

Inuvialuit Settlement Region **Climate Change Strategy**



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Message from Leadership

← **Duane Smith**
Chair & Chief Executive Officer
Inuvialuit Regional Corporation

Inuvialuit of all ages and from all walks of life share a deep connection to the land and waters within the Inuvialuit Settlement Region (ISR). A healthy regional ecosystem and the ability to safely access the land are fundamental to the sustenance of Inuvialuit communities and the preservation of time-honoured traditions. It is not an overstatement to say that the land provides a foundation for community bonds, cultural expression, economic activity, public health and food security for Inuvialuit. Keeping in mind the importance of the natural environment to Inuvialuit identity and overall wellness, both the observed and anticipated effects of climate change on the ISR are key concerns for Inuvialuit beneficiaries. To address those concerns, the *ISR Climate Change Strategy* summarizes a wide range of impacts that an increasingly warmer and wetter climate will bring to the ISR. It also describes a multi-faceted course of action toward climate change mitigation, adaptation and resilience across the region.

Our authority to lead climate action in the ISR is ensured by the Inuvialuit Final Agreement (IFA), a comprehensive land claim agreement that affirms Inuvialuit rights to land, wildlife management and environmental stewardship. As the ISR's environment changes in step with an unpredictable Arctic climate, Inuvialuit organizations will utilize the full extent of their powers as detailed in the IFA to play

a central role in the development of climate policies and programs at the regional, territorial, national and circumpolar levels. This commitment to Inuvialuit-led climate action aligns with a broader vision to enable the people of Inuit Nunangat to directly shape the policy decisions that will influence their lives. Advancing Inuit capacity in climate decision-making is in fact highlighted as a priority in the *National Inuit Climate Change Strategy*, and the ISR, through the adoption of its own climate change strategy, is well-positioned to meaningfully contribute to this initiative.

In our previous discussions on climate change, we heard from Inuvialuit beneficiaries about new and unfamiliar risks to their communities, from the introduction of contaminants in country foods to permafrost degradation resulting in the displacement of homes, cultural places and critical infrastructure. The *ISR Climate Change Strategy* aims to take this discussion further by providing policy direction toward a more sustainable and resilient future for all Inuvialuit. At the same time, it recognizes that to move forward, we must pay homage to our distinct history and cultural values. Climate action in the ISR will succeed through the measured analysis of both Western science and the lessons learned from Inuvialuit Traditional Knowledge.

Aaŕigaa!

Acknowledgements

The Inuvialuit Regional Corporation (IRC) would like to thank all Inuvialuit beneficiaries and organizations for contributing their time and knowledge to support the creation of this strategy. Acknowledgement goes to Inuvialuit participants of engagement activities that began in 2016 with the development of the *Inuvialuit on the Frontline of Climate Change* report, which provided a strong foundation for this document. Informative feedback was received over the years from the members of Inuvialuit Co-management Committees, Community Corporations, Elders Committees, Hunters and Trappers Committees and the Regional Youth Advisory Group, among others. We would also like to acknowledge the Inuvialuit Communications Society for overseeing the design of this document, and IRC's Communications Division for providing photos and editorial support. We would like to extend our gratitude to IRC's Government Affairs Division as well for editorial support. Finally, a special thank you to IRC's Innovation, Science and Climate Change Division for leading the development of this strategy and managing its publication.

Executive Summary

CLIMATE CHANGE IMPACTS IN THE ISR

Located in Canada's Western Arctic, the Inuvialuit Settlement Region (ISR) is our Nunatsiaq, or beautiful land. The ISR was established in 1984 by the Inuvialuit Final Agreement (IFA). The IFA, signed between Inuvialuit and the Government of Canada, is the first comprehensive land agreement signed north of the 60th parallel. The ISR is one of the four regions within Inuit Nunangat, the Inuit homeland in Canada.

Inuvialuit communities and Traditional Knowledge experts have raised deep concerns about climate change and the rapid and unfamiliar environmental transformations underway in the ISR. Inuvialuit observations of climate change impacts include shifting ice freeze-up and break-up trends, plant and animal species migration, coastal erosion, permafrost degradation, land slumps, flooding and health and wellness effects. These and other impacts are expected to grow in frequency and intensity over time as the average annual temperature continues to increase across the Canadian Arctic. For Inuvialuit whose cultural identity and overall wellness are intrinsically linked to the land and waters of the ISR, the risks associated with climate change can lead to both tangible and intangible consequences.

INUVIALUIT APPROACH TO CLIMATE ACTION

Action on climate change mitigation, adaptation and resilience is critical to ensuring the prosperity and wellness of Inuvialuit communities. Equally important is the continuous effort towards the inclusion of Inuvialuit priorities, cultural values and Traditional Knowledge in developing climate solutions for the ISR. To that end, the *Guiding Principles for Climate Action in the ISR* were compiled with direct input from Inuvialuit beneficiaries and embedded in this strategy as key considerations for all climate goals and actions.

A considerate and responsive approach to communication is another prerequisite for ensuring Inuvialuit have the necessary information to take control of the climate change policies and initiatives that will influence their lives. In addition to highlighting specific best practices for community engagement in the ISR, this strategy articulates an ongoing commitment to consult a diverse group of Inuvialuit organizations on implementation and monitoring progress.

Furthermore, given that climate change is a global issue, effective partnerships between Inuvialuit and both government and non-government entities at the local, regional, territorial, national, circumpolar and international levels are crucial to advancing climate goals and actions in the ISR. The alignment of this document with the Inuit Tapiriit Kanatami's *National Inuit Climate Change Strategy* is viewed as particularly important as Inuvialuit share in the vision for self-determination in addressing climate change impacts across Inuit Nunangat.



The ISR Climate Change Program

1

Thematic Area	Goal	Actions
Food & Wellness	<i>Strengthen ISR food and wellness systems through supports and adaptations that recognize climate change.</i>	<ul style="list-style-type: none"> • Continue to promote social capital that will help reduce impacts from climate-related disasters and accelerate recovery and long-term adaptation within ISR communities. • Promote continued surveillance of traditional foods by regular monitoring of potential exposure to climate change derived contaminants, parasites and diseases. • Continue to fund and promote traditional harvesting support programs (e.g. CHAP, IHAP). • Encourage Inuvialuit involvement in the creation and implementation of food security programs and policies. • Celebrate cultural ties to a changing Arctic environment through workshops, skills-training and on-the-land programs.

2

Safety	<i>Develop mechanisms to ensure travel across ISR lands and waters are safe.</i>	<ul style="list-style-type: none"> • Support community-based monitoring programs that increase awareness of risks associated with climate change. • Enhance and develop communication systems within each ISR community to support on-the-land travel safety and risk communication. • Advance safety programs that support survival skills and safe navigation within the ISR. • Increase community awareness of levels of risk tolerance and the impacts of climate change on traditional travel routes. • Secure and support community-based marine and search and rescue services.
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3

Housing & Infrastructure	<i>Advance the development of climate change resilient infrastructure.</i>	<ul style="list-style-type: none"> • Support the development of permafrost hazard mapping in the ISR. • Advocate for increased integration of climate resilience into policies that drive infrastructure planning, development and placement. • Help build capacity within ISR communities to assess, plan and manage infrastructure and improve climate resilience. • Encourage the use of local and Traditional Knowledge in infrastructure planning across the ISR. • Support the continued development of community-based emergency response measures to respond to weather events that would cause serious infrastructure damage or loss of asset.
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The six thematic areas of this strategy and their associated goals and actions are outlined in this table. They are components of a broader climate change program in the process of being planned and implemented across the ISR.

4

Thematic Area	Goal	Actions
Education & Awareness	<i>Advance greater accessibility to climate change information and local knowledge for all communities within the ISR.</i>	<ul style="list-style-type: none"> • Support Inuvialuit community driven climate change research and monitoring in the ISR. • Expand community-based environmental monitoring programs to include all ISR communities. • Continue to advance land-based learning and promote intergenerational knowledge sharing on climate change.

5

Ecosystem Health & Diversity	<i>Protect and conserve our natural heritage for present and future generations.</i>	<ul style="list-style-type: none"> • Advocate for the long-term funding of Inuvialuit-led climate change research. • Advance the identification and preservation of historic and cultural sites within the ISR that are at risk of being negatively impacted by climate change. • Increase data accessibility by creating an ISR data platform that can be easily accessed by communities.
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6

Energy	<i>Promote increased energy security within ISR communities.</i>	<ul style="list-style-type: none"> • Advance regional driven research that helps to better understand the current energy landscape. • Continue to support the development of community-based strategies that increase energy efficiency and conservation. • Work with ISR communities to assess energy needs and resources, while exploring renewable and, where necessary, cleaner non-renewable energy opportunities that could reduce energy costs and increase energy independence.
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- Support the continued development of climate change terminology that promotes language revitalization in all three ISR dialects.
- Continue to promote the integration of Inuvialuit knowledge with western science to support all future Arctic climate change policies and research.

- Support the development of climate change indicators (physical and biological) to convey environmental trends and to monitor progress on adaptation across the ISR.
- Continue to support ISR community-based climate hazard mapping and vulnerability assessments.

- Support the adoption of secure renewable and, where necessary, cleaner non-renewable energy investments, employment opportunities and capacity retention.
- Promote community coordination and collaboration by creating regional energy goals, objectives and projects that would benefit all Inuvialuit within the ISR.

Pictured: Qakurnak,
meaning frost
accumulated on ice.



Table of Contents

8

Part I: Introduction

- 10 Inuvialuit Settlement Region
- 10 Climate Change in the ISR
- 13 Climate Action
- 16 Inuit Nunangat

18

Part II: Guiding Principles

20

Part III: Goals and Actions

- 21 Measuring Progress
- 22 Food & Wellness
- 24 Safety
- 28 Housing & Infrastructure
- 30 Education & Awareness
- 32 Ecosystem Health & Diversity
- 34 Energy

36

Part IV: Supporting Plans

- 33 Communication Plan
- 35 Program Review

40

Part V: Conclusion

42 **Appendix A:**
*Modelled Changes
in Temperature and
Precipitation for ISR
Communities*

45 **Appendix B:**
*Regional Alignment
with the National
Strategy*

48 **References**

Part I: Introduction

8 **T**he impacts of climate change are not abstract concepts to the people who call the Inuvialuit Settlement Region (ISR) home. Located in Canada's Western Arctic, the ISR is our Nunatsiaq, or beautiful land. The ISR was established in 1984 by the Inuvialuit Final Agreement (IFA). Figure 1 shows the location of the ISR relative to the rest of Canada. There are few places in the world experiencing the effects of anthropogenic climate change as rapidly and intensely as the ISR. The inequalities inherent to climate change are also easily observed across the region. While greenhouse gas emissions on a regional basis are among the lowest in the country, some of the most damaging and least understood climate change impacts are affecting the health and livelihood of ISR communities.^{1,2}

The *ISR Climate Change Strategy*, developed by the Inuvialuit Regional Corporation (IRC), aims to address the wide-ranging issues and opportunities resulting from climate change that Inuvialuit communities face and will continue to experience in the coming years. This strategy's success will depend on strong partnerships between Inuvialuit and Inuit organizations across the country, as well as the Government of Northwest Territories (GNWT), the Government of Yukon, the Government of Canada, municipalities, educational and research institutions, private businesses and other key stakeholders.

This document is composed of core goals across six thematic areas:

1. Food and Wellness
2. Safety
3. Housing and Infrastructure
4. Education and Awareness
5. Ecosystem Health and Diversity
6. Energy

Each goal is accompanied by enabling actions for advancing climate change mitigation and adaptation in the ISR. In many instances, work is already planned or underway to implement these actions and support climate resilience in Inuvialuit communities.

Inuvialuit Traditional and Local Knowledge (TLK) experts have warned that the land and waters of the ISR are not what they used to be. According to one expert, “prevailing winds previously blew from the northwest, but now are more forceful and blow from the east. High water levels make it difficult to distinguish where the banks of rivers are located. Strong winds are causing arid conditions in the Delta, and fewer blizzards have been observed in the winter [in some places].”³

Furthermore, the changing climate introduces unique challenges to preserving the Inuvialuit way of life. For example, climate change is restricting travel and access to the land – “people have had to change their travel patterns because of an increase in rain, which sits on top of sea ice and ‘rots’ it, rendering the ice potentially unsafe for travel.”⁴

What follows is the ISR’s commitment to take action on climate change and enact the necessary solutions to leave a sustainable legacy for future generations.

¹ Government of British Columbia

² Toronto Atmospheric Fund

³ Kavik-Stantec, 32.

⁴ Kavik-Stantec, 33.



← Figure 1: Location of the Inuvialuit Settlement Region (ISR) relative to Canadian provinces and territories. Map by the Inuvialuit Regional Corporation.



↓ Our Lady of Victory ("Igloo") Church is located in Inuvik, the ISR's largest community. Photo by Inuvialuit Regional Corporation.



INUVIALUIT SETTLEMENT REGION

In 1984, Inuvialuit and the Government of Canada signed the IFA, the first comprehensive land claim agreement signed north of the 60th parallel.

As defined in section one of the IFA, the basic goals expressed by Inuvialuit and recognized by Canada in concluding the agreement are: to preserve Inuvialuit cultural identity and values within a changing northern society; to enable Inuvialuit to be equal and meaningful participants in the northern and national economy and society; and to protect and preserve the Arctic wildlife, environment and biological productivity.⁵

The IFA describes the ISR and recognizes within the region Inuvialuit fee simple absolute ownership of approximately 15,000 square kilometres of subsurface lands, referred to as 7(1)(a) lands, and approximately 90,000 square kilometres of surface lands, referred to as 7(1)(b) lands, in the Western Arctic region of the Northwest Territories and the Yukon North Slope.

⁵ Indian and Northern Affairs Canada, 1.

Beyond the mainland, the ISR includes parts of the Arctic Ocean, Herschel Island, Banks Island, the western part of Victoria Island and some of the Parry Islands. As shown in Figure 2, six communities are found within the ISR – they are Aklavik, Inuvik, Paulatuk, Sachs Harbour, Tuktoyaktuk and Ulukhaktok.

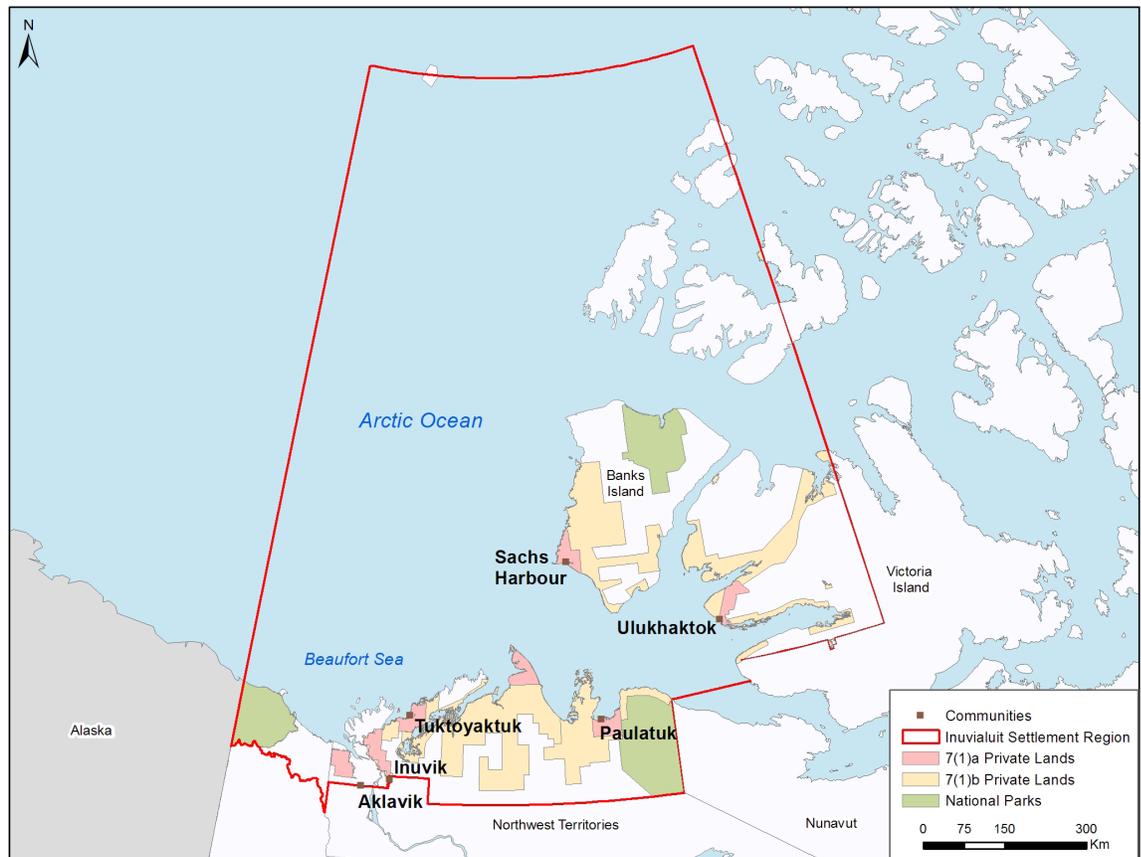
The ISR consists of diverse landscapes and habitats for wildlife. Along the Mackenzie River, Aklavik and Inuvik are situated below the tree line with access to a variety of edible plant species. Near the Mackenzie Delta, pingos reaching up to 70 metres in height dot the land around Tuktoyaktuk. Heading east, Paulatuk is situated near important breeding grounds for migratory birds and caribou. Further north, Ulukhaktok and Sachs Harbour are island communities with coastal waters that support crabs, sea urchins, clams, Arctic cod and the marine mammals that feed on them.

Inuvialuit culture is intrinsically tied to the land and waters. Access to on-the-land cultural and traditional pursuits, including sustenance hunting and fishing, is exceedingly important. As a result, effective stewardship of the ISR's rich yet fragile ecosystem is a responsibility willingly shared by all who call the region home.

CLIMATE CHANGE IN THE ISR

Across generations, Inuvialuit have shared stories and observations about irregular weather patterns and a rapidly changing environment. Over the past few decades, Inuvialuit have also participated in the collection of research data on increasing average annual temperatures, shifting ice freeze-up and break-up trends, plant and animal species migration, coastal erosion, permafrost degradation, land slumps and flooding.

→ Figure 2: Locations of the six ISR communities.
 Map by Inuvialuit Regional Corporation.



Climate change is defined as a change in climate directly or indirectly resulting from human activity that fundamentally alters the composition of Earth’s atmosphere. The changes coming from human activity add to natural climate variability over comparable time periods.⁶

Human, or anthropogenic, causes of climate change include the use of fossil fuels (e.g. coal, natural gas, diesel) and major land-use changes for development purposes (e.g. clearing of forests). The consumption of fossil fuels leads to the emission of greenhouse gases (GHGs), while clearing natural environments like forests and wetlands reduce the sequestration of GHGs. The net result is an increasing concentration of GHGs in the atmosphere.

A higher concentration of GHGs translates into a stronger global greenhouse effect. GHGs like carbon dioxide, methane and nitrous oxide trap heat from the sun and contribute to set-

ting the conditions for life on Earth. However, the development of nation-state economies since the Industrial Revolution have led to an exponential growth in atmospheric GHGs. In turn, large parts of the world now face an uncertain future driven by rising temperatures.⁷

Climate change has already caused dramatic warming in Canada. Between 1948 and 2016, the average annual temperature increased by 1.7°C across the country. Over the same period, Northern Canada (Yukon, Northwest Territories and Nunavut) experienced the most significant warming – average annual temperatures here increased by 2.3°C.⁸

Observations made by Inuvialuit community members, including comparisons against traditional insights about the weather, support

⁶ United Nations (a), 7.

⁷ NASA Global Climate Change.

⁸ Bush and Lemmen, 125-127.



→ Ice freeze-up and break-up trends are less predictable due to climate change. Photo by Inuvialuit Regional Corporation.



the finding regarding rising temperatures. In fact, Inuvialuit TLK experts have linked several specific changes to higher average temperatures, including freezing rain during winter months, heavier snow consistency and greater prevalence of fog and cumulonimbus cloud formations.⁹ These have all been observed in greater frequency across the ISR.

The latest climate projections show even more warming ahead. Under a low emissions scenario (RCP2.6), the average annual temperature in Canada is expected to increase by 1.5°C between 2031 and 2050, and by 1.8°C between 2051 and 2100, relative to a 1986 – 2005 reference period. If a high emissions scenario (RCP8.5) were to occur, Canadians should anticipate much larger increases in the average annual temperature, estimated at 2.3°C between 2031 and 2050, and 6.3°C between 2051 and 2100.¹⁰ The projected temperature changes resulting from the low and high emissions scenarios, as depicted in Figure 3, highlight two distinct pathways.

These projections also indicate that temperature increases will be more drastic in Northern Canada. Under the same high emissions scenario, the average annual temperature in the North is expected to rise by 2.7°C between 2031 and 2050, and by 7.8°C between 2051 and 2100.¹¹

A similar level of projected warming is anticipated for the six ISR communities. Assuming a high emissions scenario (RCP8.5) and a reference period of 1976 – 2005, all six communities are expected to become warmer and wetter to varying degrees between 2051 and 2080.¹² These local changes in temperature and precipitation are illustrated in the charts shown in Appendix A.

One of the most concerning consequences that will result from a warmer, wetter ISR is the reduction in sea ice. Perennial sea ice is on the decline throughout the Canadian Arctic. Many parts of the Beaufort Sea are likely to be ice free in August and September by the middle of this century.¹³

Diminishing sea ice coverage is linked to stronger wave energy and storm surges, which are further compounded by relative sea level rise in some areas.¹⁴ The increased likelihood of storms is in turn connected to rapid coastal erosion and loss of critical infrastructure. As the landscape literally changes and ice conditions become less predictable, Inuvialuit will encounter mounting barriers to free and safe travel.

This means traditional harvesting as a means of sustenance and expression of culture

⁹ Nickels et al, 8.

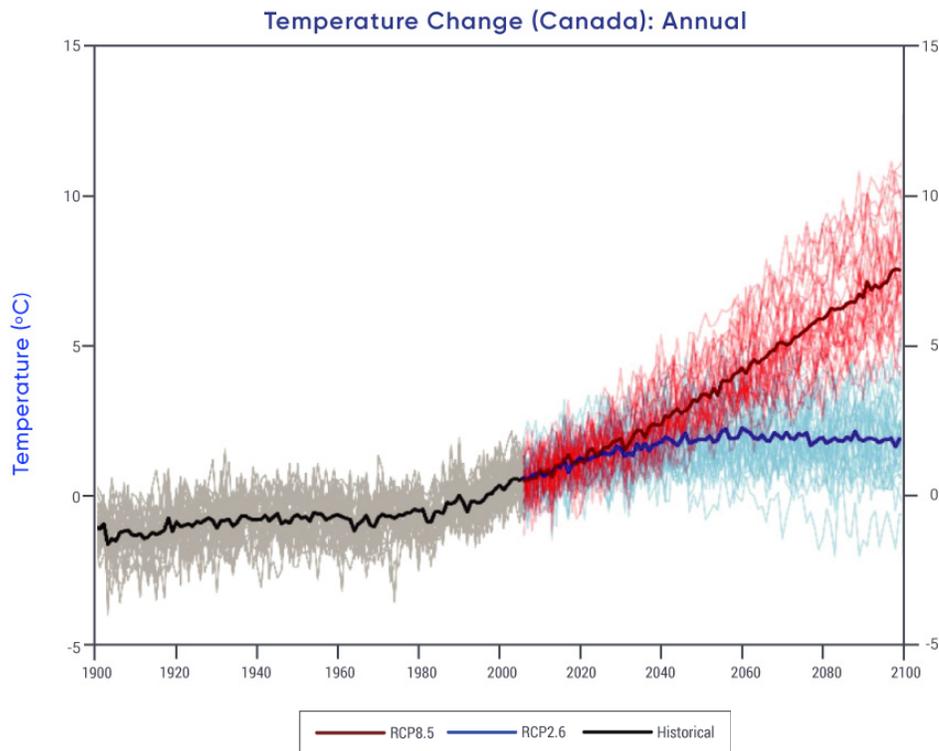
¹⁰ Bush and Lemmen, 132.

¹¹ Bush and Lemmen, 435.

¹² Climate Atlas of Canada.

¹³ Bush and Lemmen, 218.

¹⁴ National Snow and Data Center.



← Figure 3: Impact of low and high emissions scenarios on Canada's average annual temperature change. Figure from Canada's Changing Climate Report. Available at <https://changingclimate.ca/CCCR2019/graphics/>.

will also become less accessible. However, given its continued importance to the Inuvialuit way of life, traditional harvesting will carry on in ISR communities, supported by new safety precautions and adaptation measures. As one local harvester put it, "I'm still going to depend on harvesting, different species if it has to be. The majority of my food I still get from the land... You just change with the changes, I guess. As long as I'm alive, I'll keep doing what I'm doing."¹⁵

In summary, climate change affects multiple environmental, ecological and human systems at once. These overlapping impacts are in some ways more pronounced for Inuvialuit communities due to the high value placed on living on the land. To ensure this vital connection to the land is kept intact, this strategy describes a wide cross-section of systems affected by climate change and proposes solutions that leverage positive synergies between people, organizations and the natural environment.

CLIMATE ACTION

Addressing the impacts of climate change ultimately requires the planning and implementation of focused actions. These actions are broadly categorized under two approaches: adaptation and mitigation.

Adaptation refers to the process of adjusting to actual and anticipated climate change impacts as a means to reduce harm and take advantage of possible benefits. It is often closely associated with the concept of climate resilience, which specifically refers to the adaptive capacity of social, economic and environmental systems to not only survive hazardous events, but also transform over time to maintain their essential function.¹⁶

¹⁵ Inuit Circumpolar Council, 11-12.

¹⁶ IPCC (a), 542, 557.



Examples of climate change adaptation in the ISR include:

- Inuvialuit on the Frontline of Climate Change Report
- ISR Drilling Sumps Failure and Climate Change Report
- “Imaryuk” (Husky Lakes) Monitoring Program
- Permafrost and Geo-Hazards Monitoring Workshop
- SMARTIce Tool Implementation
- Tuktoyaktuk Community Climate Resilience Project
- Improving Communication on Climate Change and Long-Range Contaminants for Communities and Researchers
- ISR Marine Navigation Safety Precautions
- Yukon North Slope Wildlife Conservation and Management Plan

On the other hand, mitigation refers to reducing GHG emissions or creating GHG sinks as a means to limiting the detrimental impacts of future climate change.¹⁷ Examples of mitigation measures within the ISR include the installation of renewable energy infrastructure (e.g. solar panels, biomass stoves) and energy efficiency upgrades in homes and other buildings. Transitioning to less carbon intensive fossil fuels (i.e. diesel to natural gas) is another community-scale mitigation measure being evaluated.¹⁸

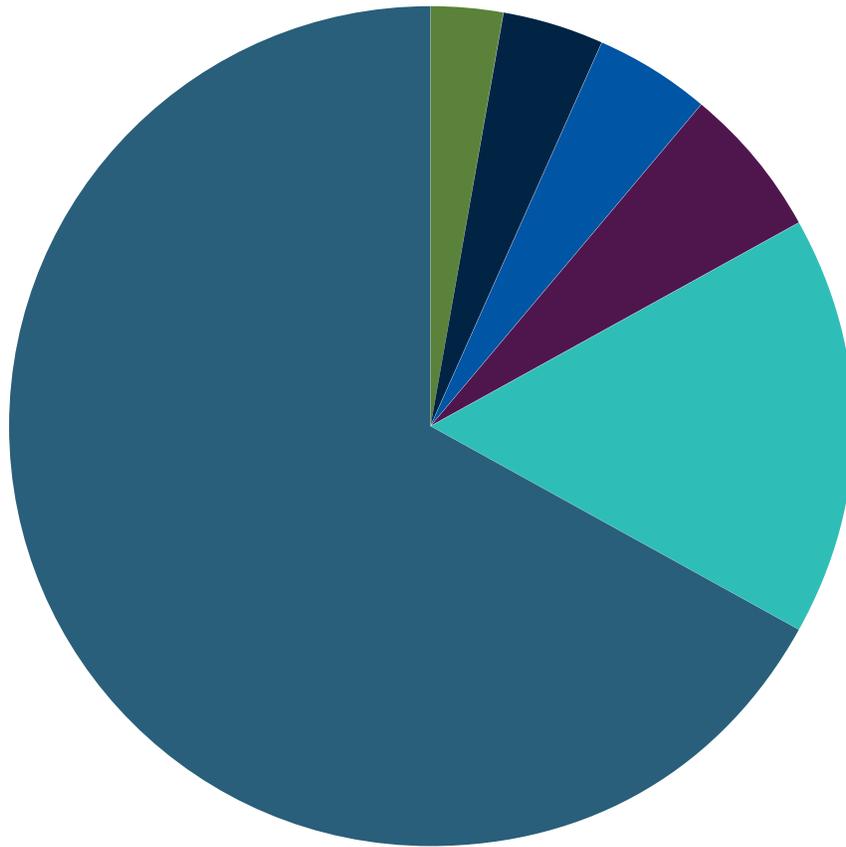
The six ISR communities emit a combined total of over 100,000 tonnes of carbon dioxide equivalent (tCO₂e) on an annual basis.¹⁹ This total is roughly equivalent to annual emissions from 30,000 passenger vehicles.²⁰ Figure 4 shows a breakdown of the emissions total by each community. It is worth noting that there is a strong correlation between each community’s population size and annual emissions.

While climate change mitigation and adaptation are both important for long-term sustainability, this strategy is largely dedicated to the latter. This emphasis on adaptation is based on both community priorities, as outlined in the 2016 *Inuvialuit on the Frontline of Climate Change* report, and the reality of planning for a sparsely populated region facing significant energy security issues. More specifically, this strategy considered the potential risk of even higher energy costs associated with some types of renewable energy and fuel switching in the Arctic environment, in combination with the minimal impact that mitigation measures in the ISR would have at this time on the national GHG emissions total of 716 megatonnes of carbon dioxide equivalent (MtCO₂e) per year.²¹

This is not to downplay the importance of climate change mitigation. However, a fair and equitable approach to climate action must acknowledge that, historically, Inuvialuit remained disadvantaged while the rest of Canada industrialized by freely emitting GHGs and other pollutants. Given this background, adapting to climate change and continuously improving Inuvialuit standard of living, which is still below the national average, take precedence over mitigation measures that may set the ISR back further.²²

¹⁷ IPCC (a), 554.
¹⁸ Sustainability Solutions Group, 109-110.
¹⁹ Nihtat Energy, 5.
²⁰ Natural Resources Canada (a).
²¹ Environment and Climate Change Canada (a), 5.
²² Inuit Tapiriit Kanatami (a), 7.

↓ Figure 4: Proportion of ISR GHG Emissions Produced by Community. Data from Nihitat Energy's Community Energy Profiles.



GHG EMISSIONS (TONNES/YR)

- SACHS HARBOUR — 2,605
- PAULATUK — 3,744
- AKLAVIK — 4,370
- ULUKHAKTOK — 5,637
- TUKTOYAKTUK — 15,809
- INUVIK — 65,642

ISR TOTAL EMISSIONS: 103,814 TONNES/YR

ISR EMISSIONS PER CAPITA: 17.3 TONNES/YR



INUIT NUNANGAT AND BEYOND

The *ISR Climate Change Strategy* is designed to work in tandem with other climate change programs. In particular, this document is intended to connect with complimentary strategies that address climate change across Inuit Nunangat, the Inuit homeland in Canada. As illustrated in Figure 5, Inuit Nunangat is comprised of the ISR, Nunavut, Nunavik and Nunatsiavut. By building bridges between the ISR and the rest of Inuit Nunangat, this strategy seeks to further consolidate Inuit representation in decision-making processes on climate change policies and research agendas at all levels.

In turn, significant effort went into ensuring alignment with the Inuit Tapiriit Kanatami (ITK), the national representative organization for the 65,000 Inuit in Canada.

ITK published the *National Inuit Climate Change Strategy* in 2019, which envisions collaboration between Inuit communities “in the face of a changing climate to overcome inequities, ensure our long-term prosperity, and strengthen our health and well-being.”²²

ITK’s national strategy seeks to build partnerships between Inuit, governments, professional organizations, industry and, among others, the research community to advance action on the following priority areas:²³

1. Knowledge and Capacity
2. Health, Well-being and the Environment
3. Food Systems
4. Infrastructure
5. Energy

There are many instances where the goals and actions highlighted in Part III of this document intersect with the priorities identified in ITK’s national strategy. The specific areas where such intersections exist are outlined in Appendix B. Through the implementation of the goals and actions found in this strategy, the ISR will ultimately

make meaningful contributions to the national Inuit response to climate change.

At the intergovernmental level, a major milestone for Inuvialuit participation in climate change decision-making was reached in 2016 when the First Ministers of Canada issued the Vancouver Declaration on Clean Growth and Climate Change. In addition to agreeing to a national GHG emissions reduction target of 30 percent below 2005 levels by 2030, the First Ministers also committed to strengthen collaboration with Indigenous peoples on climate action, “based on recognition of rights, respect, cooperation and partnership.”²⁵ At the end of the same year, the Paris Agreement came into effect, setting the world on the path to keeping global temperature rise this century to well below 2°C based on pre-industrial levels.²⁶

More recently, the federal government introduced a new plan for sustainably rebuilding the economy as Canada emerges from the COVID-19 pandemic. It reaffirmed the commitment to respecting Indigenous leadership on climate action and working together to address climate change priorities in Indigenous communities, including infrastructure resilience, food security and clean energy.²⁷

This strategy will continue to monitor Indigenous, Canadian, circumpolar and international developments in the climate change policy arena with the aim to make appropriate connections to key partners. Inuvialuit recognize that climate change issues are often multi-faceted and call for coordinated approaches to both mitigation and adaptation efforts.

²³ Inuit Tapiriit Kanatami (a), 8.

²⁴ Inuit Tapiriit Kanatami (a), 19.

²⁵ Canadian Intergovernmental Conference Secretariat.

²⁶ United Nations (b).

²⁷ Environment and Climate Change Canada (b), 70.



† Figure 5: The Four Regions of Inuit Nunangat. Map by Inuit Tapiriit Kanatami, 2019. Available at <https://www.itk.ca/inuit-nunangat-map/>.

Part II: Guiding Principles

The *ISR Climate Change Strategy* fundamentally acknowledges that the success of climate action depends on how and to what extent community interests, priorities and values are reflected in the proposed measures for mitigating and adapting to climate change. This acknowledgement stems from the fact that Inuvialuit community members have for a long time expressed their desire to be included as equal partners in climate change policy and program decision-making.²⁸ As echoed by stakeholders across Inuit Nunangat, the Inuvialuit vision for climate action sees a future in which the people who live in the ISR directly determine the region's path towards sustainability and resilience.

To that end, the goals and actions described in the latter sections of this document were developed with the following guiding principles in mind. These principles were identified by the attendees of the Regional Climate Change Strategy Meeting, held in Inuvik in 2016.²⁹ Based on Inuvialuit values, their purpose is to foster Inuvialuit-led climate action and enhance the adaptive capacity of ISR communities.

²⁸ Nickels et al, 27.

²⁹ Inuvialuit Regional Corporation (a), 7.

1. RESPECTING OTHERS, RELATIONSHIPS AND CARING FOR PEOPLE

Climate change is impacting the lives of [Inuvialuit] beneficiaries. Climate change mitigation and adaptation must be done out of care for beneficiaries and their needs. These actions must respect Inuvialuit Traditional Knowledge and take into consideration the important contributions all Inuvialuit can make toward planning for the future.

2. PROMOTING GOOD SPIRIT BY BEING OPEN, WELCOMING AND INCLUSIVE

Inuvialuit must take an inclusive approach to climate change adaptation planning and research.

3. SERVING AND PROVIDING FOR FAMILY AND/OR COMMUNITY

Inuvialuit are committed to providing our region and its beneficiaries with the tools and resources needed to successfully adapt to a changing climate.

4. DECISION MAKING THROUGH DISCUSSION AND CONSENSUS

Individuals, community governments and other organizations will be given meaningful opportunities to share ideas and participate in decision making that will directly affect them and their communities.

5. DEVELOPMENT OF SKILLS THROUGH OBSERVATION, MENTORING, PRACTICE AND EFFORT

Participation in the development and implementation of adaptive measures will enhance individual and community self-reliance, empowerment and capacity. Training, capacity



↓ Community gathering for a nalukataq, or blanket toss. Photo by Inuvialuit Regional Corporation.

building and skills acquisition are key factors in increasing local adaptive capacity.

6. WORKING TOGETHER FOR A COMMON CAUSE

Collaborative relationships that are based on the integrated application of Traditional Knowledge, local knowledge and community-directed and approved scientific research will help us work together in innovative partnerships towards increased resilience.

7. BEING INNOVATIVE AND RESOURCEFUL

Wisely using human, natural and financial resources through innovative partnerships and collaboration. This will maximize our climate change knowledge and our potential to successfully adapt.

8. RESPECT AND CARE FOR THE PEOPLE, LAND, ANIMALS AND ENVIRONMENT

Taking responsible actions to control our own emissions of greenhouse gases and adapt to climate change impacts. Collaborate with stakeholders to make the decisions that will help ensure the long-term sustainability of Inuvialuit and the land and wildlife on which we all depend.

Part III: Goals and Actions

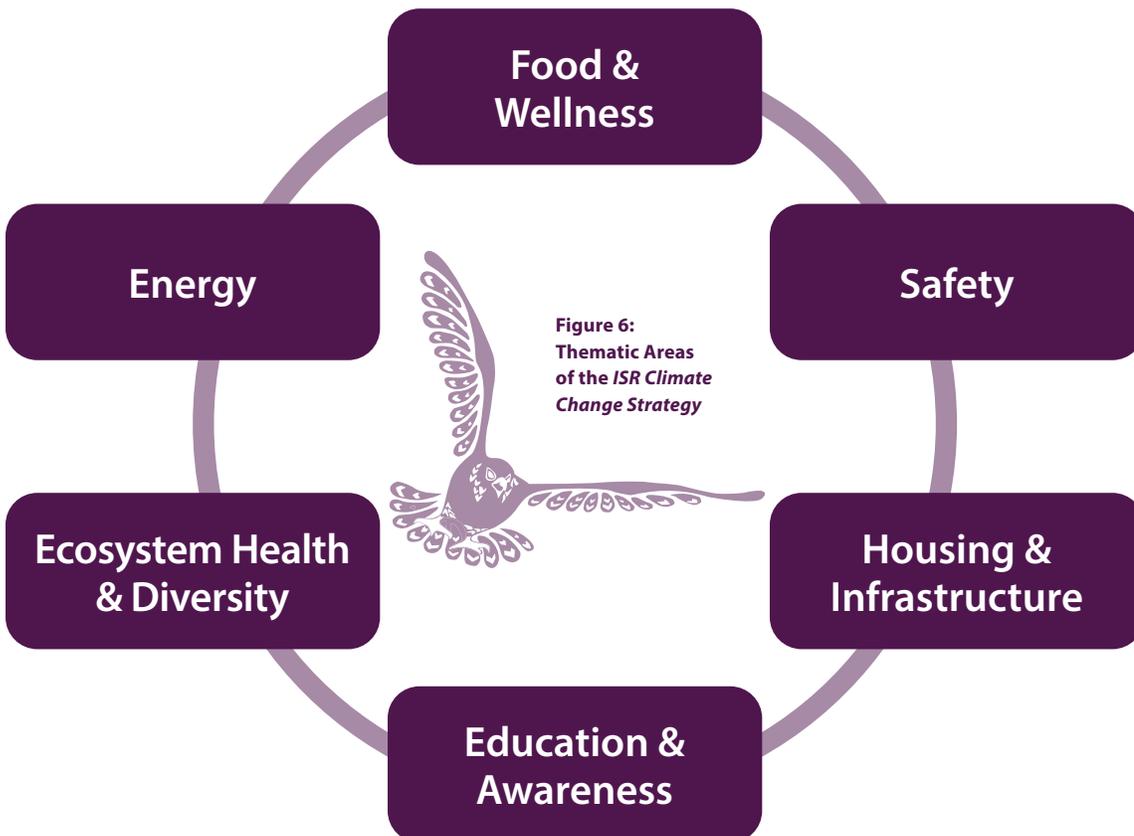
20 **T**he core goals of the *ISR Climate Change Strategy* correspond to the six thematic areas shown in Figure 6. These specific areas were selected on the basis of their representation of the breadth of climate change impacts observed in the ISR, the local priorities identified by Inuvialuit community members over multiple engagement sessions and the ISR's commitment to a shared vision of sustainability across Inuit Nunangat.

Within each thematic area, goals describe at a high level what needs to be achieved to advance sustainability and resilience in the ISR. The supporting actions in turn provide an overview of how Inuvialuit organizations, communities and other stakeholders can make progress toward the core goals. These goals and actions, organized by thematic area, are presented in the following pages.

MEASURING PROGRESS

In addition to the goals and actions, suggested indicators for each thematic area will also be identified to provide early guidance on the metrics to monitor throughout the implementation of this strategy. These indicators are only hypothetical; the actual indicators used for tracking progress will be developed in concert with individual project proposals and may ultimately differ.

Beyond the suggested indicators, it is expected that community meetings will be organized over regular intervals to share updates on implementation activities. Part IV contains details related to the communication plan.





Food & Wellness

Traditional harvesting of country foods serves as a critical source of vital nutrients for Inuvialuit. In fact, a health study conducted across Inuvit Nunangat in 2016 discovered the following breakdown for the Inuvialuit population:

- caribou provided approximately 20% of protein intake and over 22% of iron and zinc;
- fish contributed 6% to the total caloric intake, 17% to protein and 36% to vitamin D; and
- beluga contributed only 3% of the total caloric intake, but another 10% to vitamin D.³⁰

Climate change is threatening the health of Inuvialuit communities by fundamentally altering the above and other traditionally important sources of nutrition. The beluga harvest, for instance, declined from an annual average of 134 in the 1970s to 111 in the 1990s, even though the local human population grew by 26 percent around that time period.³¹ The increasing numbers of historically uncommon species is another area of concern, with Pacific salmon now causing issues for native Dolly Varden trout and Arctic char.³² The potential loss of char is particularly worrying as the vast majority of Inuvialuit respondents to a recent survey agreed that char are not only important as food, but also carry cultural significance.³³

In addition to declining harvests and the migration of unfamiliar species into the ISR, Inuvialuit observers have occasionally noticed wildlife getting weaker and unfit as food. One harvester remembers, “a few years back... we had a really warm spell and we had some rain [in January], and you notice a lot of dead caribou...”³⁴

However, despite the emerging risks, traditional harvesting continues to play an import-

ant role in bringing Inuvialuit community members together. Relationships between families, elders and youth are solidified by a shared sense of appreciation for the land, and these relationships contribute to the development of social capital in addressing the impacts of climate change in the ISR.

For example, the Inuvialuit Harvest Study is a community-based monitoring program that tracks Arctic wildlife harvest behaviour and patterns within and across years. The study data represents a significant scientific asset for ecosystem research and wildlife management, and its collection relies directly on Inuvialuit social capital.³⁵

Moving forward, support for Inuvialuit social capital will be enhanced to address food insecurity and other climate change derived threats to community wellness.

³⁰ Rosol et al.

³¹ Harwood et al, 15-17.

³² Inuvialuit Regional Corporation (b).

³³ Brogan, 10, 17, 21, 31, 42, 52.

³⁴ Wildlife Management Advisory Council (North Slope) et al, 25.

³⁵ Joint Secretariat (a).

→ The making of pipsi, or dried fish. De-boned and hung to dry in the sun or smoked in a smokehouse.
 Photo by Inuvialuit Regional Corporation.



Goal

Strengthen ISR food and wellness systems through supports and adaptations that recognize climate change.

Actions

- ✓ Continue to promote social capital that will help reduce impacts from climate-related disasters and accelerate recovery and long-term adaptation within ISR communities.
- ✓ Promote continued surveillance of traditional foods by regular monitoring of potential exposure to climate change derived contaminants, parasites and diseases.
- ✓ Continue to fund and promote traditional harvesting support programs (e.g. CHAP, IHAP).
- ✓ Encourage Inuvialuit involvement in the creation and implementation of food security programs and policies.
- ✓ Celebrate cultural ties to a changing Arctic environment through workshops, skills training and on-the-land programs.

Suggested Indicators

- Amount of traditional foods consumed by households
- Surveys and statistics on food borne illnesses
- Participation rates in food security, skills training and on-the-land programs
- Continuation of and improvements to Inuvialuit-led food security and wellness research



Safety

Safe and reliable travel across ISR lands and waters, whether for leisure or to enable traditional harvesting and cultural expression, is a vital aspect of the Inuvialuit lifestyle. However, safe access to the land is under threat in a variety of different ways due to the intensifying impacts of climate change above the Arctic Circle.

One of the most serious impacts of climate change for Inuvialuit is how it will make ice conditions less predictable. From fall to spring, travelers in the ISR rely on ice to safely move between their communities and various points of interest. Figure 7 illustrates the extent of traditional sled trails and other historic and seasonal travel routes. Recent studies have shown two fundamental changes happening to Arctic ice that correlate with GHG emissions and higher temperatures: (i) earlier melt and later freeze-up trends; and (ii) thinner ice resulting from the loss of perennial ice.³⁶ As conditions deviate from historical experience, Inuvialuit observers have expressed growing concerns over ice safety. “You have to really watch when you travel on the ice, you need to have experience... you have to know the condition.”³⁷

Another climate change factor affecting safety in the ISR is the increasing occurrence of storms and other extreme weather events. Coastal areas by the Beaufort Sea are projected to experience more intense and frequent cyclone activity as the diminishing sea ice extent prolongs the open water season.³⁸ Consequently, coastal communities and marine vessels in the region face increased risks during the warmer months.

Meanwhile, the trend towards higher winter precipitation presents additional risks during the colder months. Between 1948 and 2012, winter precipitation in Northern Canada increased by 54 percent, compared to an average

increase of 20 percent for all of Canada.³⁹ This scientific finding coincides with Inuvialuit observations of more frequent blizzards and white-out events and their impact on safe travel:

*Even though people do want to go out, they can't go out hunting bear anymore in their usual areas.... at this time of the year, January (wintertime). When he was young, there was no fog around at all. Nowadays, there's always fog associated with snow, with winds. Those are the big changes that he's seen. Constant bad weather.*⁴⁰

Even the ground itself is becoming less predictable and presents unique risks. As mean annual temperatures rise, permafrost degrades, leading to the formation of thaw slumps.⁴¹ Slumping disrupts both established roads and traditional travel routes, as well as historic camp sites.

These changes contribute to an increased sense of uncertainty and concerns over safe travel in the ISR. Although Traditional Knowledge will continue to play an important role in guiding Inuvialuit travel throughout the region, community members have called for the inclusion of new tools to address unexpected risks.⁴² In response, future adaptation planning will aim to advance safety standards through a mixture of system upgrades, new services and training programs.

³⁶ Niemi et al, 12.

³⁷ Nichols et al, 72.

³⁸ Ford et al, 84.

³⁹ Bush and Lemmen, 158.

⁴⁰ Joint Secretariat (b), 171.

⁴¹ Government of Northwest Territories (a).

⁴² Inuvialuit Regional Corporation (a), 24.

→ Ice fishing destinations are found along Inuvialuit traditional trails. *Photo by Inuvialuit Regional Corporation.*



Goal

Actions

Suggested Indicators

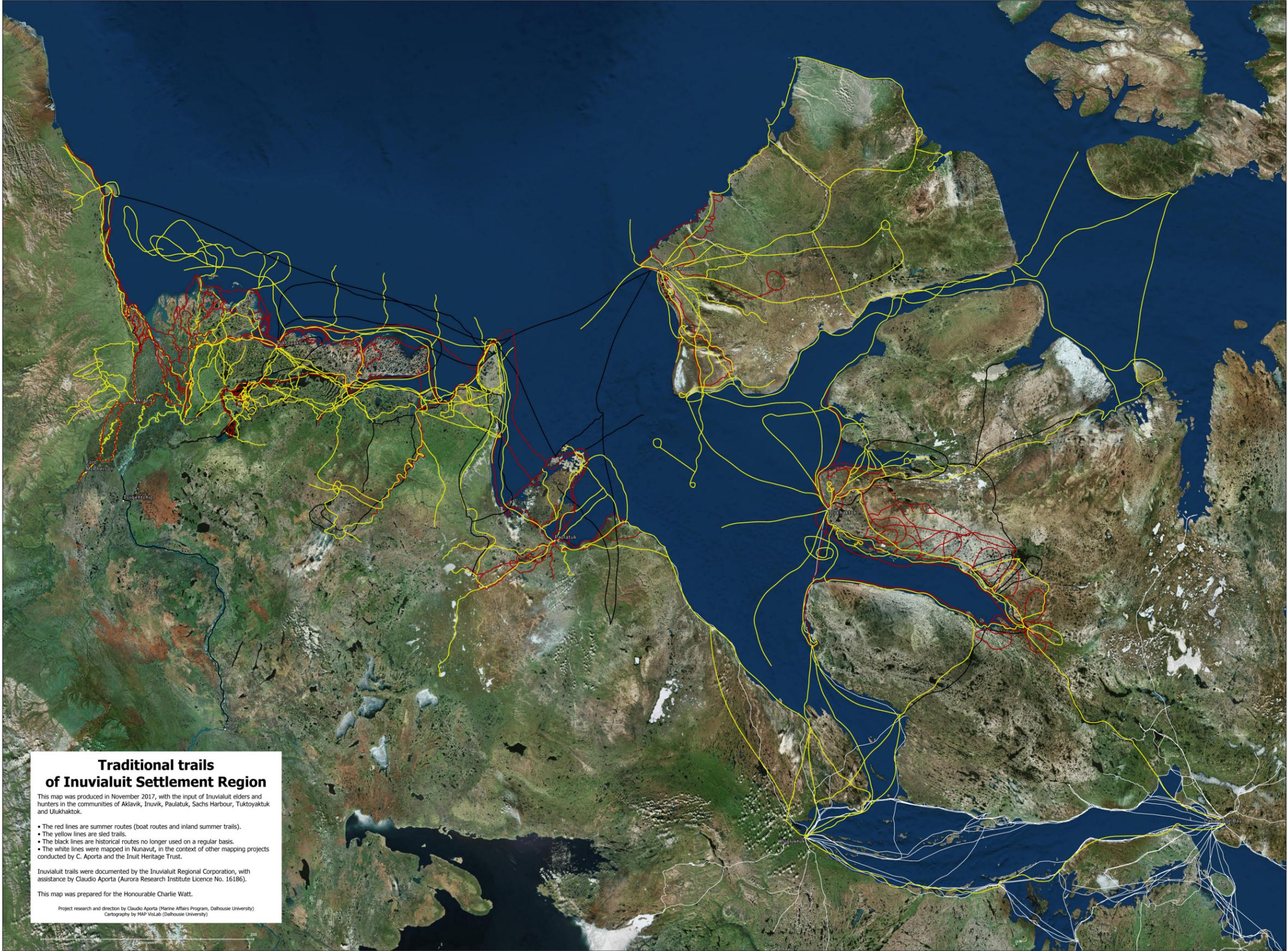
Develop mechanisms to ensure travel across ISR lands and waters are safe.

- ✓ Support community-based monitoring programs that increase awareness of risks associated with climate change.
- ✓ Enhance and develop communication systems within each ISR community to support on-the-land travel safety and risk communication.
- ✓ Advance safety programs that support survival skills and safe navigation within the ISR.
- ✓ Increase community awareness of levels of risk tolerance and the impacts of climate change on traditional travel routes.
- ✓ Secure and support community-based marine and search and rescue services.

- Recordkeeping of local observations of safety conditions
- Skills training workshop attendance and feedback
- Search and rescue capacity (counts of vessels, personnel, response times, etc.)

Safety cont'd

→ Figure 7: Inuvialuit Traditional and Historic Travel Routes. Map by Inuvialuit Regional Corporation, Claudio Aporta and MAP VisLab (Dalhousie University).





Housing & Infrastructure

Due to both historical disadvantages and the vast remoteness beyond the 65th parallel north, the infrastructure deficit is a difficult and persistent problem for the ISR and Inuit Nunangat at large. In fact, the lack of investment in northern infrastructure is linked to a wide range of negative consequences for Inuvialuit and Canadian interests, from slower economic development to international challenges against Canadian sovereignty in the High Arctic.⁴³

Issues related to adequate housing are particularly urgent for Inuvialuit communities. According to the 2019 *Inuit Nunangat Housing Strategy*, 144 additional housing units are needed in the ISR to mitigate overcrowding, and close to 32 percent of existing homes in the region require major repairs.⁴⁴

The challenges to meeting this housing demand and other infrastructure needs are further compounded by climate change. The entirety of the ISR is situated on top of permafrost, defined as ground material that maintains a temperature below 0°C for at least two consecutive years.⁴⁵ As a result of rising surface temperatures, this frozen layer has been subject to gradual thaw. Recent monitoring indicates that permafrost temperature increases have been up to 0.9°C per decade along the northern Mackenzie Valley.⁴⁶ Meanwhile, the active layer, which sits directly on top of permafrost and thaws every summer, has been growing in thickness since 2008.⁴⁷

As permafrost thaws and the active layer deepens, special considerations are required when planning infrastructure projects to not only ensure the stability of structures, but also to avoid further permafrost degradation. For instance, roads and airstrips generally cause subsurface heat gain due to snow clearance

and the use of darker and denser construction material.⁴⁸ The underlying permafrost can be protected if appropriate road design options are researched and deployed.

Coastal erosion is another significant problem affecting infrastructure in the ISR. In addition to storm surges and thermal abrasion, the growing duration of the open water season was identified as a driving force for erosion along the Canadian Beaufort Sea.⁴⁹ Many parts of the ISR are now at serious risk of being washed away. Aerial imagery shows that the shoreline in the community of Tuktoyaktuk receded by an average of 0.8 metres annually between 1950 and 1985.⁵⁰ Without intervention, much of Tuktoyaktuk Peninsula is projected to be gone by 2050, along with the critical infrastructure and cultural sites located there.⁵¹

To simultaneously close the infrastructure deficit and improve climate resilience, Inuvialuit organizations will continue to engage and work with governments, businesses, and other external partners. Sharing relevant information and building local capacity will enable progress towards this goal.

⁴³ House of Commons of Canada, 20-22.

⁴⁴ Inuit Tapiriit Kanatami (b), 26-27.

⁴⁵ Stern and Gaden, 303, 306.

⁴⁶ Bush and Lemmen, 234.

⁴⁷ Smith et al, 21.

⁴⁸ Stern and Gaden, 317.

⁴⁹ Lantuit et al, 13.

⁵⁰ Baird, 3.

⁵¹ Baird, 5.

→ Erosion is a serious risk to cabins, homes, infrastructure and entire communities.
 Photo by Inuvialuit Regional Corporation.



Goal

Actions

Suggested Indicators

Advance the development of climate change resilient infrastructure.

- ✓ Support the development of permafrost hazard mapping in the ISR.
- ✓ Advocate for increased integration of climate resilience into policies that drive infrastructure planning, development and placement.
- ✓ Help build capacity within ISR communities to assess, plan and manage infrastructure and improve climate resilience.
- ✓ Encourage the use of local and Traditional Knowledge in infrastructure planning across the ISR.
- ✓ Support the continued development of community-based emergency response measures to respond to weather events that would cause serious infrastructure damage or loss of asset.

- Localized geohazard indices based on scientific and Traditional Knowledge
- Investments in climate resilient housing, including new builds and upgrades
- Inventory of critical infrastructure located within locally defined high-risk areas
- Number of days of disrupted basic services to communities



Education & Awareness

Inuvialuit communities place significant value on lifelong learning and intergenerational knowledge transfer. The passing down of knowledge has both symbolic and practical implications – it strengthens cultural links to one’s ancestors, while also providing the skills and insights to safely pursue traditional activities on the land. The following quote by an Inuvik Elder highlights the importance of this education:

Like I said before, like when you grow up around it, you expect to do the same as what your parents taught you, your grandfathers taught you. It is just passed down the line which I’m doing right now to my grandchildren. They’re getting the knowledge and know how to do it. They trap. They’re making me happy anyway.⁵²

Climate change presents both challenges and opportunities for maintaining the passage of Inuvialuit TLK. On the one hand, as the environment and weather patterns become less predictable, even the most experienced knowledge holders face increasing difficulty traveling on the land.⁵³ Inuvialuit youth also recognize that the ISR they inhabit today is markedly different from when their parents and grandparents were young.⁵⁴ In light of such rapid changes, Inuvialuit understand and accept the importance of integrating multiple knowledge sources to respond effectively to present and future circumstances.

At the same time, research has shown that Traditional Knowledge can support and enhance climate change adaptation capacity. As Inuvialuit communities respond to changing conditions, Traditional Knowledge acts as both an “antecedent causal factor,” and as an “effect modifier.”⁵⁵

The former term refers to situations when adaptive actions, such as taking alternative travel routes, rely on Traditional Knowledge for execution, like insight on what supplies the new route would require. The latter term, meanwhile, defines the added benefit of holding Traditional Knowledge on the effectiveness of adaptive actions. For instance, experienced marine navigators are better positioned to discern and fully utilize risk communication about early sea ice break-up.

Considering the significant value that Inuvialuit TLK continues to provide, the intent of this subsection is to help foster knowledge acquisition and empower Inuvialuit community members to access, use and contribute climate change information in meaningful ways. Ongoing education and awareness initiatives will aim to engage Inuvialuit youth, adults and Elders and ultimately promote the integration of Traditional Knowledge into contemporary climate change research.⁵⁶

⁵² Elliott (a), 15.

⁵³ Inuit Tapiriit Kanatami (b), 10.

⁵⁴ Tuk TV.

⁵⁵ Pearce et al, 236.

⁵⁶ Inuvialuit Regional Corporation (c), 20.

→ Qilausiyaqtuat, or drum dancing, is an important form of cultural expression for Inuvialuit. It provides good opportunities for intergenerational learning.
Photo by Inuvialuit Regional Corporation.



Goal

Actions

Suggested Indicators

Advance greater accessibility to climate change information and local knowledge for all communities within the ISR.

- ✓ Support Inuvialuit community driven climate change research and monitoring in the ISR.
- ✓ Expand community-based environmental monitoring programs to include all ISR communities.
- ✓ Continue to advance land-based learning and promote intergenerational knowledge sharing on climate change.
- ✓ Support the continued development of climate change terminology that promotes language revitalization in all three ISR dialects.
- ✓ Continue to promote the integration of Inuvialuit knowledge with western science to support all future Arctic climate change policies and research.

- Number of climate science concepts translated into the Inuvialuktun language
- Opportunities for community participation in generating climate change information
- Incorporation of findings from Inuvialuit-led research in academic, government policy and other institutional initiatives
- Recruitment of Inuvialuit youth for on-the-land workshops, science camps and mentorships



Ecosystem Health & Diversity

An ecosystem consists of living organisms, the physical environment they inhabit, and the interactions between them. A healthy ecosystem, often through the diversity of its wildlife, plants and hydrogeological regimes, offers useful services that sustain human life as well. Ecosystem services critical for human societies can be categorized into the following:

- provisioning services, e.g. food, water, fiber, other material resources;
- regulating services, e.g. protection from extreme events, carbon storage, pollinators, water purification; and
- cultural services, e.g. recreational, educational and spiritual.⁵⁷

Archaeological sites like Kuukpak, situated on the east coast of Richards Island, offer a glimpse into how ecosystem services unique to the ISR sustained Inuvialuit communities over the centuries. Excavations of homes, animal bones and tools at Kuukpak show that, even to this day, many Inuvialuit rely on the same resources that enabled traditional harvesting for their ancestors.⁵⁸ As one Inuvialuit youth succinctly put it, “It [traditional harvesting] means life. You can’t live without food.”⁵⁹

Climate change is a serious threat to the preservation of this rich natural heritage. The rising average annual temperature is fundamentally altering the region’s ecosystems. One of the most visible changes is the growing spread of deciduous shrub species, especially west of the Mackenzie Delta, which are essentially moving north as conditions suitable for native tundra biomes subside.⁶⁰ At the same time, Inuvialuit observers have noticed a significant reduction in the number and productivity of berry plants.⁶¹ This is concerning for many community members who

recognize berry picking as a time-honoured family pastime.

Marine ecosystems in the Beaufort Sea are not left unaffected. On a global scale, the Arctic and Antarctic poles act as sinks for different types of chemicals.⁶² This means that contaminants from beyond the ISR naturally find their way here via oceanic and atmospheric currents.

Gradually rising concentrations of contaminants like mercury (Hg) in the ISR is a problem further exacerbated by climate change. The summer sea ice extent has decreased by approximately 12 percent per decade over the last 30 years.⁶³ The replacement of perennial sea ice by saltier first-year ice enables Hg to more readily enter the marine food web through microbial transmission in sea ice brine.⁶⁴ In turn, Inuvialuit communities that fish and harvest in the Beaufort Sea have historically and continue to face greater risk of exposure to dangerous substances.⁶⁵

To address this growing list of challenges to ecosystem health, a focus on building environmental monitoring and conservation capacity in the ISR is required.

⁵⁷ Robertson et al, 55.

⁵⁸ Friesen, 4-10.

⁵⁹ Elliott (a), 24.

⁶⁰ Federal, Provincial and Territorial Governments of Canada, 73.

⁶¹ Nickels et al, 10.

⁶² Barber et al, 140.

⁶³ Atkinson et al, 45.

⁶⁴ Barber et al, 144.

⁶⁵ Northern Contaminants Program Secretariat, 28.

→ Cranberries, yellow berries and blueberries are harvested over the summer months. *Photo by Inuvialuit Regional Corporation.*



Goal

Actions

Suggested Indicators

Protect and conserve our natural heritage for present and future generations.

- ✓ Advocate for the long-term funding of Inuvialuit-led climate change research.
- ✓ Advance the identification and preservation of historic and cultural sites within the ISR that are at risk of being negatively impacted by climate change.
- ✓ Increase data accessibility by creating an ISR data platform that can be easily accessed by communities.
- ✓ Support the development of climate change indicators (physical and biological) to convey environmental trends and to monitor progress on adaptation across the ISR.
- ✓ Continue to support ISR community-based climate hazard mapping and vulnerability assessments.

- Inventory and vulnerability assessments of historic and cultural sites
- Tracking of environmental changes, water quality and subsurface contamination
- Uptake of new environmental monitoring technologies



Energy

The ISR and its surrounding areas are endowed with significant energy resources. The region is known for its wealth of oil and gas deposits. Over one billion barrels of recoverable oil and 11 trillion cubic feet of natural gas were discovered around the Mackenzie Delta and in the Beaufort Sea.⁶⁶

Hydroelectricity generation along the Mackenzie River is another largely untapped source of energy, holding approximately 10,000 MW of potential supply to the territorial electricity grid.⁶⁷ Meanwhile, solar irradiance measurements show that a 1 kW system installed in one of the six ISR communities could generate between 700 to almost 1000 kWh per year.⁶⁸ Multiple sites across the ISR were also rated with wind power densities of 250 W/m² or greater, indicating their suitability for wind energy development.⁶⁹

Still, despite this natural abundance, Inuvialuit communities routinely struggle with energy security. The basic definition of energy security is the uninterrupted availability of energy at an affordable price.⁷⁰ Due to the persistent lack of both public and private investment in the ISR's energy infrastructure, Inuvialuit communities currently rely on expensive diesel imports to meet their energy needs. In addition to being susceptible to disruption by weather events and seasonal conditions, these imports explain why ISR residents face the highest electricity rate on average in Canada, at 68¢/kWh.⁷¹

Energy security in the ISR is further impacted by climate change. As described in an earlier section, shifting freeze-up and break-up trends are making ice conditions less safe for travel both at sea and on land. In fact, spring break-up for the Beaufort Sea in 2020 was forecasted to occur earlier than normal with a greater chance of mobile ice causing problems for

marine navigation.⁷² Negative effects on supply routes ultimately lead to delayed shipments of diesel and gasoline, which coincide with growing community concerns over low fuel reserves and vulnerability to emergency situations.⁷³

There is also the question of how the GNWT Carbon Tax will affect energy prices that are already too high in Inuvialuit communities. The tax on motive diesel is scheduled to rise from 5.5¢/litre in 2019 to 13.7¢/litre in 2022, while the tax on gasoline is set to increase from 4.7¢/litre to 11.7¢/litre over the same time period.⁷⁴ Although the full burden of this tax on residents is offset by a cost of living rebate, a recent assessment revealed that the tax may still reduce household incomes, consumption and, by extension, traditional activities in the ISR as it flows through various supply chains.⁷⁵

To address energy security issues in the ISR, the following actions emphasize a shift towards energy investments that can simultaneously reduce emissions, costs and barriers to reliable energy. The forthcoming *ISR Energy Action Plan* will further elaborate on these actions.

⁶⁶ Drummond, 16-17.

⁶⁷ Government of Northwest Territories (b), 13.

⁶⁸ Natural Resources Canada (b).

⁶⁹ Aurora Research Institute, 10.

⁷⁰ International Energy Agency.

⁷¹ Northwest Territories Power Corporation.

⁷² Arctic Regional Climate Centre Network, 11, 13.

⁷³ Inuvialuit Regional Corporation (a), 101.

⁷⁴ Government of Northwest Territories (c), 1.

⁷⁵ Econometric Research Limited, 4, 28-29.

→ Rooftop solar panels installed on Paulatuk's Hamlet Office. Photo by Green Sun Rising.



Goal

Actions

Suggested Indicators

Promote increased energy security within ISR communities.

- ✓ Advance regional driven research that helps to better understand the current energy landscape.
- ✓ Continue to support the development of community-based strategies that increase energy efficiency and conservation.
- ✓ Work with ISR communities to assess energy needs and resources, while exploring renewable and, where necessary, cleaner non-renewable energy opportunities that could reduce energy costs and increase energy independence.
- ✓ Support the adoption of secure renewable and, where necessary, cleaner non-renewable energy investments, employment opportunities and capacity retention.
- ✓ Promote community coordination and collaboration by creating regional energy goals, objectives and projects that would benefit all Inuvialuit within the ISR.

- Energy consumption per building square metre as a measure of energy performance
- Percentage of ISR power generation from non-diesel sources
- ISR-specific consumer price index, including the cost of energy over time

Part IV: Supporting Plans

The implementation of the actions outlined in this document requires ongoing management to ensure success. The transformative and long-term nature of both the climate change impacts and actions described here also necessitates open communication channels between project leading teams and Inuvialuit community members who have the most at stake. This section describes two accompanying plans related to communications and program review that will support and advance the strategy implementation process.

COMMUNICATION PLAN

Effective engagement of stakeholders enabled the development of the *ISR Climate Change Strategy* since its inception. Key areas of concern related to climate change were identified through facilitated workshops with community member participants, and meetings with Inuvialuit leadership established the goals and actions found within this document. Additionally, as outlined in Table 1, ISR community tours, presentation and discussion sessions, requests for written feedback and youth outreach all provided opportunities to check-in with Inuvialuit beneficiaries as this strategy was being drafted to confirm that it was heading in the right direction.

Moving forward, remote engagement activities, including teleconferences and online comment forums, will be adopted to facilitate community-level reviews and endorsement of this now completed strategy, as well as discussions on specific actions being prepared for implementation. These engagement activities will support a more flexible approach to communications and align with GNWT social distancing

measures put in place during the COVID-19 pandemic.⁷⁶ Meanwhile, those activities that require an on-site presence, which are generally more familiar to community members, will resume once pandemic controls are lifted.

A diverse group consisting of Inuvialuit community and institutional organizations will continue to be engaged to ensure local and traditional insights on climate change issues are heard and reflected in future decisions. The following list represents a cross-section of Inuvialuit groups to be consulted (note that this list is not intended to be exhaustive):

- Community Corporations
- Elders’ Committees
- Environmental Impact Screening Committee
- Environmental Monitors
- Fish and Wildlife Co-Management Committees
- Inuvialuit Game Council
- Inuvialuit Regional Corporation and subsidiaries
- Hamlet/Town Councils
- Hunters and Trappers Committees
- Students and Youth

↓ Table 1: Engagement Before and After Strategy Development

Engagement Activity Type	Strategy Preparation Stage	Strategy Review and Implementation Stages
Community Tours	✓	✓
Facilitated Workshops	✓	✓
Presentation & Discussion	✓	✓
Requests for Written Feedback	✓	✓
Youth Outreach	✓	✓
Teleconference		✓
Remote Surveys		✓
Online Comment Forum		✓
Mailout Packages		✓

For engagement initiatives with Inuvialuit stakeholders to be meaningful for all parties involved, consideration must be given to the target audience and their availability, what the key messages are and how they will be delivered, and the process for reporting back on collected feedback. Figure 8 provides an overview of these considerations. Accordingly, communication on the contents of this document and its associated next steps will aim to remain respectful and cognizant of community needs and priorities.

⁷⁶ Government of Northwest Territories (d).



Considerations for Community Engagement

AUDIENCE



Determine the target audience for the engagement activity and tailor it accordingly. Supporting services may be required (e.g. translations).

Respect everyone's time and provide appropriate compensation for audience participation when possible.

SCHEDULE



Set the time, date and location of meetings early in advance and promote events through local community organizations to boost attendance.

Understand that the availability of community members vary throughout the seasons.

DELIVERY METHOD



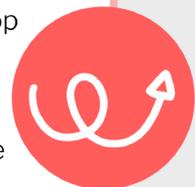
Examples include formal presentations, workshops, teleconference, mail/email, surveys, calls for feedback or submissions, interviews and small group meetings.

Recognize that access to technology may be limited in certain circumstances.

FOLLOW-UP

Update community members and other stakeholders on how their contributions were used to develop project outputs.

Linking community feedback to actionable results is a cornerstone of a successful engagement initiative.



MESSAGE

Engagement material should be directly relevant to the stakeholder, i.e. address issues experienced by the community.

Aim to integrate Western science findings with traditional knowledge.



↑ Figure 8: Considerations for Effective Community Engagement in the ISR.

Created by Brian Park, Climate Change Program Coordinator

PROGRAM REVIEW

The goals and actions embedded in this strategy effectively set the course for a comprehensive climate change program for the ISR. As the region's understanding of climate change impacts grows, it will be necessary to periodically review and update this strategy to appropriately reflect evolving regional priorities linked to the well-being of Inuvialuit communities.

IRC will take primary responsibility for maintaining the *ISR Climate Change Strategy* and the broader regional climate change program that it describes. IRC was established in 1984 to manage the settlement outlined in the IFA. It represents the collective Inuvialuit interest in dealings with governments and the world at large. IRC staff will work with its Board of Directors, consisting of six elected representatives from each ISR community as well as one chair, to formally review and recommend changes to this document on a regular basis.

The review cycle for this document will fall in step with the reporting schedule of the Intergovernmental Panel on Climate Change (IPCC). The IPCC's next assessment report

(AR6) is due for publication in 2023.⁷⁷ IPCC assessment reports are typically produced in five-year intervals. Every successive review will present an opportunity to evaluate the latest internationally accepted climate change models, calibrate Western science with Traditional Knowledge and local observations, and further clarify the path towards sustainability and resilience in the ISR.

In addition to the formal review cycle, this document may also be revised intermittently to stay aligned with complimentary strategies and plans at the local, regional, territorial, national, circumpolar and international levels. Regarding this matter, Inuvialuit beneficiaries widely recognize the importance of continued alignment with the ITK's *National Inuit Climate Change Strategy*. Future updates to this strategy may indeed be informed by the broader vision of establishing a network of Inuit communities working collaboratively to address distinct climate change opportunities and challenges.

⁷⁷ IPCC (b).

→ The pingos near Tuktoyaktuk attained national landmark status in 1984 during the signing of the IFA. Photo by Inuvialuit Regional Corporation.



Part V: Conclusion

40 **T**he Paris Agreement to limit global temperature rise this century to well below 2°C based on pre-industrial levels was a milestone victory for climate change mitigation efforts.⁷⁸

Subsequently, Canada set its GHG emissions reduction target at 30 percent below 2005 levels by 2030, and the GNWT has since adopted the same target.^{79,80}

While these mitigation targets are absolutely necessary and should be enhanced to avoid catastrophic climate change impacts, the scientific consensus is that 1°C of global temperature rise has already been reached, and a further increase of less than 0.5°C is likely over the next three decades even if GHG emissions dropped to zero today.⁸¹ This means that Inuvialuit communities face risks associated with climate change that are locked in and set to intensify over the years to come.



← Inuvialuit Day celebrations include community feasts, drum dancing and northern games. Photo by Inuvialuit Regional Corporation.

In turn, the goals and actions highlighted in the *ISR Climate Change Strategy* are primarily intended to support Inuvialuit communities in adapting to a wide range of current and foreseeable climate change impacts. The implementation of this strategy will be Inuvialuit-led and result in greater resiliency to the rapid changes being observed on the land, ice and sea.

Over the centuries, Inuvialuit have passed down an extensive body of knowledge related to travelling, harvesting and prospering on the land they call home.⁸² This invaluable knowl-

edge, together with the latest climate science, will be leveraged to realize a more sustainable future. Our communities will emerge stronger by leading the development of climate change solutions that address the unique history, culture and traditions of the ISR.

⁷⁸ United Nations (b).

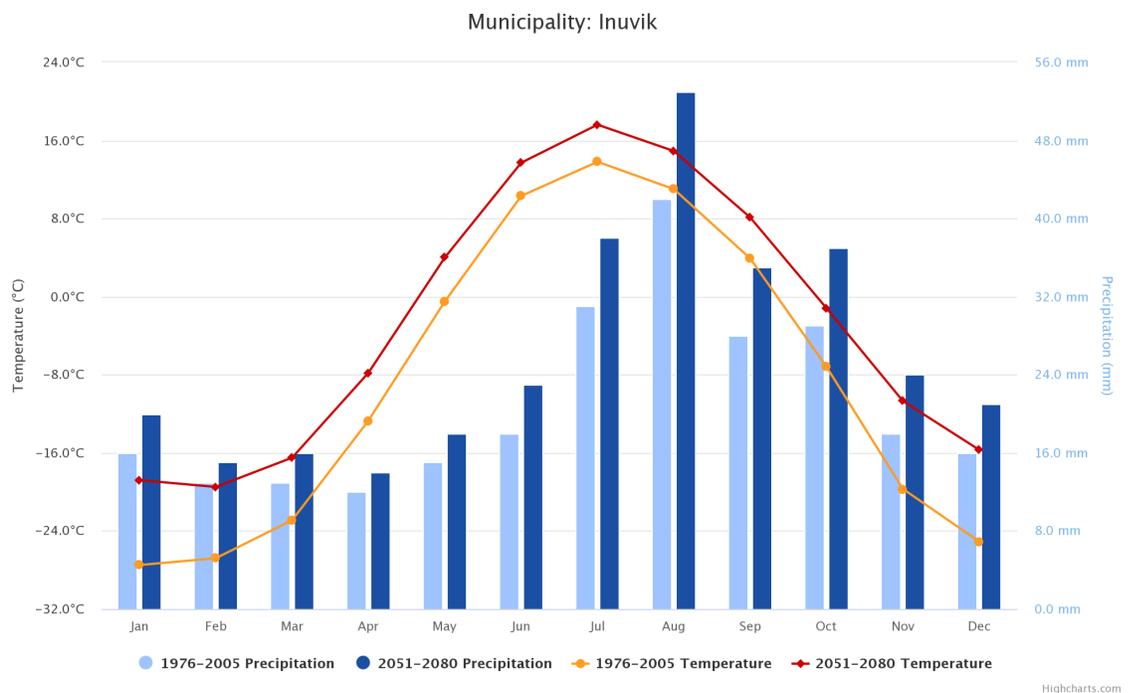
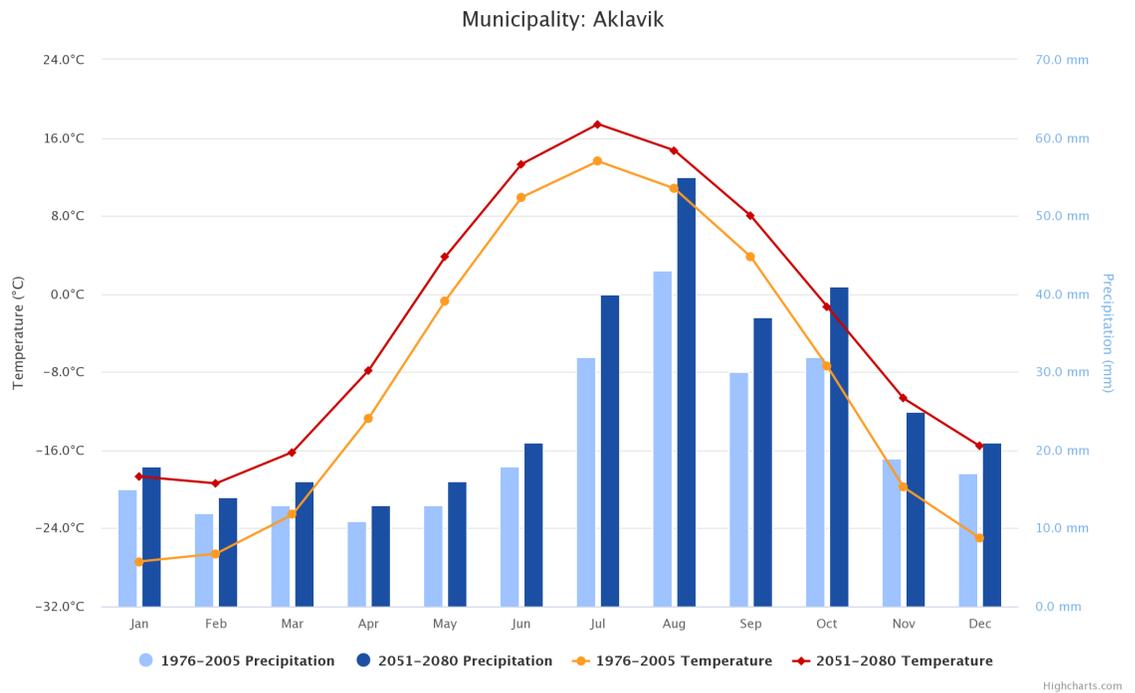
⁷⁹ Environment and Climate Change Canada (c), 8.

⁸⁰ Government of Northwest Territories (e), 29.

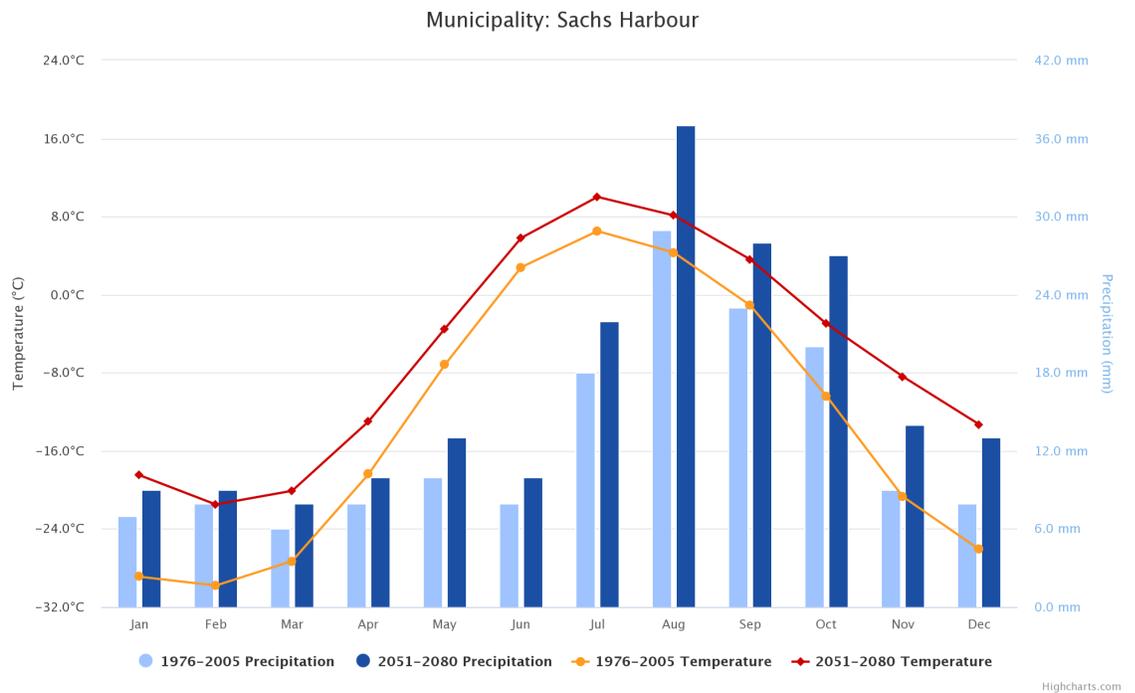
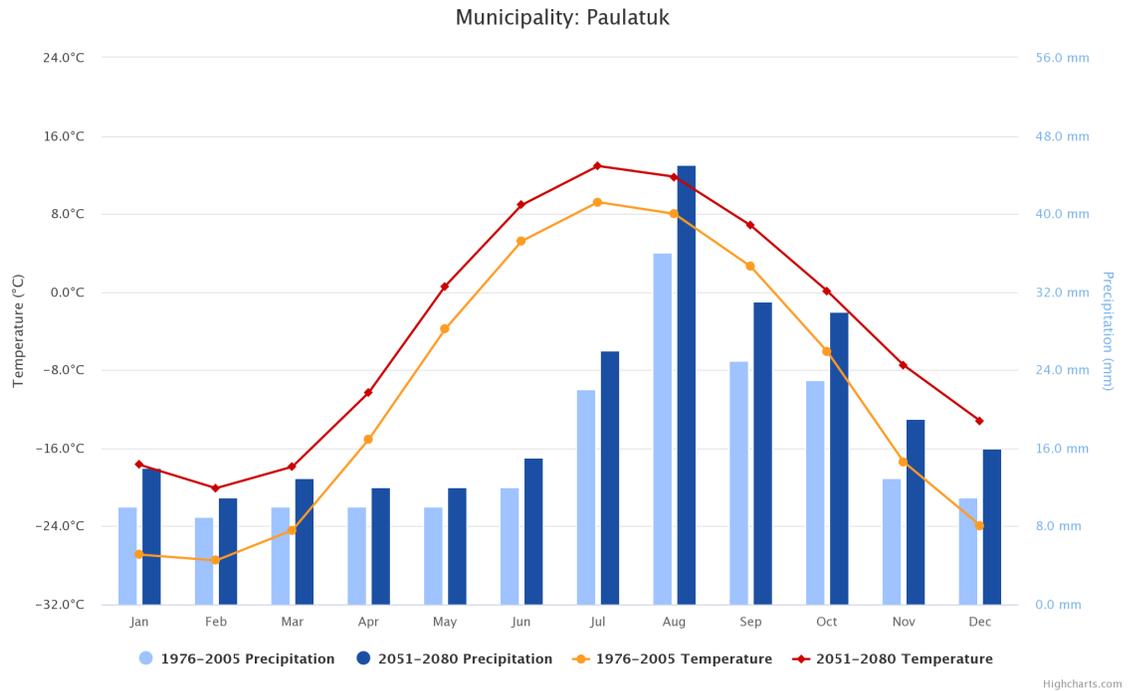
⁸¹ IPCC (a), 31.

⁸² Elliott (b), 4.

Appendix A

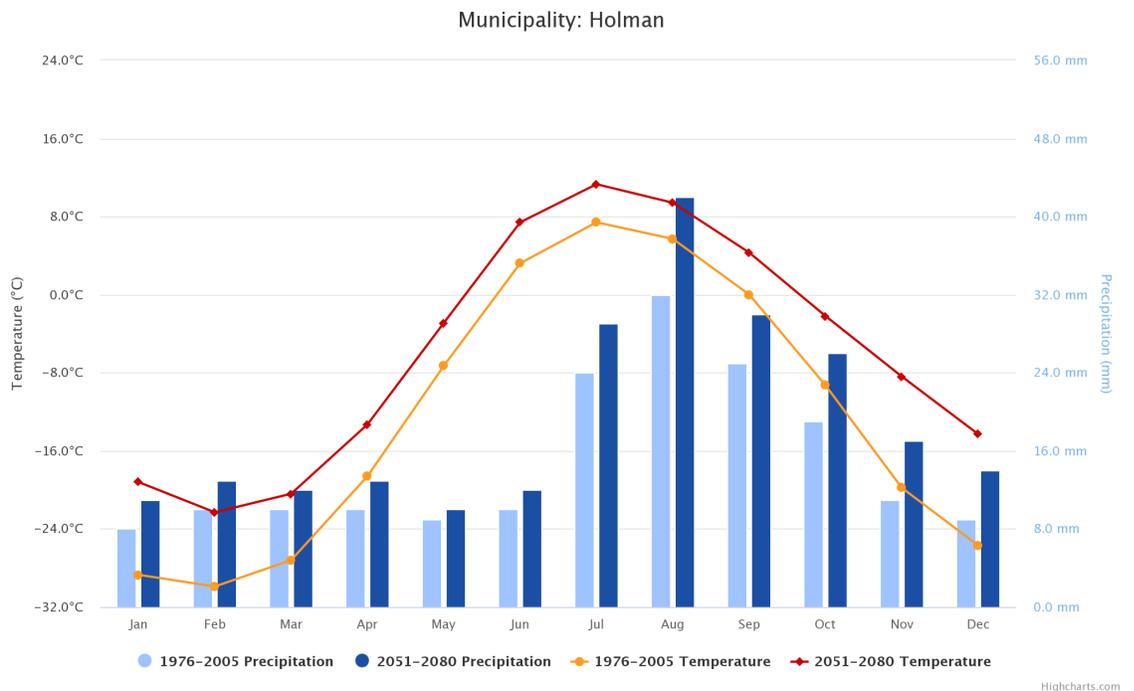
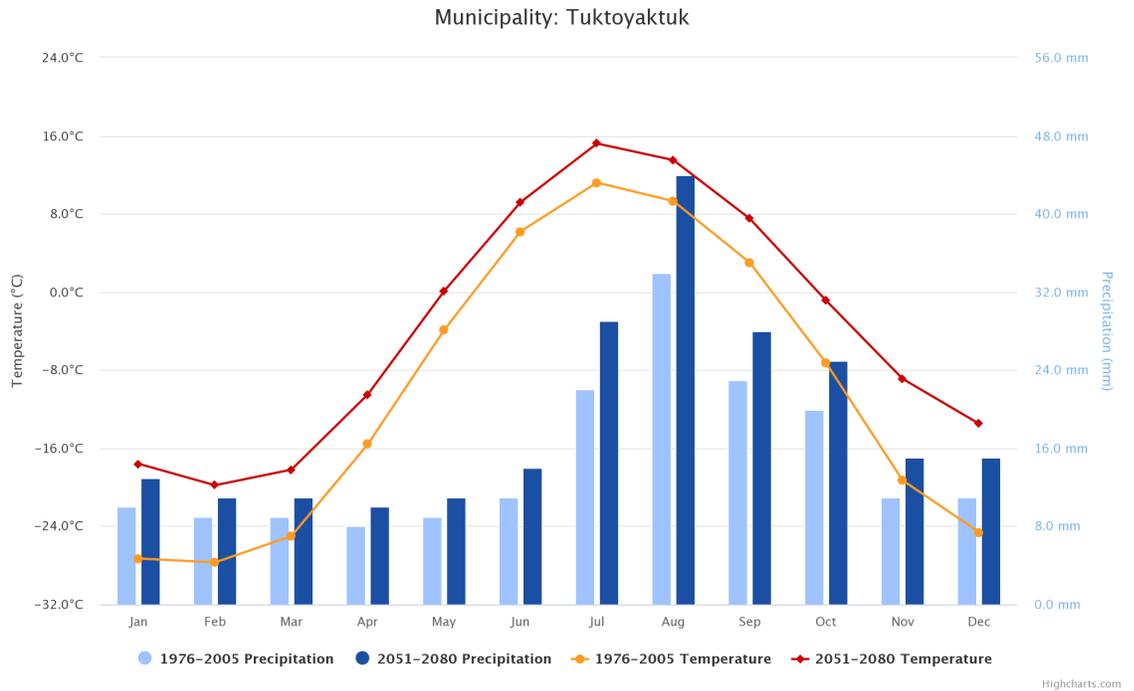


Modelled Changes in Temperature and Precipitation for ISR Communities





Modelled Changes in Temperature and Precipitation for ISR Communities



→ Holman refers to the Inuvialuit community of Ulukhaktok.

Figures downloaded from Climate Atlas of Canada. Available at <https://climateatlas.ca/find-local-data>.

Appendix B

Regional Alignment with the National Strategy

CONTEXT

The Inuit Tapiriit Kanatami's (ITK) *National Inuit Climate Change Strategy* (2019) contains five priority areas where integrated approaches and coordinated actions with partners are necessary to meet pressing climate change adaptation, mitigation and resilience building needs across Inuit Nunangat.

- The five priority areas are: Knowledge and Capacity; Health, Well-being and the Environment; Food Systems; Infrastructure; and Energy.

The *ISR Climate Change Strategy* (2020) contains six goals and related actions that can be undertaken in the Inuvialuit Settlement Region (ISR) to address climate change.

- The six goals are: Food and Wellness; Safety; Housing and Infrastructure; Education and Awareness; Ecosystem Health and Diversity; and Energy.

ALIGNMENT

IRC and the *ISR Climate Change Strategy* aligns with and supports ITK's *National Inuit Climate Change Strategy* as follows:

Category 1: Promote Inuit Knowledge Use

- 1.2.1 Foster the development of regional Inuit climate change strategies
 - IRC developed the *ISR Climate Change Strategy* in 2020.
- 1.3.1 Ensure climate information is available to all Inuit to inform evidence-based decision-making
 - ISR CC Strategy Action: Increase data accessibility by creating an ISR data platform that can be easily accessed by communities.
 - ISR CC Strategy Action: Support the development of climate change indicators (physical and biological) to convey environmental trends and to monitor progress on adaptation across the ISR.
 - ISR CC Strategy Action: Continue to

promote the integration of Inuvialuit knowledge with western science to support all future Arctic climate change policies and research.

- IRC to develop an on-line climate change map in 2020.

- 1.3.5 Promote Inuit-led and co-produced climate change research and monitoring
 - ISR CC Strategy Action: Support Inuvialuit community driven climate change research and monitoring in the ISR.
 - ISR CC Strategy Action: Expand community-based environmental monitoring programs to include all ISR communities.
 - ISR CC Strategy Action: Continue to support ISR community-based climate hazard mapping and vulnerability assessments.
 - ISR CC Strategy Action: Advocate for the long-term funding of Inuvialuit-led climate change research.
 - IRC to develop an on-line climate change map in 2020.



Regional Alignment with the National Strategy

Category 2: Support health & cultural identity

- 2.1.2 Support local Inuit-led climate health adaptation initiatives focused on ecosystem health and Inuit health and safety issues.
 - ISR CC Strategy Action: Advance the identification and preservation of historic and cultural sites within the ISR that are at risk of being negatively impacted by climate change.
 - ISR CC Strategy Action: Support the continued development of climate change terminology that promotes language revitalization in all three ISR dialects.
 - ISR CC Strategy Action: Continue to advance land-based learning and promote intergenerational knowledge sharing on climate change.
 - ISR CC Strategy Action: Continue to promote social capital that will help reduce impacts from climate-related disasters and accelerate recovery and long-term adaptation within ISR communities.
 - ISR CC Strategy Action: Celebrate cultural ties to a changing Arctic environment through workshops, skills-training and on-the-land programs.

Category 3: Strengthen Food Systems

- 3.2.1 Identify climate change induced needs and gaps in the food systems Inuit depend on, including Inuit and market food systems
 - ISR CC Strategy Action: Promote continued surveillance of traditional foods by regular monitoring of potential exposure to climate change derived contaminants, parasites and diseases.
 - ISR CC Strategy Action: Encourage Inuvialuit involvement in the creation and implementation of food security programs and policies.
 - ISR CC Strategy Action: Continue to fund and promote traditional harvesting support programs (e.g. CHAP, IHAP).
- 3.2.3 Build harvester safety supports including search and rescue and marine services infrastructure and capacity
 - ISR CC Strategy Action: Support community-based monitoring programs that increase awareness of risks associated with climate change.
 - ISR CC Strategy Action: Enhance and develop communication systems within each ISR community to support on-the-land travel safety and risk communication.
 - ISR CC Strategy Action: Advance safety programs that support survival skills and safe navigation within the ISR.
 - ISR CC Strategy Action: Increase community awareness of levels of risk tolerance and the impacts of climate change on traditional travel routes.
 - ISR CC Strategy Action: Secure and support community-based marine and search and rescue services.

Category 4: Champion transformative infrastructure change

- 4.2.1 Advocate for Inuit Nunangat-wide investments in hazard mapping and vulnerability assessment
 - ISR CC Strategy Action: Support the development of permafrost hazard mapping in the ISR.
 - ISR CC Strategy Action: Advocate for increased integration of climate resilience into policies that drive infrastructure planning, development and placement.
 - ISR CC Strategy Action: Support the continued development of community-based emergency response measures to respond to weather events that would cause serious infrastructure damage or loss of asset.

- 4.3.1 Work to eliminate the infrastructure deficit in Inuit Nunangat with climate resilient builds
 - ISR CC Strategy Action: Help build capacity within ISR communities to assess, plan and manage infrastructure and improve climate resilience.

- 4.3.2 Secure infrastructure investments that integrate an Inuit-driven climate lens
 - ISR CC Strategy Action: Encourage the use of local and Traditional Knowledge in infrastructure planning across the ISR.

Category 5: Foster cleaner energy options

- 5.2.1 Define pathways to increase Inuit ownership and governance of energy systems (energy policy, business and financing models, funding and support programs)
 - IRC to develop ISR Energy Action Plan between 2020 and 2021.
 - ISR CC Strategy Action: Continue to support the development of community-based strategies that increase energy efficiency and conservation.
 - ISR CC Strategy Action: Work with ISR communities to assess energy needs and resources, while exploring renewable and, where necessary, cleaner non-renewable energy opportunities that could reduce energy costs and increase energy independence.
 - ISR CC Strategy Action: Support the adoption of secure renewable and, where necessary, cleaner non-renewable energy investments, employment opportunities and capacity retention.
 - ISR CC Strategy Action: Promote community coordination and collaboration by creating regional energy goals, objectives and projects that would benefit all Inuvialuit within the ISR.

- 5.3.1 Support energy literacy, energy efficiency and energy conservation initiatives at the community level
 - IRC to create an Inuvialuit children's book on energy in 2020
 - IRC to develop ISR Energy Action Plan between 2020 and 2021.



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↓ A different angle of the cover photo. Children climbing a hill with their sleds near the pingos.



