prerequisites for working towards reconciliation. Initiatives that are co-led by Indigenous and non-Indigenous researchers and have seen successes in collaborating through different ways of knowing did not come together overnight. For some, years of work have gone into building relationships that lay the foundation

for reciprocal collaboration. CMN research teams that have shared success stories of braiding knowledge systems have nurtured relationships built through long-term, meaningful engagement that is centred around the needs of First Nations, Inuit, and/or Métis Peoples.

When preceded with respect and reciprocity, the relationship building that goes into braiding knowledge inherently follows principles of Ethical Space, making way for Two-Eyed Seeing, and an increased capacity for mutual understanding and shared pathways forward. In doing so, the *Leave No One Behind* principle of the 2030 Agenda is advanced by braiding principles of reconciliation into the pursuit of a sustainable present and future. By uplifting Indigenous knowledge, themes of the *UN Declaration* relating to self-determination, economic and social rights, participation in decision-making, education and information, and cultural and linguistic rights hold greater supportive capacity. Additionally, important movements towards conservation and protection of environment, lands, territories, and resources can be made through braiding knowledge.



"Fixating on a particular approach [to braiding knowledge systems] hasn't worked in my experience; it works better to come in accepting all frameworks, models, and spaces, and try to do things in a good way"

-Elizabeth MacDonald, Knowledge Co-Leader

While scientific research methods are imperative in learning more about the environment and how to protect and conserve it, Indigenous knowledge is paramount in lending historical context, local knowledge, and insight to landscapes and wildlife that western science may not have.



COLLABORATIVE LEADERSHIP

The ambitious undertakings of the 2030 Agenda, advancing reconciliation, and implementing the *UN Declaration* requires effective leadership and governance. A core value of effective leadership and governance is meaningful and reciprocal collaboration. Therefore, co-leadership is inherent in successful progress towards the *UN Declaration* and the SDGs. CMN's leadership is inclusive of multiple ways of knowing, demonstrating that the value of collaboration helps to articulate a vision for accelerated impact. CMN staff, the Board of Directors, the Research Management Committee, and the Audit, Finance, and Risk Committee all bring together individuals from diverse backgrounds with varying perspectives. Importantly, CMN is guided by an Indigenous Circle of Advisors that helps inform the Network's decision-making. Across the 17 research projects, 7 knowledge hubs, and 7 strategic initiatives that are funded by CMN, leadership and governance processes are individually determined, and 19 are led or co-led by Indigenous peoples. In alignment with the 2030 Agenda's *Leave No One Behind* principle, these initiatives are primarily centred around community-informed research priorities and are executed

through collaborative research processes. While leadership in various forms is needed to progress towards positive change, a key contributor in advancing the SDGs in Canada is community-based action. Initiatives that demonstrate implementation of bottom-up leadership, community-informed leadership, and co-leadership through braiding knowledge are among those that are creating the most sustainable pathways to an improved future of inclusivity and reconciliation.

Further, in maintaining accountability in collaboration, inclusivity of all peoples and aspects of representation, such as age, gender, and sexual orientation is foundational in many CMN research processes. For example, "Yukon First Nations society is matriarchal, so the women are very strong and they're the leaders. This is a positive change from what used to be a very colonial system, and we are now seeing many more women involved as First Nations representatives" (Elizabeth MacDonald, Knowledge Hub Co-Leader, 2022). However, considerations of intersectionality and distinctions between First Nations, Inuit, and Métis ways of being are important to consider in appropriately working towards equity and equality.



Enhancing the Reintroduction of Plains Bison through the Inclusion of Cultural Monitoring and Traditional Knowledge in Banff National Park (the Bison Cultural project) focuses on the restoration of Plains Bison in Mîni RHPa Mâkoche - the area now known as Banff National Park. The Stoney Nakoda First Nations have been in this mountain region since time immemorial, with deep connections to the landscape. Plains Bison play a pivotal role in Stoney Nakoda lifestyle and livelihood, also contributing to essential components of cultural identity and spirituality. The near extinction of bison in the area therefore posed many consequences for Stoney Nakoda along with other Indigenous groups. In 2017, Parks Canada released 16 bison into the Park, which has now grown to a herd of over 60 animals. Through a long-standing relationship with Parks Canada, Stoney Nakoda initiated the Bison Cultural project to complement “Parks Canada’s existing efforts to monitor the success of bison reintroduction by examining and describing the cultural and spiritual significance of the Bison Reintroduction to Mîni RHPa Mâkoche through a cultural monitoring program”.¹² Within the context of Biculturalism, the cultural monitoring approach brings together Western Science and Stoney Nakoda Traditional knowledge, utilizing Traditional Knowledge components such as ceremony, Elder interviews, Elder reconnection, outreach, and field work, along with Western science components such as planning, field work, and report writing. In addition to successful reintroduction of bison on the landscape, this collaborative approach has helped restore Stoney Nakoda connection to these lands (and thus, wellbeing), and demonstrated that Stoney Nakoda knowledge enhances understanding of bison behaviour and impact to the landscape. Collaboration has also enhanced support of Target 15 of Canada’s 2020 Biodiversity Goals and Targets, and aligns with TRC Call to Action #57 and Articles #25 and #26 of the *UN Declaration*.

To learn more:



[Stoney Nakoda First Nations Final Report and Recommendations](#)



COMMUNITY-DRIVEN KNOWLEDGE SHARING

For CMN initiatives that work in and around Indigenous communities, community members drive the questions of inquiry, facilitate the research as much as possible, and are the knowledge holders of the research. In this regard, uplifting Indigenous self-governance is key in working collaboratively between Indigenous and Western ways of knowing. While CMN's research partnerships intend to inform decision-making and action, it is acknowledged that the drivers of change are community members themselves, as they know what they want and need. For example, researchers working in remote areas of Canada such as Labrador and the northern territories hold an understanding that in those regions, knowledge of local First Nations, Inuit, and Métis Peoples is deeply grounded in regionally-tailored experience and is better suited to make recommendations for decision-making because Western science has not worked extensively in that area. Many of the CMN research initiatives that are underway will provide data and results that are important for decision-making at provincial or federal levels; however, primary objectives for some projects that are Indigenous-led or co-led come from communities wanting to enhance their own governance.



"This is a bottom-up project, where Kluane First Nation identified their desire to build their capacity around research and to gain knowledge of and access to research outputs that stem from activities conducted on their territory, which they have historically not been privy to."

-Sonia Wesche, Knowledge Co-Leader

For many non-Indigenous researchers within CMN, it is acknowledged that when doing community-based research, open and ongoing dialogue has helped to provide space for First Nations, Inuit, and Métis communities to choose research priorities that are relevant to them, as well as determine their level of involvement in research and knowledge sharing initiatives. Providing Indigenous Peoples with control over research that takes place in their communities, on their traditional territories, and impacts their wellbeing opens space for collaborative systems of accountability. In doing so, there is an emphasis on championing Indigenous leadership and self-determination. Prior to engaging with Indigenous Peoples, the decision to engage (and level of engagement) must be led by Indigenous Peoples. In this sense, non-Indigenous researchers that have been working with Indigenous researchers through CMN initiatives have learned that the capacity of First Nations, Inuit, and Métis Peoples may not allow for engagement to occur through Western constructs. Similarly, priorities among these communities often change with varying circumstances. For example, a research team working on caribou conservation may be able to prioritize that work when circumstances allow, but capacity and resources will shift when urgent matters arise, such as responding to the COVID-19 pandemic or the impacts of natural disasters.

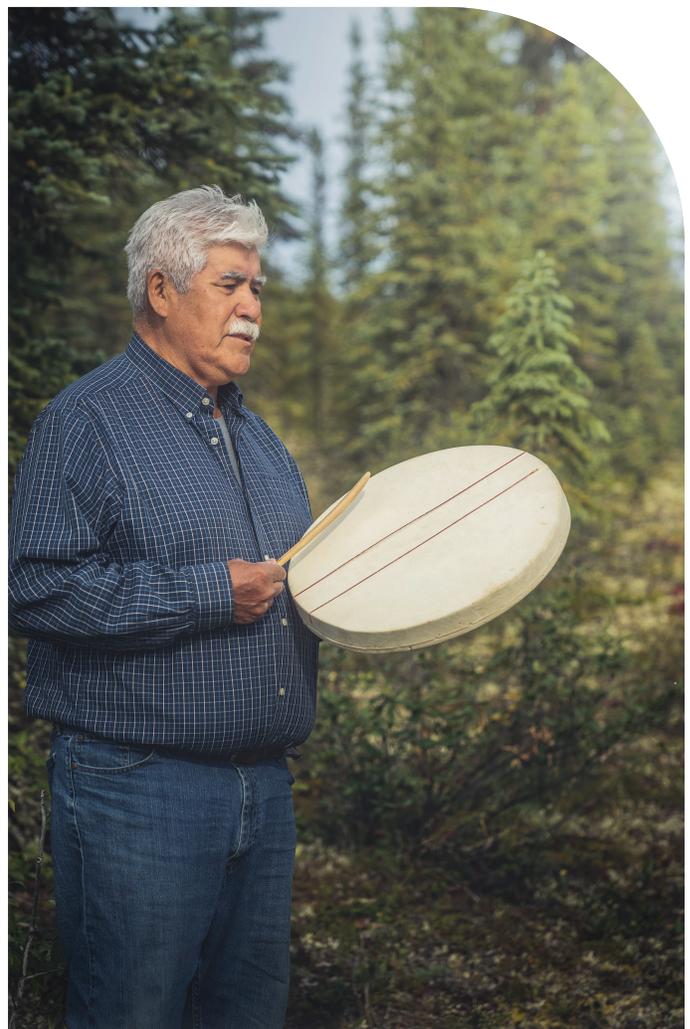


Reconciliation Through Research: Indigenous Peoples' Rights to Self-Determination

RESEARCH IN ETHICAL SPACE

Indigenous Peoples' rights to self-determination in a research setting requires conditions that allow Indigenous Peoples to share knowledge in a safe and ethical manner. CMN supports its funded initiatives in a way that emphasizes self-determination of Indigenous Peoples. This requires moving away from a solely Western approach to research, knowledge dissemination, decision-making, and informing policy. Rather than conducting research that involves Indigenous Peoples, as has been common historical practice in Western research, CMN creates space for Indigenous Peoples to determine and implement research priorities and practices, share knowledge, and build capacity in ways that are meaningful to them. As a result, CMN supports place-based research that is Indigenous-led and supported by Western science. One pathway that is followed to facilitate research with Indigenous and Western knowledge is through the application of Two-Eyed Seeing, fostered in Ethical Space. Keys to maintaining Ethical Space are being mindful of biases and creating space for effective listening and communication. This allows space for communication about Indigenous history, culture, and values, where truth can be spoken, and pathways forward can be determined. In this atmosphere, Two-Eyed Seeing, or the ability to see with two knowledge systems, can occur.¹⁴

Because Western Science is predominant in research settings, specialized support of Indigenous leadership is required to overcome barriers and achieve greater representation in research and knowledge sharing. Canada's 2030 Agenda National Strategy states, "upholding the rights of Indigenous Peoples to self-determination will enable Canada to achieve the goals of the 2030 Agenda".¹⁵



Demonstrating this statement in action, funded initiatives within CMN’s umbrella have utilized a variety of practices to support Indigenous leadership and collaboration in Ethical Space, including: respecting the right to free, prior and informed consent; following First Nations Principles of OCAP® and the Tri-Council Policy Statements outlining ethical conduct for research involving humans and specifically First Nations, Inuit, and Métis Peoples of Canada; and aligning with the TRC Calls to Action, the *UN Declaration*, and local Indigenous law.



"This is the first funding source that is so aware and sensitive about Indigenous rights and respect for participants. It's empowering to attend meetings where this space is created, and hopefully this continues to be the way of the future. All of this aligns with UNDRIP."

**-Catherine Lambert,
Knowledge Co-Leader**

STEPS TOWARD DECOLONIZING RESEARCH

Support of Indigenous leadership in research requires movement towards decolonization of the research process. This can be achieved by taking various approaches, dependent on context and place, and requires recognition of the impact of Canada’s colonial history on First Nations, Inuit, and Métis Peoples. Elements of research decolonization have occurred within CMN funded initiatives by the applications of Indigenous leadership, and are made possible in Ethical Space and empowerment through cultural revitalization. As Ethical Space is the baseline in which the Two-Eyed Seeing approach can be adopted, it is also a baseline in which decolonization of research practices can occur, to create a more equal setting for braiding knowledge.

CMN works to broaden the potential for community-based research by loosening the boundaries of historic, scientific research and creating space for self-determined, Indigenous-led research—which is land-based, fluid, and based on lived experiences. This approach allows research to be more iterative and reflexive, focusing less on short-term deliverables and more on creating relationships for sustained, positive outcomes. Within CMN initiatives, this includes viewing Indigenous law as law, working through respect-based collaboration, creating space for cultural protocol, and upholding collective responsibility. For example, several initiatives have allocated time and funding towards facilitating cultural practices such



as hosting ceremonies and gatherings that create opportunities for intergenerational knowledge sharing between Elders and youth. In these scenarios, those from a Western science background are given opportunities to observe, listen, and reflect on local cultures and consider flexibility within Western science methods. Adapting research processes in this way creates space for cultural revitalization, demonstrated by CMN initiatives through

CULTURAL REVITALIZATION

By supporting Indigenous Peoples' rights to self-determination and decolonization of the research process, cultural revitalization is a meaningful element of CMN funded initiatives. Cultural revitalization has strengthened Indigenous cultural sustainability, and intersects strongly with environmental sustainability. Conducting research on the land that is guided by Indigenous and community-based research priorities has allowed Indigenous researchers within CMN initiatives to reconnect with their landscapes. Place-based priorities have provided an opportunity to strengthen a sense of place, allowing Indigenous Peoples to protect biodiversity in traditional ways, and provide opportunities for storytelling and to share teachings. Among CMN initiatives, cultural revitalization activities may include the facilitation of

land-based learning, addressing place-based priorities, and language preservation and revitalization activities. In these initiatives, decolonization of the research process has also been reported to build capacity, both by providing training opportunities to Indigenous communities and youth, and by supporting Indigenous research priorities and methodologies.

traditional knowledge workshops, Elder-youth mentor opportunities, creation of Traditional Knowledge maps, community programs, and place-name revitalization. Through activities such as these, research initiatives are not only gaining deepened understandings of the interconnections between culture, spirit, environment, and wellbeing, but are also building capacity for Indigenous Peoples to reconnect with their local cultures and languages, many of which are at risk of being lost. The applications of cultural teachings, land stewardship, protection of sacred sites, and language preservation centre the human rights and wellbeing of Indigenous Peoples at the core of research and knowledge sharing among CMN initiatives.





In British Columbia's north, the T'akhu Á Tlén Conservancy is working with Taku River Tlingit First Nation to apply Tlingit law as a guiding force to rebuilding relationships between wildlife and humans. The initiative arose in response to existing colonial wildlife management structures that do not adequately consider Tlingit laws and values, which has had negative impacts on culturally important wildlife. To revitalize Tlingit law and connect community members to their culture, CMN funding has leveraged opportunities for intergenerational knowledge sharing and reconnecting with the land, cultural practices, and Tlingit language. A knowledge mobilization workshop was hosted involving partnerships that brought 18 participants and 3 Knowledge Holders together over a multi-day hike on a traditional Tlingit trail. This event aided in connecting participants with the land, shared teachings from Elders, and discussed Tlingit law in the context of language, decolonization, and lived experience. Also held was a 5-day long camp consisting of education about Tlingit language, traditional activities, and Tlingit law workshops and conversation. This camp and workshop provided valuable tools for youth to share with their communities, and aided their capacity with instillment of cultural teachings and laws to be carried forth throughout their lives. Participants commented that this work was deeply healing and changed relationships with the land.



Elements of cultural revitalization, place-based priorities, and land-based learning also lend to language preservation and revitalization. Restoration of original place names, as well as supporting the revitalization of Indigenous languages, holds deep significance not only for cultural sustainability, but it also delivers deep insight into the history of the land.

"[Traditional place names are] important in terms of reconciliation. It's about reversing the process of [being erased] from the landscape, and giving greater attention to the fact that people have lived here and used these names in many ways for generations and generations."

-Glen MacKay, Principal Investigator

Language preservation and revitalization in CMN initiatives has also been linked to preservation of teachings from Indigenous Elders, and is highlighted in the *UN Declaration* to be crucial in reconciliation. Through supporting Indigenous Peoples' rights to self-determination within CMN funded initiatives, it is apparent that benefits are broad and far-reaching. The creation of space to support Indigenous-led research in Ethical Space has created opportunities to strengthen unique Indigenous cultures, focus on place-based priorities and strengthen connections to land, as well as revitalize and preserve Indigenous languages. Additionally, capacity is built for local Indigenous communities, especially youth, to gain culturally-relevant skills, which draw on Traditional Knowledge and are applied to local wellbeing.





Wellbeing: Impacts & Potential

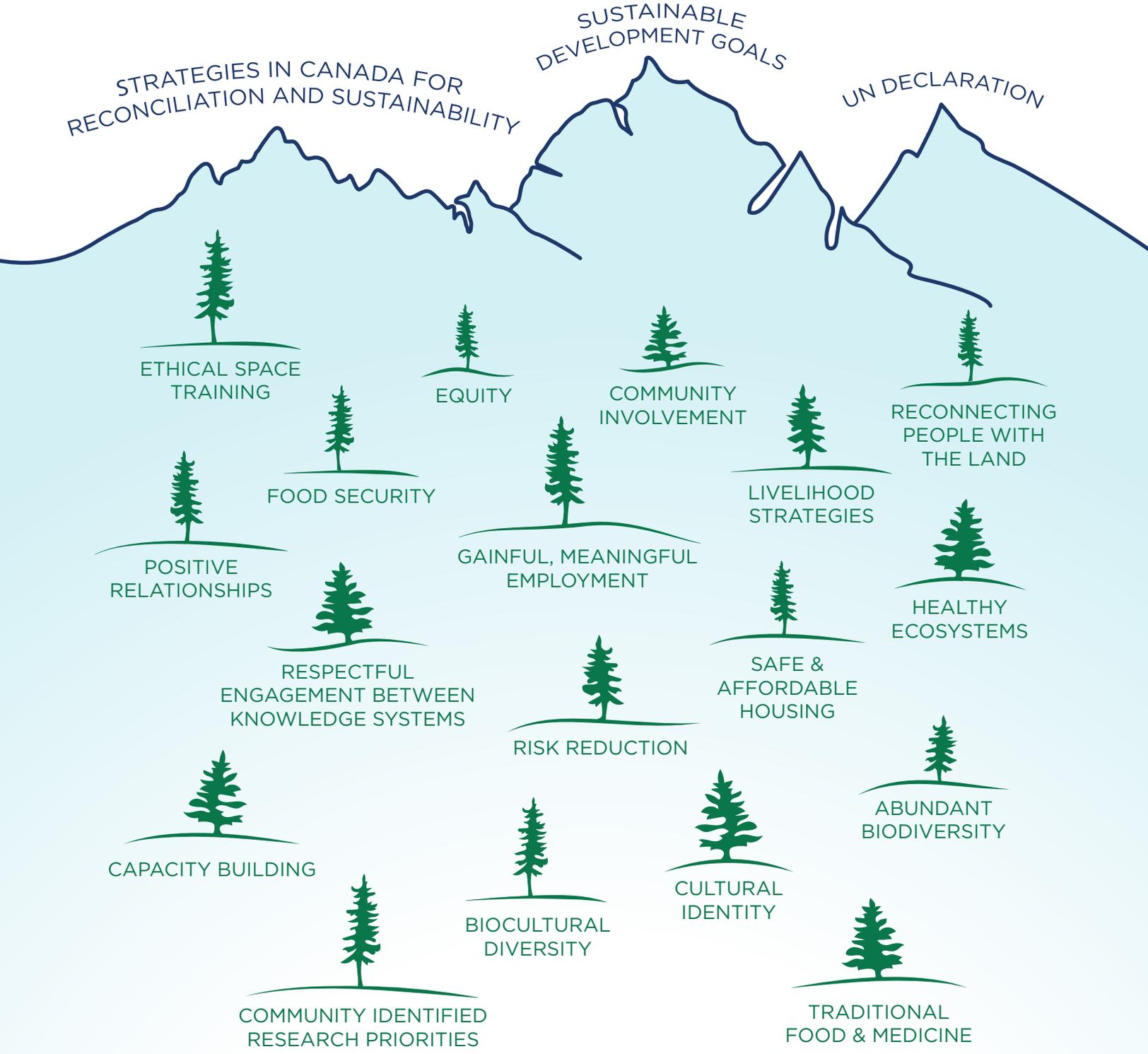
CONCEPTUALIZING WELLBEING

Individually and collectively, CMN initiatives place wellbeing at the centre of their research and knowledge sharing activities by placing equal importance on Indigenous and Western knowledge systems, ensuring nobody gets left behind. Similarly to the terms *sustainability* and *sustainable development*, wellbeing can be a context-specific concept dependent on a variety of factors, such as worldview and lived experience, and can expand in scope beyond economic means. Common themes of what wellbeing encompasses within CMN's funded initiatives include physical, emotional, and spiritual human wellbeing, and the wellbeing of the environment now and in the future. Further, the wellbeing of the environment holds a direct link to the physical, emotional, and spiritual wellbeing of many individuals and communities involved in CMN initiatives, and vice-versa. Wellbeing has also been described as a core feature of research initiatives, bolstered by compatible guidelines such as Ethical Space training, community-identified research priorities, and respectful engagement between knowledge systems.

By centering local communities in research initiatives, CMN supports activities that draw from place-based knowledge and contribute to the wellbeing of mountain environments,

inhabitants, and beyond. Wellbeing in the context of CMN funded initiatives largely emphasizes peaceful partnerships with humans and their local environments. Directing focus towards peace prioritizes the wellbeing of people and the environment, as well as respectful and reciprocal partnerships and holistic prosperity. In partnership with CMN, local communities have been supported in their autonomy by having opportunities to determine locally relevant research priorities, being involved in the research process, and having free, prior, and informed agency in data mobilization. Community members have deep ties and extensive knowledge of the land; community-driven research is therefore deeply informed, and ensures that research is appropriate to that specific area, both in scope and practice. This local-first approach, when braided with Western science, holds opportunities for innovation and shared pathways forward, and Indigenous and local knowledge holders have deep and rich insight into the personal, ecological, and cultural significance of what's studied. Not only does the braiding of knowledge deliver a more holistic understanding of the environment, community members, and wellbeing, but it also expands the breadth of ethical knowledge mobilization.

FIGURE 3: COLLECTIVE ADVANCEMENTS OF WELLBEING



 = CONCEPTUALIZATIONS OF WELLBEING WITHIN CMN INITIATIVES



Explore, Describe and Develop a Methodology to Best Account Indigenous Perspectives on the Value of Land Guardianship in Mountain Regions and the Contribution to the Biodiversity and Well-Being of their Nations: This project will improve understanding of how Indigenous Land Guardian, Stewards, and Monitoring programs are creating impacts within mountain systems and traditional food and medicinal sources for Indigenous communities. The research is completely community-driven: they chose the research that was relevant to them, created the methodology, and have control over the research that is conducted. Additionally, with growing demand for Land Guardianship, especially in Canada's north, this project not only creates opportunities for sustainable livelihoods, but simultaneously supports stewardship of the land and its wildlife, fostering deeper connections to the environment - all of which contribute to holistic wellbeing. "[We] see a lot of non-Indigenous young people that want to learn Indigenous ways because we have a way of taking care of our homelands... if we don't take care of our land, the land will not take care of us" (Norma Kassi, Principal Investigator).



IMPACTS & POTENTIAL

From undertaking informed, land-based research on climate change to developing educational content such as training curriculum that will be shared internationally, CMN's support for Indigenous knowledge sharing has the capacity to positively impact

all of society. The collective impacts of braiding knowledge collaborations within CMN funded initiatives are far reaching. Place-based, community-generated knowledge has significant value in scientific research, adding invaluable holistic understanding.





On the west coast of Vancouver Island in Clayoquot Sound, the construction of Canada's first Indigenous Protected and Conserved Area (IPCA) Innovation Centre seeks to host public programming to reconnect people to the environment, build positive and respectful relationships with Indigenous Nations, and prioritize community needs in project co-development. This approach decentralizes economic prioritization and seeks to maintain ecological and social health with equal value. Further, land-based research that focuses on community wellbeing maintains relationships between humans and their environments, as well as between communities. With these bonds, economic opportunities hold capacity for sustenance, and creative wellbeing-focused approaches can be practiced. This approach can be tailored to fit other settings, and holds the capacity to inform scientific research of overarching trends, with local, land-based knowledge. This allows for active individual and community engagement with the land, and a symbiotic relationship between human and environmental wellbeing.



Indigenous-identified priorities and methodologies allow for a locally informed perspective that places the wellbeing of the environment and its inhabitants at the forefront. These practices expand Western researcher's skillsets in deeper cultural understanding, and provide a deeper connection to the land and culture for Indigenous researchers. Further, braiding knowledge systems supports steps towards reconciliation in offering livelihood-supporting compensation for Indigenous researcher's contributions, and informs Western researchers of how to be of service in supporting objectives of the *UN Declaration* in place-based research. By placing the wellbeing of people and the environment at the centre, steps towards inclusive and holistic sustainability are being taken. Within CMN's funded initiatives, each stage of the research process works to be centred

around wellbeing, ensuring respect for participants, uplifting Indigenous knowledge, and ethical handling of information. As wellbeing and sustainability initiatives outlined in global guiding documents have often framed themselves in an economical context, braiding knowledge to advance heightened sustainability can approach all factors of sustainability more holistically. As an organization, CMN is creating space for research to be more flexible, as evident in the diversity of currently funded initiatives. These initiatives are exemplary of more holistic approaches to sustainable development, supporting the advancement of Canada's commitments to sustainability that are guided by the *UN Declaration* and the SDGs. Impacts of these initiatives benefit local peoples and environments, and hold the potential to be replicated into other contexts.



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ANNEX A: CMN FUNDED INITIATIVES

Research Projects in CMN's First Call for Proposals:

1. Bringing Research Home: Reclaiming the research to tell the story of climate change in the Kluane First Nation Traditional Territory
2. Co-Creation of a Governance Structure: The case of recreo-tourism development in Mont-Orford
3. Effects of climate change and human activities on mountain species and ecosystems
4. Enhancing the reintroduction of plains bison through the inclusion of cultural monitoring and traditional knowledge in Banff National Park
5. Explore, describe and develop a methodology to best account Indigenous perspectives on the value of land guardianship in mountain regions and the contributions to the biodiversity and wellbeing of their Nations
6. From the mountains to our tables: Freshwater security in three Canadian eastern Rocky Mountain watersheds
7. Indigenous land rights in Canada and New Zealand: Sustainable protected areas in rural and mountain environments
8. Łingít Kusteeyí (Tlingit way of life): Revitalizing Tlingit law for land and wildlife
9. Long-term monitoring of harvested mountain ungulates to improve their conservation and sustainable use
10. Managing groundwater resources in mountainous areas: Planning for and adapting to drought conditions
11. Mineral dust dynamics and climate change at high latitude mountainous regions
12. Mobilizing mountain metrics that matter: Inuit-led environment and health monitoring in the Mealy Mountains National Park Reserve
13. The mountain risk knowledge exchange – Building risk management capacity and resilience in mountain communities
14. Nío Neḡ P'əneḡ – Trails of the mountain caribou: Renewing Indigenous relationships in conservation
15. The Shútagot'ine cultural landscape project
16. The View from 2117: Human actions, consequences and perspectives on mountain regions
17. Hills thought to be mountains: the biocultural value of island highlands in the continental plains

Knowledge Hubs in CMN's Second Call for Proposals:

1. Developing Knowledge on the Status of Aquatic Ecosystems in the Chic-Choc Mountains (CREA-CC)
2. Blackfoot Guardianship of East Slope Watershed and Weaving Blackfoot Values with Science
3. Rekindling Indigenous-Led Land Stewardship and Cultural Connections in the Rockies
4. Nío Neḡ P'əneḡ (NNP) – Trails of the Mountain Caribou
5. Ecological Change and Livelihoods in the Porcupine Caribou Summer Range
6. Indigenous and Western Knowledge Systems to Revitalize Connection to Yukon Salmon Culture
7. Pacific Indigenous Protected and Conserved Area (IPCA) Innovation Centre



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