STRATEGIC
PLAN

APRIL 2019 - MARCH 2022

CANADIAN
MOUNTAIN
NETWORK

#MountainsMatter

Mount Robson, British Columbia

ACKNOWLEDGEMENTS

In January 2016, a group of diverse and motivated individuals from across the country first convened to explore the opportunity to build Canadian leadership in applied mountain research based on Indigenous and Western ways of knowing.

In December 2018, the Canadian Mountain Network (CMN) was announced as an official Network of Centres of Excellence (NCE) supported by Canada's research granting agencies and numerous partners from across sectors.

In September 2019, CMN's Board of Directors approved this Strategic Plan to support the resilience and health of mountain peoples and places across Canada by improving our collective understanding of mountain systems.

Mountain research has a bright future in Canada and for that we must acknowledge and thank the many individuals who have supported this initiative through their knowledge, wisdom, and tireless effort over many years.

While this document reflects the work and ideas of hundreds of Canadians and many friends from around the world, we would like to acknowledge a number of individuals and organizations that made special contributions:

- Current and former members of the CMN research leadership team, including Norma Kassi, Dr. Stan Boutin, Dr. David Hik, Dr. Eric Higgs, and Dr. Jeffrey Kavanaugh;

- Current and former staff of the CMN Administrative Centre, including Matthew Berry, Ainsley Sykes, Kristie Benson, Charity Akinseloyin, Christy Urban, and Kathy Watton;

- All those who contributed to the development of CMN's NCE application, especially members of the Regional Initiating Groups and leaders of other NCEs who offered their experience and advice;

- Our Principal Investigators whose innovative and exciting mountain research programs are now rolling out across Canada;

- Current and former staff of the Networks of Centres of Excellence Secretariat who have guided us over the years and continue to support and champion our work; and,

- The dedicated members of the CMN Board of Directors and its committees.

Finally, we express our deep appreciation for the leadership of CMN's Sustaining Partners. These include the Government of Yukon, the University of Calgary, and the Network's Host Institution, the University of Alberta. In particular, we recognize the vision and generous financial support of the University of Alberta's Faculty of Science and its former Dean Jonathan Schaeffer in seeding this initiative.

Without the valued contributions of these diverse individuals and organizations we would not be here today. We look forward to continuing to grow these relationships and building new partnerships in the years ahead to advance mountain research in Canada.

Cover photo: Mt. Assiniboine and Magog Lake taken from the lower slopes of Nub Peak, Mt. Assiniboine Provincial Park, British Columbia. Photo courtesy of Mary Sanseverino for the Mountain Legacy Project.

EXECUTIVE SUMMARY

Twenty-five percent, or 1.5 million square km, of Canada's landmass is covered by mountains. These important and influential landscapes—whether described in terms of plate tectonics, watersheds, ecosystem services, or sacred places—are essential to the environmental, economic, social, spiritual, and cultural identity and well-being of Canada's diverse peoples.

While Canada has considerable expertise in mountain systems research, at present it is not coordinated, research collaborations are limited, non-academics are not consistently involved in its prioritization, design, and implementation, and there exist substantial hurdles to its uptake. Furthermore, Indigenous knowledge and research approaches and methodologies have historically been devalued and constrained in an institutional context dominated by Western research approaches. For these reasons, our capacity to comprehensively observe, study, forecast, and adapt to rapid changing mountain systems remains limited.

The Canadian Mountain Network (CMN) was established in 2019 with the generous support of Canada's research granting agencies through a five-year, $18.3 million grant from the Networks of Centres of Excellence program. Combined with contributions from diverse partner organizations, this funding represents a once-in-a-generation opportunity to position Canada as a global leader in mountain systems research at a time when Canada's mountain systems are undergoing rapid and uncertain change.

CMN's purpose is to support the resilience and health of Canada's mountain peoples and places through research partnerships based on Indigenous and Western ways of knowing that inform decision-making and action. The following Strategic Plan provides a roadmap as to how the Network will develop and implement an integrated, solutions-oriented research, training, and knowledge mobilization agenda in a good way with its partners and participants.

CMN has put forward the following values to guide its efforts in the years ahead:

1. Mutual Respect and Positive Reciprocity
2. Relevance and Impact
3. Focus, Collaboration and Innovation

By living these values the Network will achieve its five overarching goals:

1. Enhance our understanding of the impacts of rapid environmental, economic and social change on the resilience of mountain systems.
2. Decision-making and actions at multiple levels are informed by both Indigenous and Western ways of knowing.
3. A diverse and collaborative community of mountain systems researchers, including academic and non-academic Indigenous trainees, is supported to co-design and co-deliver projects with knowledge users.
4. Innovative models for partnerships across sectors exist and are shared that empower, respect, and, where useful, bring together Indigenous and Western knowledges and research approaches.
5. Enhanced funding for mountain systems research by improving public and policymaker understanding and appreciation of the importance of mountain systems.

TABLE OF CONTENTS

ABOUT

Established in January 2019 as a not-for-profit organization hosted by the University of Alberta, CMN is primarily supported by an $18.3M, five-year grant from the Government of Canada's Networks of Centres of Excellence (NCE) Program. This funding and partner contributions support an integrated, solutions-oriented research, training and knowledge mobilization agenda.

Our Why

Twenty-five percent, or 1.5 million square km, of Canada's landmass is covered by mountains. These important and influential landscapes—whether described in terms of plate tectonics, watersheds, ecosystem services, or sacred places—are essential to the environmental, economic, social, spiritual, and cultural identity and well-being of Canada's diverse peoples.

While Canada has considerable expertise in mountain systems research, at present it is not coordinated, research collaborations are limited, non-academics are not consistently involved in its prioritization, design, and implementation, and there exist substantial hurdles to its uptake. Furthermore, Indigenous knowledge and research approaches and methodologies have historically been devalued and constrained in an institutional context dominated by Western research approaches. For these reasons, our capacity to comprehensively observe, study, forecast, and adapt to rapid changing mountain systems remains limited.

The Canadian Mountain Network (CMN) has come into existence at a time when Canada's mountain systems are undergoing rapid and uncertain change. CMN is the country's first formal research organization dedicated to advancing our understanding of mountain systems, which provide diverse and important benefits to Canadians living both near and far from these distinctive and iconic landscapes. The establishment of CMN as a Network of Centres of Excellence represents a once-in-a-generation opportunity to position Canada as a global leader in mountain systems research.

PURPOSE STATEMENT

The Canadian Mountain Network supports the resilience and health of Canada's mountain peoples and places through research partnerships based on Indigenous and Western ways of knowing that inform decision-making and action.

OUR VALUES
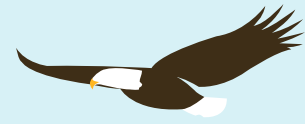
Mutual Respect and Positive Reciprocity.

- We recognize that different peoples have different ways of knowing, doing, being and connecting and we acknowledge, promote, protect and respect this diversity.

- We respect diversity and commit to learning and growing together by taking the time to build trusting relationships, share knowledge, and develop shared governance.

Relevance and Impact.

- Our core function and underlying value proposition is to support knowledge users through research and inquiry that addresses urgent challenges and opportunities.

- We will deliver this solutions-oriented research in collaboration with partners by contributing knowledge, cultural awareness, wisdom, experiences and skills.

Focus, Collaboration and Innovation.

- We will focus our resources on complementary strategies and activities that are developed collaboratively and informed by both Indigenous and Western ways of knowing and doing.

- We will question assumptions, make mistakes, learn from experience, and aim for continuous improvement.

OUR GOALS

1 Enhance our **understanding** of the impacts of **rapid environmental, economic and social change** on the resilience of mountain systems.

2 **Decision-making and actions** at multiple levels are **informed by both Indigenous and Western ways of knowing.**

3 A diverse and collaborative **community** of mountain systems researchers, including academic and non-academic Indigenous trainees, is supported to co-design and co-deliver projects with knowledge users.

4 **Innovative models for partnerships across sectors** exist and are shared that empower, respect, and, where useful, bring together Indigenous and Western knowledges and research approaches.

5 Enhanced **funding for mountain systems research** by improving public and policymaker **understanding and appreciation** of the importance of mountain systems.

OUR RESEARCH PRIORITIES

Photo: Byron Harmon

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.

OUR FOCUS

Defining Mountain Systems

Mountain regions are defined by rugged terrain, including peaks and valleys. By thinking of these regions as complex systems, we recognize the interconnections between people and the land, including water, plants, and animals. Both Indigenous and Settler communities and economies are and will remain a critical part of mountain systems.

The Indigenous understanding of relationality requires a holistic view of where people stand in an entire system, as well as an appreciation of the interconnectedness of ourselves to all the elements of that system. Western science has developed terms such as ecosystem management, biocultural heritage, and socio-ecological systems that also reflect this perspective.

Importantly, each of these ways of knowing and doing recognizes that people are a key element of mountain systems and that human decisions and actions have a unique impact within them.
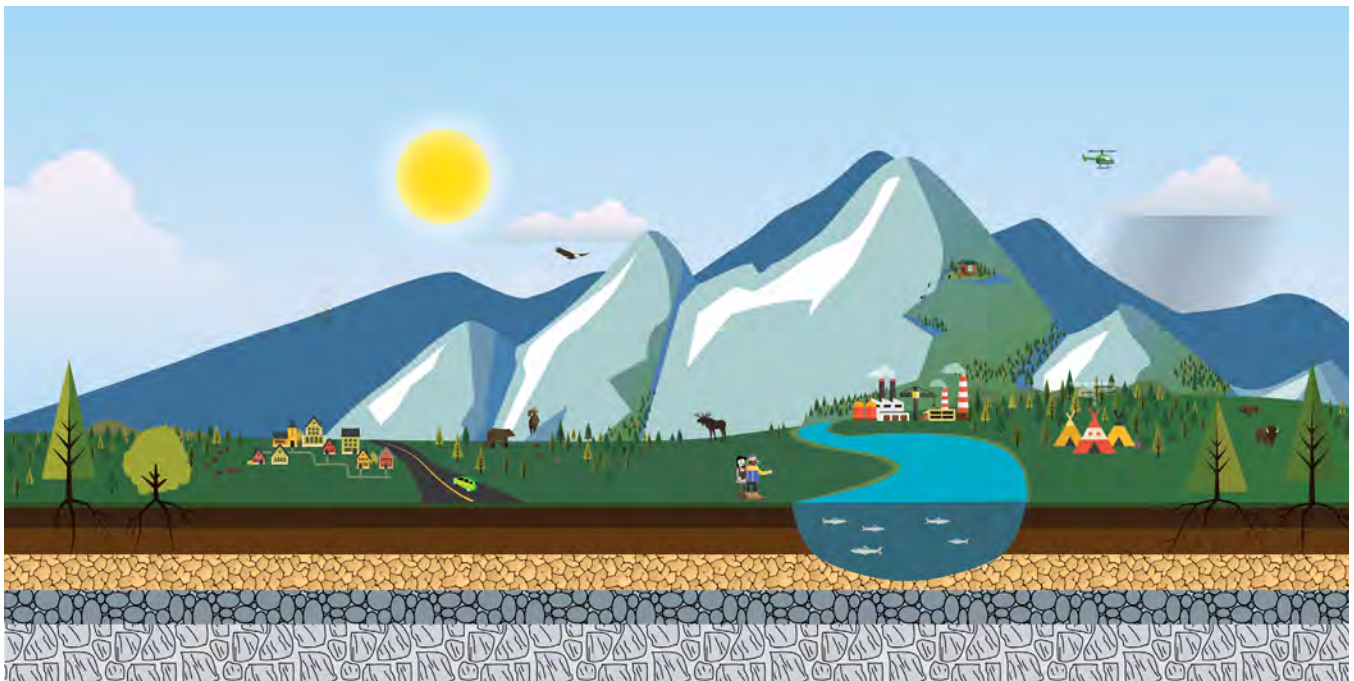
A panorama of the Illecillewaet Glacier, Mt. Sir Donald, and other mountains in Rogers Pass as seen from the ridge on the way to Abbott Peak, Glacier National Park, British Columbia. Photographed by Arthur O. Wheeler, 1901.

Photo courtesy of Library and Archives Canada, and the Mountain Legacy Project.
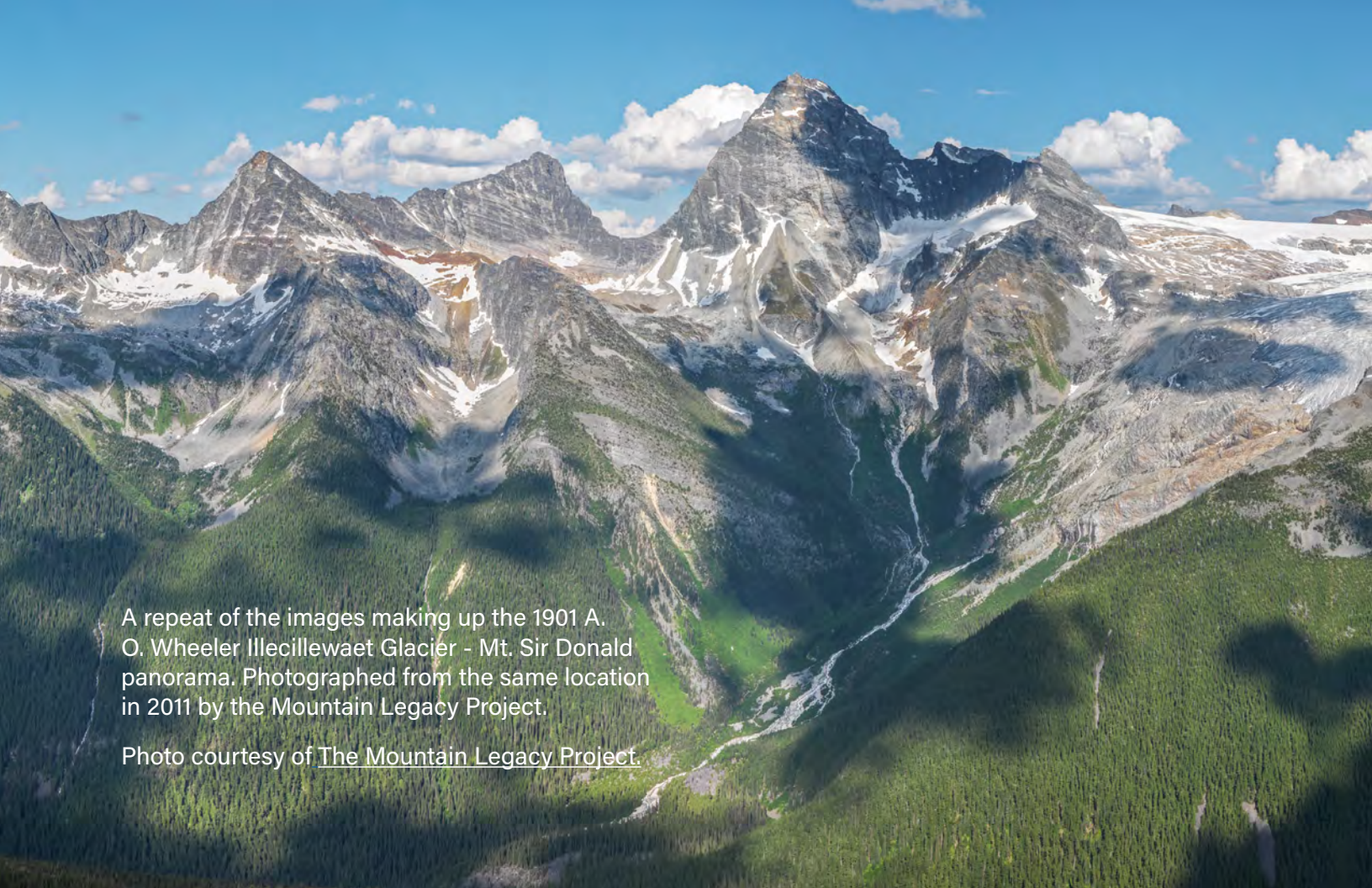
A repeat of the images making up the 1901 A. O. Wheeler Illecillewaet Glacier - Mt. Sir Donald panorama. Photographed from the same location in 2011 by the Mountain Legacy Project.

Photo courtesy of The Mountain Legacy Project.

The Importance of Canada's Mountain Systems

Canada's extensive mountain systems provide a wide range of benefits to Canadians such as fresh water, biodiversity/biocultural diversity, natural resources, energy, shelter, recreation, and cultural and spiritual connection and healing. These benefits and values are delivered far beyond mountain landscapes and into the valleys, lowlands, and coasts to which mountains are meteorologically, hydrologically, biologically, and culturally connected.

Mountain systems also serve as Sentinels of Change at multiple levels – from local to global. In Canada and around the world, mountain systems are experiencing rapid and disruptive change that foreshadows serious impacts that will be felt more broadly over time. Consider, for example:

- Recent estimates suggest that over 80% of the ice in mountain glaciers, which help feed the rivers on which many regions in Canada rely, will disappear this century.

- Climate change means that the costly extreme wildfire seasons of 2017-18 in the mountain forests of western Canada are likely to become increasingly common.

- Habitat for iconic wildlife in Canada, such as grizzly bears, caribou, mountain goats, and sheep, along with countless other species, is being affected by climate change and changing human land use.

- 9.2 million people visited Parks Canada's mountain parks in 2018, a 25% increase since 2012.

Remoteness, resource abundance, and low population densities in many of Canada's mountain regions result in both economic opportunities and challenges. Communities desire both economic development and diversification, while at the same time aiming to preserve the special mountain systems that they are a part of. Many Indigenous communities, who have been an integral part of the landscape for thousands of years, express a desire to protect and/or revive their connections to the land, cultural traditions, and ways of life, while also building sustainable livelihoods. Indeed, the fact that many rural and remote economies within mountain systems are land-based makes these places an important and necessary focus for efforts toward reconciliation between Indigenous Peoples and Settlers. Call #43 of the Truth and Reconciliation Commission of Canada calls for the full adoption and implementation of the United Nations Declaration on the Rights of Indigenous Peoples as the framework for reconciliation in this country, and an important focus of the Declaration is revitalizing the relationship of Indigenous Peoples to the land.

Any one of the many contributions of mountain systems to supporting sustainable development – from serving as water towers to biocultural diversity hotspots to the foundation of diverse economies – would itself be enough reason to prioritize research in this area. Collectively, they mean that improving our understanding of mountain system dynamics to inform decision-making and action must become an urgent national priority.

Canada's Iconic Mountain Systems

(Source: Chris Brackley/Canadian Geographic)

Mountain Systems and Sustainable Development

> *"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."*
>
> - Our Common Future: Report of the World Commission on Environment and Development (1987)

Sustainability is the foundation for today's leading framework for international cooperation – the 2030 Agenda for Sustainable Development and its Sustainable Development Goals (SDGs). The SDGs build on Agenda 21 established at the Rio Summit in 1992 which first introduced the concept of Sustainable Mountain Development (Chapter 13).

Achieving several of the SDGs will require an improved understanding of mountain systems. For example, Target 15.4 calls for, "the conservation of mountain ecosystems in order to enhance their capacity to provide benefits that are essential for sustainable development." Mountain systems also figure prominently in, or are critical to, targets supporting the protection, conservation, and restoration of water-related ecosystems (6.6 and 15.1), sustainable tourism (8.9), climate-related hazards (13.1), sustainable forest management (15.2), restoration of degraded land (15.3), halting biodiversity loss (15.5), and the integration of ecosystem and biodiversity values into national and local planning (15.9).

Given the global significance of our country's iconic mountain systems, we believe that CMN can take a leadership role in supporting Canada's efforts to achieve mountain-related SDGs. We will advocate for the greater prominence of mountains in Canada's SDG implementation strategy, future iterations of the Federal Sustainable Development Strategy, and Canada's SDG data hub.

In addition, we will support Canada's leadership with respect to other complementary international agreements and declarations relevant to mountain systems, such as the Convention on Biological Diversity, Sendai Framework for Disaster Risk Reduction, UN Framework Convention on Climate Change, and United Nations Declaration on the Rights of Indigenous Peoples.

Mountain Systems Around the World (Source: Global Mountain Biodiversity Assessment)
www.gmba.unibe.ch/services/tools/mountain_inventory

Our Approach to Bringing Knowledge Systems Together

CMN will work to collaboratively design and deliver new approaches to research that respect and empower Indigenous ways of knowing, as well as support researcher partnerships with Western ways of knowing.

The Truth and Reconciliation Commission of Canada (TRC) defined reconciliation as an ongoing process of establishing and maintaining respectful relationships. Reconciliation means concrete actions to show that not only do we want our relationships to be different, but that we are committing ourselves to actually working together in a good way.

Call #65 of the TRC's report calls for the establishment of a national research program to advance understanding of reconciliation. CMN strongly supports the Canada Research Coordinating Committee's effort to develop a strategic research plan that identifies new ways of doing research with First Nations, Métis and Inuit communities. This plan will include strategies to grow the capacity of Indigenous communities to conduct research and partner with the broader research community.

Mountain systems research offers distinctive opportunities to support reconciliation in research, as this work is necessarily land- and place-based. Indeed, one of the Principles of Reconciliation put forward by the TRC requires that both Indigenous knowledge systems and the land be integrated into the reconciliation process. Many of the Network's partners, Indigenous and Settler alike, have expressed their frustration with dominant structures in research, along with the desire to co-design an alternative that is better positioned to embrace Indigenous ways of knowing and doing. In response, CMN aims to grow the proportion of its research projects that are led by Indigenous communities.

CMN can be successful in these efforts by living our values, engaging in dialogue, learning, and working together within our network and within Canada's research system to effect change.

Mackenzie Mountains, Northwest Territories
Photo: Northwest Territories Tourism Photo Library

OUR RESEARCH FRAMEWORK

CMN's research framework is designed to provide coherence across the Network's investments and maximize their impact. Guided by several years of consultations with diverse researchers and knowledge users across the country, it sets the stage for Canada's first formal mountain systems research agenda and builds on the 14 projects funded through CMN's first call for proposals (listed in Appendix A on P23). Further work led by the Network's Board, Research Management Committee, and Research Priority Area Leads will provide additional context and direction to implement the framework described below.

Understanding Mountain Systems

Informed in part by the first-ever global assessment of the threats to mountain systems (Klein et al., 2019), the Network has identified four critical, interdependent drivers of change in Canada's mountain systems:

- Climate Change
- Land Use Change
- Policy & Markets
- Reconciliation

These drivers have the potential to radically affect mountain environments and the livelihoods of and risks to mountain peoples.

The CMN will explore these issues through **four Research Priority Areas (RPAs)**:

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.

The RPAs are designed to enable vertical (within an RPA) and horizontal (between RPAs) research integration, as well as support research based on a wide variety of knowledge systems, disciplines, and methodologies. Each one:

- closely links to the large majority of the Network's current portfolio of funded research projects;
- reflects the identified needs and priorities of diverse network partners and knowledge users at the local, regional, and national levels;
- responds to the findings or calls to action of the Truth and Reconciliation Commission of Canada; and,
- informs pathways to achieve the UN Sustainable Development Goals.

ASSERTING AND EMPOWERING INDIGENOUS-LED RESEARCH

To understand how CMN will support Indigenous-led research, it is important to first explain what Indigenous-led research is and why it is so critical to a Canadian mountain research agenda.

Indigenous-led research is quite simply research that is based on Indigenous ways of knowing and doing. Affirming the validity of Indigenous research approaches, and building a greater understanding of those approaches by all network participants, is critical to deliver on CMN's vision and mission.

An Indigenous-led research project may be informed by several principles:

1. It draws on traditional knowledge that is place-based and that has been gained over many generations. This knowledge is primarily transmitted orally, including through stories and ceremony.

2. It takes a holistic approach, meaning that it works to examine and understand the relationships between the elements of a system. In the mountain context, this could mean the relationships between the people, animals, plants, land and waters of an area.

3. It guides behaviour and decision making that supports self-determination. For example, Indigenous research based on traditional knowledge is essential to inform everything from self-government and land claims to land stewardship, environmental assessments, and wildlife management.

4. It answers questions identified by communities and responds to the community's needs and priorities.

5. It is community-led, community-based, builds community research capacity, and supports knowledge transmission across generations by engaging youth and building relationships with Elders and knowledge holders.

6. It operates within an ethics framework that is determined by the community and best practices.

7. It can engage and exchange information and knowledge with Western science on the right terms. When this exchange is based on mutual respect it can benefit both sides. However, not all Indigenous-led research requires or benefits from this connection and Indigenous-led research must be understood as valuable in its own right. The exchange between ways of knowing cannot only be seen as an opportunity to translate Indigenous knowledge into western data to support western management and governance.
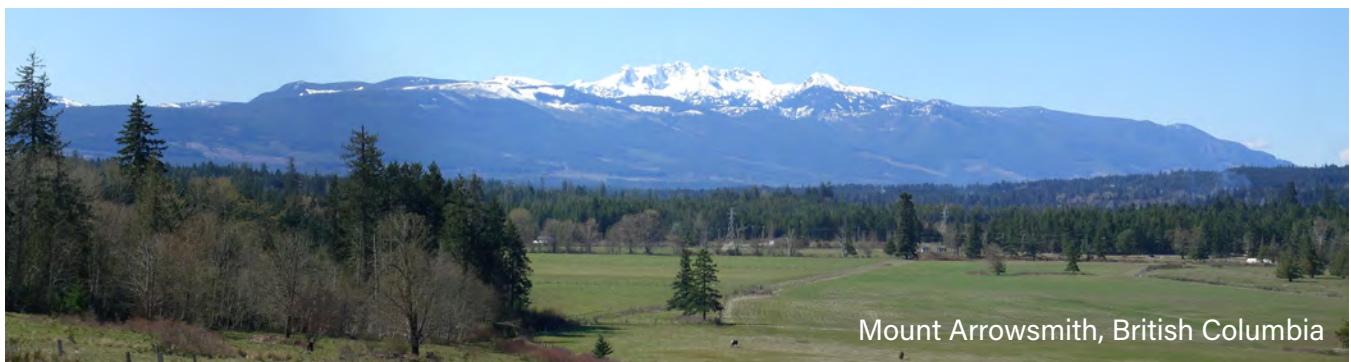
Mount Arrowsmith, British Columbia

In addition to its own research activities, CMN will continue to advocate for the Government of Canada to address structural inequities in funding eligibility that create barriers for Indigenous research. The Network will also advocate for greater access to funding for such research through the existing research granting agencies or, if necessary, through the creation of a new agency designed to meet this urgent and critical need.

CMN's inclusion of Indigenous-led research within its research program is not common within the NCE program or within Tri-agency/post-secondary-led research more broadly. Additionally, Indigenous-led research has historically received few resources within the Canadian institutional context when compared with Western science and, as a result, aspects of Indigenous-led research capacity remain underdeveloped. For these reason, we anticipate a learning curve for the Network's governance, staff, and participants. We feel it is important to acknowledge that this new approach will bring new challenges but that, as with all innovation, mistakes should be expected and even appreciated to the extent that learning from them will allow us to improve.

Caribou in Gaspésie National Park, Quebec

Supporting Indigenous-led Research

CMN has strongly advocated for bringing multiple ways of knowing to the table to inform and enhance decision-making, including both Indigenous and Western knowledge approaches. For the first time in the NCE program, the Network has provided the opportunity for Indigenous organizations to directly apply for research funding alongside academics. Such projects received 32% of funding through the first call for proposals and respectful Indigenous partnerships and Indigenous leadership were at the core of several other funded projects administered by academic institutions.

Moving forward, CMN affirms its commitment for Indigenous organizations to directly apply to the Network for research funding. The Network will grow its commitment to Indigenous research by allocating **at least** 40% of remaining research funds to such projects.

Indigenous-led research projects must meet several criteria:

1. Clearly respond to identified Indigenous community needs and research priorities;

2. Funding may be administered by Indigenous organizations or post-secondary institutions;

3. Be led by an Indigenous individual;

4. Receive formal and detailed support from Indigenous community leadership; and,

5. Prioritize community engagement and capacity building, including Indigenous trainee development.

Mealy Mountains National Park Reserve, Labrador

OUR PLAN FOR THE FUTURE

This plan supports the design and implementation of strategies and activities that will build a strong foundation for the organization over the next three years. Beginning in April 2022 and over the course of the following year, CMN will launch a review to evaluate progress, consider its strategic context, and build out a detailed plan for a post-NCE grant future.

Although many networks wind down operations at the end of their NCE grant, several have transitioned to funding from other partners (e.g. Stem Cell Network) and/or focused their organization on specific activities (e.g. Mitacs, Canadian Water Network).

While the Network's vision will not be achieved within its five-year term as a NCE, there is no question that the NCE grant will have a considerable impact during this period and beyond.

CMN will identify and work toward a sustainable funding model to continue activities at the end of the NCE grant. Several features of the Network suggest opportunities for the organization or its partners to continue some or all of its work in order to make significant long-term contributions to mountain systems research. These could include refining and sharing the Network's approach to bringing together multiple ways of knowing and/or playing a lead role in the coordination of national action to support the implementation of global sustainable development goals related to mountain systems.

Saint Elias Mountains, Yukon

OUR FOUR INTEGRATED PROGRAM STRATEGIES

To achieve our vision and goals, deliver on our mission, and live our values, we will focus our time, effort and resources on activities that fall within four reinforcing and supportive program strategies aligned with the NCE Program Criteria:

RESEARCH	TRAINING	KNOWLEDGE MOBILIZATION	NETWORKING & PARTNERSHIPS

These four strategies, along with their objectives, outcomes, and associated activities are outlined in further detail below.

Our Operational Strategy (Excellence in Management and Governance) is included in Appendix B (P32).

Banff National Park, Alberta
Photo: Banff & Lake Louise Tourism / Paul Zizka photography

1. Research

Objective A: Create new value through strategic investment in co-funded network research projects and programs focused on CMN's four Research Priority Areas, as well as add value to the relevant existing investments of partners.

Objective B: Mobilize and support network participants to develop proposals that leverage network funds for significant investments from other funders.

Objective C: Creation of functional, diverse, multisectoral and multi-regional research teams that embrace Indigenous and Western ways of knowing and doing.

Outcomes	Activities
▪ Grow and enhance Canada's international collaborations and reputation in mountain systems research. ▪ Network research delivers cutting-edge information, knowledge, and tools to provide innovative solutions to challenges. ▪ Mountain communities and Indigenous Peoples benefit from adaptation and mitigation strategies that respond to rapid and uncertain environmental, social and economic change and risk. ▪ The Network is increasingly recognized by key partners and stakeholders as a valued and important source of guidance for	**1.1. Calls for proposals for research funding** ▪ Building on the success of the Preparatory Call for Proposals and the Network's initial 14 funded projects ($4.5M over three years), future investments ($3M) related to the four Research Priority Areas will seek partner funding for calls for proposals, as well as place a stronger emphasis on leveraged funding requirements for projects and on approaches that bring together Indigenous and Western ways of knowing and doing, among other criteria. **1.2. Mountain Systems Monitoring and Observations Program** ▪ A strategic plan and implementation strategy will provide a framework for a monitoring/observation program that will improve our knowledge of mountain systems processes and drivers of change and be supported through network investments and collaborative applications to other funders (e.g. Canadian Foundation for Innovation grants). ▪ The program will leverage Canada's existing observing and monitoring infrastructure and networks while implementing new activities and infrastructures to address monitoring gaps within the "Critical Zone", which will in turn support evidence-based decision making through respectful and partnered data collection and management. The Critical Zone is defined as "the thin layer of the Earth's surface and near-surface terrestrial environment from the top of the vegetation canopy (or atmosphere–vegetation interface) to the bottom of the weathering zone (or freshwater–bedrock interface). ▪ The program will link to and inform large international observing programs to exchange best practices and data, provide Canadian expertise and leadership to the international community, and

align with and support efforts to achieve UN Sustainable Development Goals relevant to mountain systems, such as the Group on Earth Observations' Global Network for Observations and Information in Mountain Environments initiative.

1.3. Co-Research Director Directed Grants

- To remove potential conflicts of interests and facilitate full participation and engagement in the Research Management Committee, each co-Research Director will receive an annual grant that can be used to support their own research programme or be allocated to projects or initiatives that they believe will offer strategic value to the network.

1.4. Seed Funding for Research Plan and/or Proposal Development

- The Network will support the development of relevant research plans and/or proposals by its researcher and end user community, ranging from small scale projects (e.g. community engagement) to Network-scale projects (e.g. New Frontiers in Research Fund proposal) to International collaborations (e.g. Belmont Forum).

1.5. Mitacs Research Internships and Fellowships

- The Network will work to promote Mitacs opportunities and proactively co-develop and/or co-fund placements for network trainees.

1.6. Evaluation and refinement of network research funding approach and processes

- Led by the Research Management Committee and supported by consultations with network participants, including Network Investigators, trainees, knowledge users, and other network governance committees, identify opportunities to improve the effectiveness and efficiency of resource allocation, such as through refining adjudication and evaluation criteria.

1.7. Targeted efforts to support relevant reports and strategies

- Through regular commissioned reports and assessments informed by the Network's research projects, the Monitoring and Observations Program, and data and information from partners, the Network will establish itself as the leading source for high quality, independent tracking of Canada's progress on its international commitments related to mountain systems (e.g. SDG Target 15.4). The Network will also identify and track a series of additional indicators to provide further detail and guidance to policymakers focused on implementation.

- decision-making.
- The Network is established as a leading authority on the role of mountain systems in supporting sustainable development, and specifically in supporting the UN Sustainable Development Goals (SDGs).
- Research funding processes align with the needs and objectives of both researchers and knowledge users,
- Clear alignment of network-funded research projects with the Research Framework previously outlined.
- Diverse kinds of trainees are involved in the full cycle of the Network's research, from design to delivery to application.
- Non-academic Indigenous researchers benefit from greater autonomy and secure funding.
- Data collection and management protocols for network research are aligned with community-defined Indigenous knowledge protocols where required, as determined by the Research Management Committee.

- Resource optimization through the sharing of equipment and research facilities, databases, and personnel.

2. Training

Objective: Train a diverse network of highly skilled, solution-oriented mountain systems researchers, including both academic trainees and non-academic Indigenous trainees, who benefit from strong intercultural competencies, experience working with both Indigenous and Western knowledge systems and research approaches, and improved employment outcomes.

Outcomes	Activities
- Outstanding trainees and researchers are attracted to, developed in, and retained by Canadian research and knowledge user organizations operating at multiple levels. - Trainees are exposed to the full range of economic, social, environmental, and ethical dimensions of the Network's research. - Trainees are involved in the full cycle of the	**2.1 Participation and/or Leadership in Network Research** - Opportunities include working with Network Investigators on projects and applying for trainee-led research projects, with all projects expected to budget for community orientation and community engagement work as required. **2.2 Trainee Association** - With an annual allocation from the Network, the Association will offer a variety of programs for its members. Association activities may include a mentorship program, academic or professional development grants, sharing learning materials, sharing network and other funding opportunities, and leading or supporting coordination of network events (e.g. International Mountain Day). In addition, members may receive priority consideration for participation in other network activities. **2.3 Courses and Workshops** - The Network will support the development of relevant courses and workshop, as well as the expansion of existing offerings. These will be delivered at the Annual Training Meeting aligned with the Network's Annual Convening, at other relevant network or partner events, or through Massive Open Online Courses (MOOCs). Topics may include reconciliation and research, research communications, networking, Ownership, Access,

Control and Possession data principles, etc.

2.4 Mitacs Research Internships and Fellowships

- The Network will co-fund Mitacs opportunities for network trainees, including through the Accelerate program (students at Canadian colleges and graduate students at Canadian universities), the Elevate program (postdoctoral fellows), and the proposed Indigenous Consortium.

2.5 NSERC Collaborative Training and Research Experience Applications

- The Network will support mountain systems-relevant applications to the NSERC CREATE program that will provide opportunities for network trainees to learn collaborative and integrative research approaches, including Two-Eyed Seeing-type approaches, and facilitate their transition to employment in the workforce.

2.6 On-the-land Learning

- Through a custom designed, network-led program or through strategic contributions to existing initiatives, the Network will support on-the-land learning opportunities that offer participants both theory and practical skills to lead community-based research using multiple ways of knowing.

2.7 Pathways Program

- This program will prioritize trainees who have participated in network research projects, including and especially Indigenous youth not in school, and will increase their exposure to other ways of knowing, with a focus on participation in field, community, or university-based research projects.

2.8 Community of Indigenous Experts

- This initiative will provide networking and mentorship resources for Indigenous trainees involved in Network-affiliated projects and will support trainees to succeed in their studies and research.

2.9 Training Support Team

- Convene a Training Support Team to advise on the development and implementation of the Network's Training Plan.

2.10. Enable co-designed, co-developed, and co-delivered research that brings together Indigenous and Western knowledge systems

- In order to assist researchers to understand, develop and/or implement projects based on these approaches, the Network will provide both Network Investigators and trainees with access to relevant training and networking opportunities.

- Network's research, from design to delivery to application.

- Trainees are exposed to diverse research approaches and methodologies across knowledge systems and can integrate these approaches in their work.

- Trainees develop strong intercultural communications capacities.

- Trainees develop personal and professional relationships that support them in their careers and reinforce the development of a mountain systems research Community of Practice in Canada.

3. Knowledge Mobilization

Objective A: The Network is considered the premiere source for data, information, knowledge and tools by a Community of Practice of mountain systems researchers and mountain systems knowledge users.

Objective B: The Network supports collaboration and informed decision making through effective in-person and digital communications, events, and other tailored products or activities involving researchers, trainees, and knowledge users.

Outcomes	Activities
■ Accelerated innovation in policies, practices, and/or technologies of knowledge users through the application of research and observations results. ■ Widely available and accessible results from network research in alignment with Indigenous knowledge and data governance. ■ The results of our work reach decision makers in the right form to influence policy and practice. ■ Public understanding and recognition of the key role that mountain systems play in	**3.1 Network Research Products** ■ Each research project will include a clear knowledge mobilization plan that identifies pathways to changes in policy, practice or programs and how it will connect results to knowledge users. **3.2 Custom Products** ■ Development, coordination and/or funding of research summaries, reports, case studies, policy briefs, knowledge assessments/synthesis work, infographics, podcasts, photo voicing, films/video, op-eds, and workshops and meetings. **3.3 Sponsorships** ■ The Network will provide funding to support aligned meetings, workshops and other events. Its contributions will focus on increasing research content at knowledge user events, supporting the participation of Network Investigators and trainees, encouraging inter-regional and international exchange, and supporting knowledge mobilization with respect to event outcomes. **3.4 Annual Convening** ■ The Network's Annual Convening will rotate between regions and bring together the network's governance, management, researchers, trainees, Elders and knowledge holders, as well as select invited guests to discuss network progress and plans, share research results, take advantage of training opportunities, and workshop collaborative grant proposals. Aligned with this event, CMN will bring an international mountain research conference to Canada within the NCE term. **3.5 International Mountain Day** ■ National coordination and promotion of events in celebration of UN-designated International Mountain Day (December 11th) in support of mobilizing mountain systems research.

sustainable development,
along with public support
for policy change and
greater funding for
mountain systems
research.

- Development of a self-
identifying national
mountain systems
research community.

- International Mountain
Day is embraced by
researchers, knowledge
users, and communities
as an important
opportunity for
networking and
knowledge exchange.

3.6 Royal Canadian Geographical Society Partnership
- Strategic partnership to build the network's brand awareness, include serial content within Canadian Geographic magazine and its communications platforms, and support public education and develop K-12 trainees through poster maps and lessons plans.

3.7 Mountain Portal (www.canadianmountainnetwork.ca)
- The Mountain Portal is a central point through which network participants and those interested in its work can access network information and opportunities, such as a researcher directory, blog, social media, and e-newsletter.

3.8 Targeted Support for Mountain Municipalities
- Provide directed contributions that support municipal research priorities and facilitate knowledge uptake and mobilization, such as sponsoring the Mountain and Resort Town Planners Summit and providing dedicated Mitacs placements to industry or not-for-profits working issues identified as priorities by mountain municipalities.

3.9 Knowledge Mobilization Support Team
- Convene a Knowledge Mobilization Support Team to advise on the development and implementation of the Network's Knowledge Mobilization Plan.

4. Networking and Partnerships

Objective A: Grow the resources available to support mountain systems research, training and knowledge mobilization activities in Canada and internationally.

Objective B: Ensure that participants and partners at the local, regional, national and international levels who can provide strategic value are active in developing and supporting Network activities.

Objective C: Improve Canada's international visibility, participation, leadership, and impact in mountain systems research and improve public and policymaker understanding of Canada's progress in meeting relevant international commitments.

Outcomes	Activities
▪ Development of a national mountain systems Community of Practice.	**4.1 Strategic Partnerships and Alignment** ▪ Virtually or through the Annual Convening, establish sub-Communities of Practice to facilitate knowledge exchange, share best practices, and facilitate joint projects.
▪ Increased cash and in-kind contributions directly to the Network from non-NCE sources.	▪ Develop strong relationships with organizations and capacities aligned with the Network's strategy that offer opportunities to build on existing investments and partner priorities to accelerate and maximize the impact of investments (e.g. Indigenous Guardians programs).
▪ Network revenue streams are diversified to increase impact, build resilience and create post-NCE grant options.	▪ Leverage the resources of network partners to expand the scope, scale and impact of network activities (e.g. Mitacs internships or project applications that contribute leveraged funds) ▪ Become a member of the UN Mountain Partnership and join and pursue leadership opportunities in other membership- or partnership-based mountain systems research organizations (e.g. Mountain Research Initiative).
▪ Network partners secure resources that are aligned with	▪ Co-host a prominent international research conference or relevant event to increase the profile of Canada and the Network in the global mountain systems research community (e.g. International Mountain Conference, UN Mountain Partnership Global Meeting). ▪ Leverage network communications assets to enhance networking, such as through improvement of the Mountain Portal mountain researcher directory. **4.2 Fundraising and Self-Generated Revenues** ▪ Apply for Tri-agency research, training and knowledge mobilization grants where eligible.

the Network's priorities and that amplify the impact of the Network's own investments.

- Practices support transparency and accountability to funders.

- Increased local, regional, multi-regional, national and international mountain system research collaborations.

- Cultivate funder relationships to secure contributions to new or existing activities and apply an overhead fee to support network administration and operations (e.g. funding for partnered calls for proposals supported by an industry partner, Indigenous organization, government department or private philanthropy).

- Develop financial reporting processes and a Performance Measurement and Management Framework to build funder confidence in the Network's impact and stewardship of funds.

- Secure cash or in-kind contributions to the costs of the Network's Administrative Centre by offering both alignment of interests and 'Sustaining Partner' profile on network communications (e.g. staff secondments).

- Develop opportunities for self-generated revenues from fees for products or services (e.g. courses or workshops) or sponsorships of network-led events (e.g. International Mountain Day).

4.3. Advocacy

- Encourage Canada's research granting agencies and other major research funders to improve and expand opportunities for mountain systems research funding, with a special emphasis on supporting Indigenous research leadership through more and more accessible funding.

- Advocate for the inclusion of mountain systems in Environment and Climate Change Canada's 2022-25 Federal Sustainable Development Strategy, encourage alignment with relevant targets under the UN Sustainable Development Goals (SDG), and support the expansion of Canada's SDG implementation strategy to include mountain systems indicators and considerations.

APPENDIX A: Funded Projects - CMN Call for Proposals #1

1. **Bringing Research Home: Reclaiming Research to Tell the Story of Climate Change in Kluane First Nation Traditional Territory**

   ▪ Principal Investigator: Kate Ballegooyen, Kluane First Nation

2. **Mobilizing Mountain Metrics that Matter: Inuit-Led Environment and Health Monitoring in the Mealy Mountains National Park Reserve**

   ▪ Principal Investigator: Inez Shiwak, Torngat Secretariat

3. **Nio Ne Pene – Trails of the Mountain Caribou: Renewing Indigenous Relationships in Conservation**

   ▪ Principal Investigator: Leon Andrew, Sahtu Renewable Resources Board

4. **Tlingit Way of Life: Revitalizing Tlingit Law for Land and Wildlife**

   ▪ Principal Investigator: Aimee Schmidt, Takhu Atlen Conservancy

5. **Enhancing the Reintroduction of Plains Bison through the Inclusion of Cultural Monitoring and Traditional Knowledge in Banff National Park**

   ▪ Principal Investigator: Bill Snow, Stoney Tribal Administration

6. **Long-term Monitoring of Harvested Mountain Ungulates to Improve their Conservation and Sustainable Use**

   ▪ Principal Investigator: Marco Festa-Bianchet, University of Sherbrooke

7. **Mineral Dust Dynamics and Climate Change at High Latitude Mountain Regions**

   ▪ Principal Investigator: James King, University of Montreal

8. **The Mountain Risk Knowledge Exchange - Building Capacity and Resilience in Mountain Communities**

   ▪ Principal Investigator: Glyn Williams-Jones, Simon Fraser University

9. **From the Mountains to our Tables: Freshwater Security in Three Canadian Eastern Rocky Mountain Watersheds**

   ▪ Principal Investigator: Rolf Vinebrooke, University of Alberta

10. **Managing Groundwater Resources in Mountainous Areas: Planning for and Adapting to Drought Conditions**

   ▪ Principal Investigator: Diana Allen, Simon Fraser University

11. **Co-Creation of a Governance Structure: the Case of Recreo-Tourism Development in Mont-Orford**

   ▪ Principal Investigator: Laurent Bourdeau, Laval University

12. **The Shutagotine Cultural Landscape**

   ▪ Principal Investigator: Glen Mackay, Aurora College

13. **Indigenous Land Rights in Canada and New Zealand: Sustainable Protected Areas in Rural and Mountain Environments**

   ▪ Principal Investigator: Courtney Mason, Thompson Rivers University

14. **The View from 2117: Human Actions, Consequences, and Perspectives on Mountain Regions**

   ▪ Principal Investigator: Pam Shaw, Vancouver Island University

APPENDIX B: CMN Operational Strategy

Excellence in Management and Governance

Objective A: Overall management focuses on results and impact

Objective B: Governance structures support accountability, transparency and performance

Objective C: Financial management instills trust and supports performance and evaluation

Objective D: CMN is diverse and inclusive

Objective E: Human resources are valued and developed

Objective F: The use of Information Technology systems improves efficiency

Objective G: Communications are strategic, effective, and build the Network's brand

Outcomes	Activities
▪ Board members are effectively involved in critical roles that support the mission, such as policy oversight, leveraging resources, assuring accountability, publicly representing the organization. ▪ Board leadership assures organization-wide accountability, transparency, effectiveness, and ethical behavior, including compliance with appropriate legal guidelines and	**5.1 Governance** ▪ Scheduling of regular in-person, teleconference and/or videoconference meetings of the Board of Directors and its committees to encourage relationship building, clear communication, and accountability both within network governance and between governance and management. ▪ Periodic performance assessment of directors, board officers, committees and the overall board against terms of reference and position descriptions, with the results of that assessment together with an approved Competency Matrix used as a basis for recruitment and succession planning. ▪ Development of policies and procedures to provide clarity and predictability for governance, management, and all network participants and partners, as well as support compliance. ▪ Creation of electronic and print Minutes Binders to support compliance and access to information for governance and management. ▪ Competencies within network governance are developed through the sharing of learning materials and identification of training opportunities.

regulations.

- Program and organizational results are clearly articulated and regularly tracked, reviewed, and reported in light of targeted outcomes.

- The organization regularly engages in strategic planning exercises in order to (1) ensure the ongoing vitality and purpose of the organization's mission and vision; (2) anticipate and set goals in order to achieve the mission; and, (3) ensure the ongoing efficacy of the organization's activities in achieving those goals.

- The organization has clearly defined succession plans to manage transitions in key leadership positions.

- Recruitment, on-boarding, engagement, training, evaluation, and retention of staff reflect the organization's mission, organizational needs, and staff expertise.

- The organization creates "stretch assignments" and employs a "growth pipeline" to retain talented staff by

5.2 Planning

- Implementation of this strategic plan and development and approval of a strategic plan for the Network for FY2022 and beyond.

- Development of an annual Operations Plan(s) that deliver the strategic plan and supporting both budgeting and performance management.

5.3 Administrative Centre Staff Recruitment, Development, Retention and Succession Planning

- Develop, implement and regularly update an overarching human resource plan that identifies administrative capacity required to deliver the Network's strategic plan, including detailed position descriptions, recruitment strategy, and succession plans.

- Support employee engagement and success through operational planning, co-development with employees of individual development plans, and regular reviews.

- Establish secondment agreements or equivalent agreements with organizations hosting network employees to ensure clear accountabilities to the Network.

5.4 Reporting and Compliance

- Approval of an annual public corporate report, the annual Networks of Centres of Excellence Progress Report, and any other required funder reports.

- The Secretary and Treasurer, supported by the President, Managing Director, Financial Administrator and the Network's Legal Counsel, ensure compliance with the *Canada Not-for-profit Corporations Act* by securing approval and submission of annual audited financial statements to Corporations Canada, as well as other required submissions and updates.

5.5 Finance

- Development of policies and procedures to support budget development and review, financial reporting to governance and management, and ensure successful audits.

- Creation and maintenance of a Risk Management Framework supported by a regularly updated Risk Register.

- Development of a network overhead cost policy and an investment policy to support both fundraising and financial management.

- Explore opportunities for the more efficient use of network funds, such as through the alignment of

events, travel and other activities with partners.

5.6 Performance Management and Evaluation

- Develop and implement a detailed Performance Measurement and Management Framework to support accountability to management and governance and inform regular evaluation and organizational learning.

5.7 Equity, Diversity and Inclusion (EDI)

- Include mandatory EDI training in employee development plans and support governance to access relevant training opportunities.

- Conduct a Gender-Based Analysis+ of the Network's strategic and operational plans, as well as its policies, processes and procedures to identify biases or barriers.

- Endorsement of the Tri-agency-led Dimensions Charter and/or development of a formal EDI statement or policy.

- Development of EDI targets for governance and management to inform recruitment strategy, with a particular emphasis on ensuring the inclusion and strong representation of Indigenous individuals in network governance and management.

- Ensure that employees can report discrimination through network processes or those of the organizations that host them.

- Language translation of key network materials to ensure compliance with NCE program rules and accessibility for network partners.

- Ensure that evaluation criteria for research projects and selection criteria for trainees are informed by EDI considerations.

- Develop an EDI data collection and reporting framework that is aligned with legislation and the needs and requirements of the NCE Annual Progress Report.

5.8 Healthy Work Environment

- Development of processes for employees to give regular feedback about their workplace experience without retaliation and to recommend and/or assist with changing policies or practices in response to that feedback.

- Development of human resource policies that support work-life balance, comply with current

---

providing them with increasing responsibilities.

- Budgets are clear, informed by the mission and strategic plan, and compliant with all legal and financial requirements.

- The organization has appropriate financial processes and policies that support fund categorization and handling, cash management, investments, and control risks.

- The organization regularly assesses the value and importance of EDI to achieving the organization's mission and sets goals that have measurable results, with a particular emphasis on ensuring the inclusion and strong representation of Indigenous individuals in network governance and management.

- The Network provides a safe and healthy work environment, protecting employees and network participants from harm and unnecessary risk

- The organization regularly uses reliable information technology systems that provide timely, accurate, and relevant information to facilitate workflow, track its data, and increase efficiency and effectiveness in accomplishing its mission-driven goals.

- Communications are intentional, strategically integrated and central to all organizational planning, and advance the organization's mission, vision, values, and goals.

regulations, and align with the policies of organizations hosting network employees.

5.9 Information Technology

- The organization invests in technology resources that support internal and external communications, employee efficiency and effectiveness, and reliable and compliant information management.

- Identification of a platform to support digital collaboration and communications within the Administrative Centre, within Governance, and between the Administrative Centre and Governance, as well as between the Administrative Centre and network participants (e.g. Network Investigators, trainees, or members of ad hoc work teams or advisory groups).

5.10 External Communications

- Develop a strategic communications plan and an accompanying operational plan that creates a foundation for consistent branding, storytelling, and communications style across all network activities.

CANADIAN MOUNTAIN NETWORK

#MountainsMatter

AN INITIATIVE OF CANADA'S GRANTING AGENCIES

Government of Canada

Networks of Centres of Excellence

Gouvernement du Canada

Réseaux de centres d'excellence

HOST INSTITUTION

UNIVERSITY OF ALBERTA

SUSTAINING PARTNERS

Yukon

UNIVERSITY OF CALGARY

UNIVERSITY OF ALBERTA
FACULTY OF SCIENCE

Follow us!

canadianmountainnetwork.ca