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Inuit-led Economic Development

An Overview of Nunavut's Blue Conservation Economy



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Key Messages

Investing in country food economies is a cost-effective way to advance both conservation and community development.

Nunavut's country food economy is valued at more than \$200 million a year — close to five times greater than what the territorial government estimated in 2021.^{1 a} The country food economy in coastal communities around Tallurutiup Imanga National Marine Conservation Area currently generates \$33 million a year.

Inuit Guardians are key actors for advancing both conservation and economic growth.

Investments in Inuit Guardians programs are estimated to generate similar returns to those observed elsewhere in northern Canada — more than a twofold return for every dollar of investment. Guardians programs in Taloyoak and in communities around Tallurutiup Imanga are already estimated to have generated a return on investment of \$27 million.

Tourism and local artisans represent a significant, untapped investment opportunity.

Nunavut has a wealth of world-class natural landscapes and unique biodiversity that have long provided Inuit communities with sources of ecological, socio-cultural, and economic value. Investments in infrastructure and additional facilities that can reinforce respectful and community-led tourism in line with Inuit traditional values could allow certain communities to take advantage of an industry already valued at \$96 million.

Investing in country food processing facilities can generate jobs while improving access to nutritious food.

Despite the widespread availability of country food, 50% to 80% of households in Nunavut reported low access to nutritious food mainly due to low incomes, few job opportunities, and the high cost of hunting equipment. Processing facilities in Inuvik and Cambridge Bay have helped improve access to nutritious food in these communities. Investing in more processing facilities could help improve access to country food in other communities across Nunavut while also growing their local economies.

Investments in Nunavut's blue conservation economy provide a range of crucial co-benefits.

The value of investing in local conservation economies in Nunavut is underestimated due to the exclusion of community co-benefits, including:

- Aiding the transfer of Inuit knowledge, culture, and language
- Improving community cohesion and social infrastructure
- Promoting youth participation and elder engagement
- Improving physical health outcomes
- Improving mental health outcomes
- Promoting equitable gender participation in the economy

Measuring these co-benefits can be a challenge

for a community seeking to establish a clear business case for investment. A Social Return on Investment (SROI) approach can be a useful tool for overcoming these challenges to accurately value the diversity of benefits that conservation economies are generating for different local communities.

a The Government of Nunavut reported \$3.5 million from hunting, trapping, and fishing in 2021 and estimated the total country food economy to be worth \$35 million.

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Introduction

Canada's oceans are crucial for the prosperity of coastal communities; healthy marine ecosystems can provide jobs, food, and a greater sense of community.

For coastal communities in Nunavut, the stewardship of marine resources has long been inextricably linked with efforts to advance socio-cultural well-being and economic development.

As Canada moves toward protecting 25% of land and waters by 2025, and 30% by 2030 (30 by 30), investing in new marine and terrestrial protected areas is also increasingly understood as being vital for enhancing resilience to climate change and protecting biodiversity. As a result, coastal communities across Nunavut have unprecedented opportunities to challenge the prevailing "development-or-environment" narrative and build local *conservation economies* (see Box 1) that can improve socio-economic prospects and enhance community resilience.

Currently, a range of *blue conservation economies* (see Box 1) are being developed in Nunavut and across Inuit Nunangat in response to new funding commitments for marine-based conservation initiatives. Following negotiations with the Qikiqtani Inuit Association, recent investments by the Canadian federal government have catalyzed economic activities in communities linked to Tallurutiup Imanga National Marine Conservation Area (NMCA), illustrating how marine conservation can be a linchpin

for sustainable economic growth in Nunavut. Similar success stories in communities linked to Anguniaqvia niqiqyuam Marine Protected Area (MPA) in the Northwest Territories emphasize a clear business case that connects marine conservation efforts to substantial economic development opportunities in Canada's Arctic. Similar investments across Canada's territories illustrate the potential for a conservation economy approach to serve as a model for local economic development in Nunavut.

For Inuit communities in Nunavut, this approach also ensures that local economic prosperity is rooted in traditional values. A blue conservation economy approach is in line with *Inuit Qaujimaqatuqangit* — an Indigenous knowledge system and ethical framework consisting of traditional ecological knowledge and values around how to behave in an ethical manner when interacting with animals and the environment.²

Box 1

What is a conservation economy?

A conservation economy generates economic wealth for a region using its local natural resources. It does so in a way that meets the needs of the local community while conserving and restoring (not depleting) natural resources. In a blue conservation economy, the livelihood and well-being of coastal communities is closely connected to land and marine ecosystems. In Nunavut, this includes land-based activities like hunting, trapping, fishing, arts and crafts, and nature-related tourism.

Since 2018, the federal government has committed \$1.35 billion in Indigenous-led conservation efforts in Canada, signaling a growing recognition that investing in local conservation economies that reinforce existing traditional skills and knowledge networks will be essential for both reaching 30 by 30 and driving economic growth.

To realize the full potential of investing in Nunavut's blue conservation economy, there is an opportunity to learn from recent success stories and showcase the clear connection between marine conservation and local economic development. Our report builds a compelling profile of blue conservation economies across Inuit Nunangat that connect current and future area-based conservation measures with opportunities for local economic development. Our profile draws on economic and ecological data, as well as case studies of blue conservation economies in Nunavut and the Northwest Territories, to understand how these models can offer a viable alternative to accelerate an Inuit-led vision of economic development in Nunavut.

We achieve this by:

1. **Identifying the hidden costs that recent economic growth has represented for coastal communities in Nunavut** — i.e., exacerbating loss of Inuit language, culture, and vital sources of traditional knowledge, while offering few direct socio-economic benefits to those most impacted from heavy industrial activities.
2. **Advancing a roadmap for a blue conservation economy model for economic development in Nunavut.**
3. **Presenting an alternative vision for Inuit-led economic development** by analyzing three case studies across Nunavut and the Northwest Territories where Inuit-led conservation economies are prioritizing hunting, trapping, fishing and other land-based activities as drivers of community development.



Hidden Costs of Recent Economic Development

Since the creation of Nunavut in 1999, economic development and modernization have been a constant priority for the territorial government. Over the past 25 years, the regional economy has grown at an average of 8.5% a year, and since 2017 Nunavut has had the fastest growing economy in Canada.³ Substantial investments have been made to modernize key pieces of community infrastructure, including state-of-the-art health centers, administration buildings, and modern homes.

Today, natural resource extraction accounts for 36% of territorial gross domestic product (GDP), commercial hunting and fishing operations are increasingly being connected to high-value international markets (7%), and the tourism industry is creating jobs and generating significant revenues (9%).⁴ The Inuit Nunangat economy is primarily driven by public-sector industries such as public administration, health, social assistance, education, and the natural resources sectors.⁵ Since 2009, Nunavut's mining sector has grown from producing no revenues to being valued at more than \$2 billion annually.^{6,7} Stronger global prices for iron ore and gold, and the federal government's recent commitment to the Canadian Critical Minerals Strategy⁸, continue to drive a mineral boom in Nunavut. Further investments in the expansion and development of new mine sites are likely on the horizon for the territory and many regional development agencies

are seeing a clear business case for increasing investments in *extractive economic systems*^b to stimulate development in Inuit communities.

For many Inuit in Nunavut, recent economic growth patterns have not translated into greater access to benefits. The natural resources sectors pose environmental risks while other public sector industries are not adequately addressing social issues.

The disconnect between Inuit communities and recent economic growth is best illustrated by the majority of Inuit households reporting continued barriers to accessing nutritious food (69%) and consistently high unemployment (27%) — unemployment among non-Inuit in Nunavut is 3%.⁹ Insufficient access to nutritious food, a lack of culturally relevant job opportunities, and inadequate housing continue to undercut the pace of recent economic growth in the territory.

b For the purposes of this report we define extractive economic development using a variation of Kuznets (1973) theory of modern economic growth, whereby economic institutions are created and reorganized to accommodate the production and access to an increasing diversity of consumer goods to local populations. Historically, this perspective has relied on economic systems organized around the proliferation of technological advancements as the main driver of economic growth. In the Canadian context, modern economic development translates into a focus on heavy industrial-led development (today: mining, forestry, and oil and gas) as a catalyst for future, diverse local economies.

Measuring the social costs

Beginning in the 1950s, Inuit communities were relocated into larger settlements under the pretense of offering greater access to socio-economic services: education, health care and market-based employment.¹⁰ The current approach to economic growth has created a dependence on wage-labour opportunities and commercialized food distribution systems.¹¹ Under this paradigm, community needs are often replaced with the presence of a diversity of consumer goods — for example, access to many highly processed store bought foods — as a measure of successful socio-economic development even though many Inuit households indicate that accessing basic necessities is an ongoing challenge.

Measuring development in terms of jobs and economic revenues overshadows the struggle that many Inuit are facing within their own communities. Changing socio-economic conditions have provided certain benefits for Nunavut residents, including improved telecommunication networks and health services, but these changes have done little to address key development priorities identified by the territorial government in support of coastal communities:

1. Improving access to nutritious food harvested from marine ecosystems,
2. Creating local jobs that reflect community values, and
3. Building institutions that reinforce the value of Inuit language, culture, and identity.

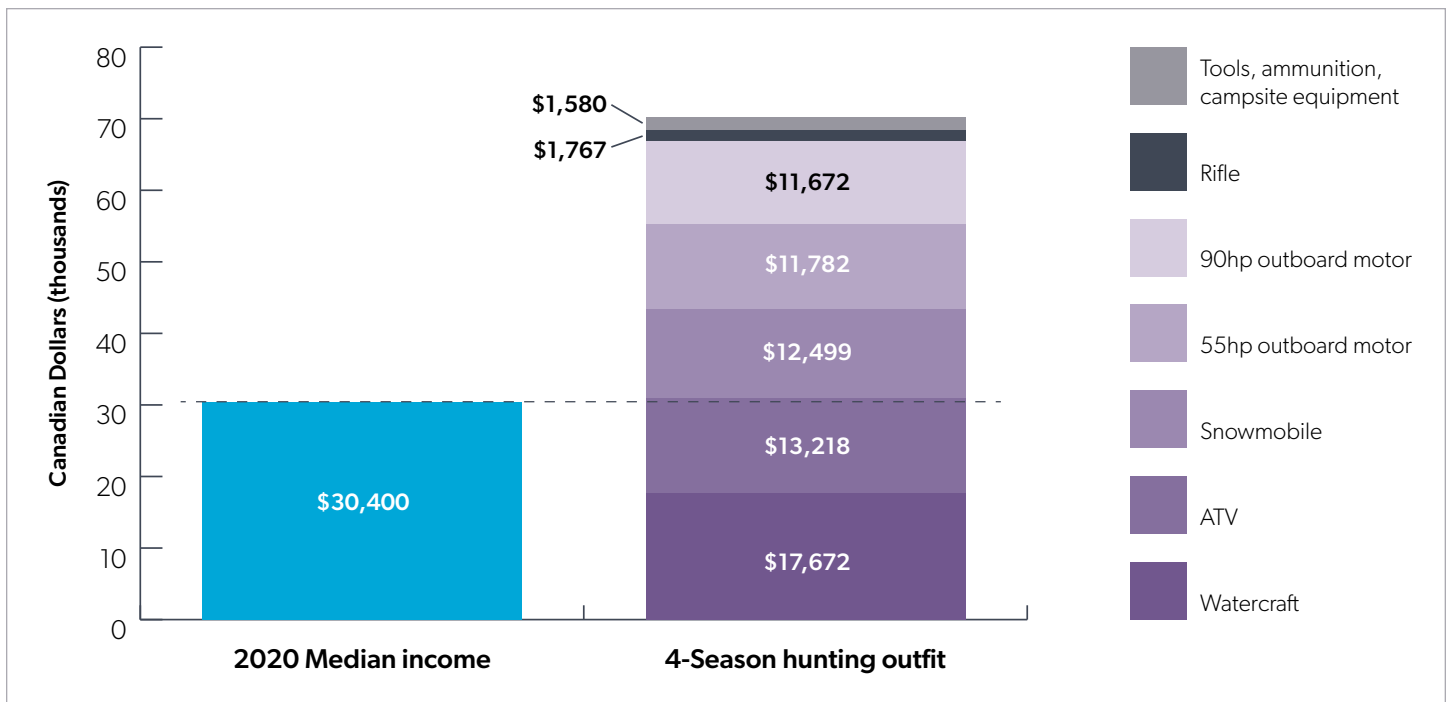
In 2017, when the territorial economy was booming, half of Inuit households reported having trouble accessing enough nutritious food.¹² The high cost of store-bought food in Nunavut is well-documented and there has been a decline in both the capacity and perceived value of local country food systems. Traditional food management systems have been eroded, causing many Inuit communities to transform from primary food producers into net consumers.¹³

Across Nunavut, consumption of country food (e.g., caribou, seal, and Arctic char) is declining, with its contribution to energy intake reducing from 23.4% in 1999 to 16.1% in 2008.¹⁴ The replacement of nutritious country food with nutrient-poor store-bought food is associated with a growing number of physical and mental health impacts.¹⁵

Low household incomes greatly reduce access to healthy nutritious food. Healthy store-bought food is unaffordable for most, with food expenditures accounting for up to 77% of single income household spending.¹⁶ Additionally, nutritious store-bought food is often perishable and reduces in quality as it is transported to northern communities leading to low nutritional value in healthy food that households are able to purchase.

Subsistence hunting has also become unaffordable for many community members. Mechanization of traditional hunting has increased the capacity of local hunters to harvest key sources of country food, but modern equipment is expensive. Capital start-up costs for seasonal hunters in Nunavut have been estimated between \$20,000-\$30,000 and an all-season hunting

Figure 1: Cost breakdown of a four-season hunting kit in Nunavut



Source: StatsCan & Action Canada Foundation

outfit can cost upwards of \$70,000, which is more than double the average annual income in Nunavut (see Figure 1). In many cases, the high cost of hunting equipment (which is transported from the south) inhibits hunters' ability to provide country food for their communities.

Low incomes and limited quality employment opportunities within the current economic system mean that many Inuit households struggle to afford healthy food and adequate housing. Despite high participation rates in many land-based economic activities among Inuit communities, including hunting, fishing, trapping, and arts and crafts¹⁷, the current economic model does not promote generation of sufficient income from these activities. Employment opportunities in extractive industries then appear very appealing, but these industries require extensive training, and their volatility exposes communities to the "boom-and-bust" pattern of mining where jobs are temporary and disappear when mining activities come to an end.

The current approach to economic development is also unable to address the loss of language, culture, and traditional knowledge (Inuit Qaujimagatqangit) being experienced in Inuit communities. Jobs in the public and natural resources sectors often do not require the use of traditional knowledge and do not offer opportunities to be exposed to Inuit culture. Participation in land-based economic activities can promote the transmission of language, culture, and traditional knowledge but there is a lack of economic incentive to engage in these activities on a regular basis.

Measuring the environmental costs

In 2013, the Arctic Biodiversity Assessment¹⁸ identified the stressors on Arctic marine ecosystems and coastal communities in Nunavut and across Inuit Nunangat. Among others, these include pressures from climate change, natural resource development, transportation, and contamination. Many of these stressors are intersecting and put Inuit communities at risk.

Climate change is already having a drastic impact on coastal communities in Nunavut; the region is warming four times faster than the global average. If global commitments to keep warming below 1.5°C are met this will still mean an average increase of 6°C.¹⁹ Impacts range from diminishing sea ice and snow coverage to melting permafrost, warming ocean temperatures, and increasing coastal erosion.²⁰

These impacts threaten the long-term well-being of Inuit communities through marine ecosystem degradation and changing species habitats and migration patterns.^c Traditional harvesting knowledge and skills may be lost as communities are forced to adapt their hunting and fishing practices to the changing environment.²¹

In recent years, changes to freeze-thaw cycles, increasingly heavy rainfall, rising sea levels, and an increasing number of ice jams have caused significant damage to existing infrastructure. In 2019, melting permafrost from climate change caused \$300,000 in damage to the local water system in Iqaluit; the cost of adaptation for individual homeowners is estimated at \$50,000 each.²² Infrastructure damages from climate change are estimated to reach \$127 million by 2050, with most of these costs being concentrated among Inuit communities in Nunavut and the Northwest Territories.²³

Natural resource development. The Canadian Arctic contains vast reserves of energy and mineral resources that are increasingly being tapped to continue fueling rapid economic growth. Nowhere is this more evident than in Nunavut where the mining sector has been the fastest growing in Canada since 2017.²⁴ Extracting these resources comes at the price of degrading the Arctic marine environments and the local conservation economies in coastal communities that rely on these ecosystems.

Extractive activities are already causing a strain on marine ecosystems across Nunavut. Mine sites are sources of land and water pollution from spills and leaks of oil and gas, wastewater from sewage and mine tailings, and other chemicals. Since 2015, there has been an average of 2 million liters of wastewater and 7 million liters of oil and gas reportedly spilled per year from mining operations in Nunavut.²⁵

The value of oil and gas exploration and drilling in the Arctic has drastically increased in recent decades. For example, spending on drilling rights in the Chukchi Sea went from \$7.1 million in 1991 to \$2.7 billion in 2007.²⁶ The pace of resource development in the region may further accelerate due to warming temperatures, the demand for minerals, and the price of global energy commodities.

A major oil spill in Arctic waters would be destructive for marine ecosystems and costly and difficult to clean up.²⁷ A recent study estimated the long-term socio-economic cost of an oil spill in marine areas around Rankin Inlet to be upwards of \$9.4 billion.²⁸ The liability cap in Canada currently sits at \$1.5 billion, which means that the company responsible for an oil spill would only be required to contribute \$1.5 billion towards cleanup, leaving the remaining damages and long-term costs of an oil spill (estimated at upwards of \$7.9 billion) with the government and affected coastal communities of Nunavut.²⁹ This risk must be factored into development decision-making.

Natural resource extraction has thus far been limited in its ability to address community needs but involves significant environmental risks. Employment opportunities and payments in the form of royalties continue to be insufficient to support Inuit communities, while environmental degradation damages the ecosystems that communities rely on for country food, livelihoods,

c Shrinking sea ice coverage has been shown to alter the ecologically vital springtime phytoplankton bloom, which acts as a keystone biophysical process supporting many different marine species.

and culture. In addition to chronic pollution from mine sites, a major oil spill in the Arctic would be catastrophic and presents a significant financial risk for the territory.

International shipping and trade. With more than 90% of global goods traded through intercontinental shipping, receding ice coverage in Nunavut increases the prospect of trans-Arctic shipping routes. The Northwest Passage is identified as a potential global shipping hub. The route cuts through the middle of Nunavut's territorial waters and would shorten transcontinental shipping routes between Europe and Asia by approximately 6,500 km. With this area projected to be ice-free by 2050, fuel savings alone would create an active business case for increasing shipping through the Canadian Arctic.

Currently, most trans-Arctic shipping occurs after the seasonal migration of marine mammals, reducing the incidence of ship-strikes and excessive noise disrupting reproductive periods of these species. However, an increase in the duration of the shipping season, shifting migratory patterns of marine species due to ecological change, and the now widespread use of motorized transportation among Arctic communities increases the likelihood of more ship traffic affecting marine animals. A recent report links changes in regional narwhal populations around Baffin Island to the increase in regional shipping traffic from the Mary River iron ore mine project; the most affected areas experienced a narwhal population decline of up to 50% (Inglefield Bredning and Melville Bay).³⁰

Increased shipping traffic has been observed throughout the Arctic, increasing animal disturbances and risks of accidents and oil spills. In 2019, 29 liquified natural gas tankers transited Arctic waters.³¹ This stands in stark contrast to no tankers present in the region only three years earlier. A large oil spill from an international tanker would be catastrophic for Arctic marine ecosystems and local communities.

Pollution and contaminants. Environmental contaminants have been bio-accumulating in Arctic ecosystems due to long-range transport from North America and Eurasia.³² The Stockholm Convention on Persistent Organic Pollutants (POPs) has reduced these contaminants, but levels of mercury, heavy metals, and other novel chemicals continue to increase. Chemical spills from mine sites, such as mine tailings, can exacerbate this problem, with species in areas near mine tailings experiencing reduced populations.³³ Enhanced research and monitoring activities are identified as key prevention measures, as well as efforts to control these substances through bans and limitations.



Advancing a Blue Conservation Economy in Nunavut: A Roadmap for Success

The well-being of Inuit across Nunavut is inextricably linked to the long-term health of Arctic marine ecosystems. These ecosystems represent a vital source of nutritious food and materials, and cultural keystone species^d are embodied in Inuit arts, culture, and spiritual traditions. This link is often overlooked when considering pathways to drive economic growth for Inuit communities in Nunavut, yet there is clear economic value being generated by local conservation economies in coastal communities across the territory. A recent study estimates the replacement value (see Box 2) of hunting, trapping, and fishing in Nunavut's country food economy at nearly \$200 million a year — a value close to five times greater than what the territorial government estimated in 2021.^{34 e}

Maintaining the link between Inuit well-being and marine ecosystem health can be achieved through a conservation-based economy in which income is generated from activities that protect and repair rather than deplete natural resources.³⁵ This economic approach involves encouraging low-impact activities that bring lasting benefits to quality of life and the environment. To promote this type of development, land-based activities such

as hunting, fishing, trapping, gathering wild plants, making clothing or footwear, and making carvings, drawings, jewelry, and other artwork, need to be supported.

Box 2

What is the replacement value of country food in Nunavut?

The replacement value of country food harvested in Nunavut can be estimated based on the price of store-bought food of equivalent nutritional content. This valuation does not account for the cultural value of country food. Warltier et al. (2021) estimated that the average country food replacement value in Nunavut is \$39.76/kg (over \$45/kg in 2023 dollars) while the amount harvested across the territory is about 5 million kg a year. This puts the value of Nunavut's country food economy at nearly \$200 million a year.

^d As defined by IPBES, cultural keystone species are those that have a significant impact on the cultural identity of a people based on the fundamental roles these species have for diet, materials, medicine or spiritual practices.

^e The Government of Nunavut reported \$3.5 million from hunting, trapping, and fishing in 2021 and estimated the total country food economy to be worth \$35 million.

In Nunavut, local conservation economies in coastal communities can create new jobs while protecting marine ecosystems for the benefit of future generations. This is what we call Nunavut's blue conservation economy, where the health of marine areas and traditional hunting lands are both intertwined with the growth and well-being of coastal communities.

For Inuit communities in Nunavut, this approach also ensures that local economic prosperity is rooted in traditional values. **A blue conservation economy approach is in line with Inuit Qaujimajatuqangit.** Today, despite a lack of sufficient income generation from land-based activities, Inuit have high participation rates in such activities that align with Inuit Qaujimajatuqangit, including hunting, fishing, and trapping (65%), gathering wild plants (48%), making clothing and footwear (35%), and creating Inuit art (15%) such as carvings, drawings, and jewelry.³⁶ Further investment in these skills represents an immediate opportunity to grow many local economies when compared to both the investment and time needed for training to participate in other economic sectors.

Investments in the protection and conservation of marine ecosystems can serve as a catalyst for economic growth and development for Inuit communities in Nunavut, but making the business case to attract investors requires a clear understanding of what these values are and how they contribute to the well-being of Inuit households.

This section provides an overview of opportunities and challenges in connecting local economic development with area-based conservation efforts in Nunavut. This includes discussion of the economic and cultural value of keystone species, the role of conservation as a driver of economic growth and the diversity of co-benefits generated by a conservation economy approach. It also includes discussion of key gaps that would need to be addressed to advance the various conservation-based economic sectors in Nunavut.

Overview of cultural keystone species

The following provides an overview of select cultural keystone species in terms of their ecological, social-cultural, and economic values and how they can relate to priorities for local economic development in Nunavut. See Appendix 1 for additional species and how they link to conservation economies across Nunavut.

Whales (*qilalugaq*) help regulate and maintain Arctic marine ecosystems. For Inuit in Nunavut, whale harvesting is a culturally important and sustainably managed activity for many local economies in the territory and is a valued source of nutritious country food. Other materials from whales, such as teeth and narwhal tusks, are also valuable for carving or selling as a whole to southern markets. Approximately 600 narwhals³⁷, 400 beluga³⁸, and up to three bowhead whales³⁹ are harvested by Inuit annually in Nunavut, representing an economic value of more than \$5 million a year.⁴⁰

Arctic seals (*ugjuk*) are a keystone species for Inuit culture and Arctic marine ecosystems. They are the primary diet of polar bears and they form an important part of the Inuit diet and culture. Seal hunting is part of Inuit culture as a source of food and valuable pelts. An estimated 40,000 seals are harvested annually in Nunavut, with a replacement value of \$5 million for the meat and an additional \$1 million for sealskin products.⁴¹ Anti-sealing sentiment and legislation, such as the 2009 ban of seal products in the European Union, has had a negative impact on the market for seal products and income for Inuit communities.

Polar bears (*nanuq*) are an iconic Arctic species for their contributions to Arctic conservation efforts and their socio-cultural and economic importance for Inuit communities. The life of polar bears best represents the connection between land and sea that form the basis of Arctic marine ecosystems. They hunt seals, mate, and rear pups on sea ice; and are also known to swim long distances and engage in "aquatic stalking" of prey.⁴²

Nunavut has the largest population of polar bears in Canada and hunting by Inuit is permitted according to a government established quota system — approximately 400 are harvested annually. Each Nunavut community receives a hunting quota, which can be used for subsistence, the fur trade, sport hunting, or self-defense. The value of polar bear hunting for Inuit is estimated at \$4.4 million a year for food and pelts. Trophy hunting is estimated to generate an additional \$700,000 a year.^f

Muskox (*umingmak*) populations have recently recovered in Nunavut and are again abundant year-round in the territory. Inuit harvest muskox as a source of country food, pelts, horns, and *qiviut*, a valuable down that can be spun into a yarn for clothing. The suggested harvest rate for Nunavut in 2022 was 440, or 7% of the total population.⁴³ Each animal produces about 100 lbs of meat and 4-7 lbs of raw *qiviut*.⁴⁴ Nunavut *qiviut* yarn is sold for more than \$150/oz and hides have been sold at \$150 each.^{45 46} This harvest could be worth between \$5 to \$8 million a year in country food and materials if the animals are harvested and fully utilized.

f Estimate is based on a single trophy hunt generating \$30,000 for a local Inuit guide.

Conservation as a driver of economic development

The following provides an overview of Nunavut's conservation economy and outlines gaps that need to be addressed in each sector to drive economic development through conservation.

Country food harvesting

Country food (for example caribou, muskox, seal, and Arctic char) is an essential part of Inuit diet that relies on the protection of areas that animals inhabit, traverse, and migrate through. Nunavut's country food system harvests about five million kg of meat a year, or 135 kg per Nunavut resident, valued at \$200 million a year.⁴⁷ Despite the widespread availability of country food in the region, 50% to 80% of households in Nunavut reported low access to nutritious food, which is ten times higher than the Canadian average.⁴⁸ To promote greater access to country food, facilities have been established to process and package harvested meat in Inuvik and Cambridge Bay.^{49 50} More facilities like these could help improve access to country food across the territory.

Certain barriers to participation in harvesting will need to be addressed, such as lack of money for equipment and supplies and government policies regarding hunting, harvesting, and exporting country food. To scale country food operations into a source of both reliable income and access to nutritious food for coastal communities in Nunavut, investments in processing facilities and the capacity of local hunters are needed. These investments are crucial to ensuring the stability of the local supply, while also ensuring that country food sources are being harvested using traditional skills and knowledge to reduce the risk of producing unnecessary waste. Investing in a territorial network of cut-and-wrap facilities to prepare, process, distribute, and sell country food can tackle one of the territory's long-standing development challenges: improving access to nutritious foods. The success of this approach will hinge on the capacity of any new facilities to meet food safety laws set by the *Nunavut Public Health Act*. Facilities seeking to tap into the lucrative southern or international markets will require additional licenses that meet the threshold of the Canadian Food Inspection Agency.

Inuit Guardians and traditional knowledge networks

Inuit Elders, hunters, and other community members hold critical knowledge on topics such as country food harvesting and preparation, wilderness survival, and environmental monitoring. These Inuit knowledge systems represent existing skills and sources of training for those that are interested in land-based economic activities. However, there is a lack of structured programs through which interested community members can gain training and education from more experienced community members.

Guardians programs draw on local knowledge and experience to enhance community stewardship of key land and water resources in Nunavut. They engage in research and monitoring activities to assess the health of animal populations and record instances of encroachment from mineral exploration, commercial fishing and shipping, and un-guided tourism. They also create jobs for local hunters and improve local food security through harvesting. Based on the SROI (see Box 3) observed in the Thaidene Nënë Guardians program in the Northwest Territories, for every \$1 invested in Guardians programs an estimated return of \$2.50 can be generated in terms of community co-benefits.⁵¹ However, Guardians programs suffer from gaps in funding and resources (such as equipment and space to service equipment) that are needed to expand these programs and their benefits.

Box 3

What is a Social Return on Investment?

Social Return on Investment (SROI) integrates social, environmental, and economic returns to understand the wider socio-economic impact of specific investments — also known as the triple bottom line.

SROIs compare the net present value of project benefits with the net present costs to then calculate any project co-benefits by assigning an economic value to environmental and social outcomes. These values are established with financial proxies and then combined with the value of observed economic benefits to provide more clarity on the full scope of investment returns, for example, the value of reinforcing Inuit language and culture in addition to the creation of job opportunities.

SROIs differ from other methods to determine potential investment returns in that they actively integrate stakeholder perspectives as a way to prioritize specific types of co-benefits in determining their monetary value for different local communities.

Triple Bottom Line

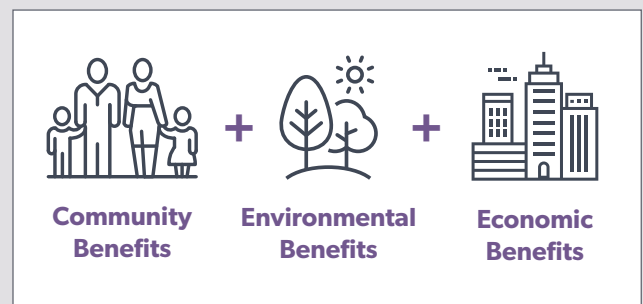






Table 1: Current economic impact, community benefits, and needs for further investment of conservation-based economic sectors in Nunavut

Conservation-based activity	Economic impact	Community benefits	Investment needs	Contribution to conservation economy*
Country food harvesting	\$200 million per year generated by Nunavut's country food system	<ul style="list-style-type: none"> • New hunting, processing, and administrative job opportunities • Better access to nutritious food and reduced reliance on food subsidies • Positive impact on food sovereignty and community self-determination 	<ul style="list-style-type: none"> • More processing facilities to prepare and distribute country food • Improving capacities of local hunters through equipment and supplies • Adjusting government policies to promote hunting, harvesting, and exporting of country food 	
Inuit Guardians	\$29 million generated by Inuit Guardians in Aviqtuuq, Tallurutiup Imanga, and Anguniaqvia niqiqyuam	<ul style="list-style-type: none"> • Creating jobs for local hunters • Enhancing community stewardship of key land water resources • Improving local food security through harvesting • Role models for youth to engage in hunting and stewardship of traditional land • Facilitating transmission of traditional knowledge from Elders to youth 	<ul style="list-style-type: none"> • Creating programs for community members to gain training and education from more experienced individuals • Equipment such as snowmobiles, ATVs, and other tools needed for environmental monitoring • Indoor space such as garages to service equipment and hunting and fishing cabins to support stewardship activities • Training and tools to improve ecological data collection capacity 	
Tourism and recreation	\$96 million generated from Nunavut visitors travelling for holiday, leisure, or recreation (2018)	<ul style="list-style-type: none"> • Creating local job opportunities and diversifying the local economy • Reinforcing Inuit language and culture • Encouraging greater youth engagement 	<ul style="list-style-type: none"> • More training and certification programs (e.g., big game guide certification, wilderness first aid, cruise preparedness workshops) • Greater coordination with local Inuit communities looking to participate in regional tourism • More infrastructure and additional facilities (e.g., small marine vessel docks, hunting and fishing cabins, and tourism centres) 	
Art, textiles, and clothing	\$37 million generated from Inuit art for communities across Nunavut (2015)	<ul style="list-style-type: none"> • Reduced waste from harvesting • Reinforcing traditional knowledge, language, and culture • Improving social welfare and building community resilience 	<ul style="list-style-type: none"> • Establishing more markets for the sale of processed hides and items made from by-products of country food harvesting • Developing additional infrastructure (e.g., tanning facilities) to process hides, pelts, and other by-products of harvesting 	
Research and monitoring	n/a	<ul style="list-style-type: none"> • Training and employment opportunities • Building knowledge on the health and productivity of key ecosystems • Supporting land management decisions and economic development opportunities 	<ul style="list-style-type: none"> • Providing tools required for data collection, analysis, and sharing • Conducting multi-year fish stock and marine mammal assessments to support resource management • Improving geoscience database to support land management decisions 	
Integrated marine spatial planning	Supports Nunavut's off-shore fishing industry which contributes \$112 million to territorial GDP (2019)	<ul style="list-style-type: none"> • Accounting for the full value of healthy marine areas for activities like country food harvesting, Guardians, tourism, and research • Taking actions to conserve, protect, and restore marine ecosystems, including wild fish stocks 	<ul style="list-style-type: none"> • More involvement of Inuit communities in environmental monitoring, governance, and management of resources • Capacity development in conducting scientific research and data collection 	

***Legend**

-  Very high impact on conservation economy with numerous community benefits.
-  High impact on conservation economy with numerous community benefits.
-  Moderate impact on conservation economy with some community benefits.
-  Indirect impact on conservation economy with some community benefits.

Tourism and recreation

Nunavut has a growing tourism industry that relies on the unique natural landscape and wildlife in the region. In 2018, Nunavut welcomed 23,701 visitors⁹ that traveled for holiday, leisure, or recreation, generating \$96 million in annual revenues.^{52 53} Tourists visiting Nunavut engage in marine tourism (visiting on cruise ships and pleasure crafts such as yachts and kayaks), wildlife tourism (including wildlife viewing, sport hunting, and fishing trips), and cultural tourism (engaging in Inuit traditional activities like carving, dog sledding, and drum dancing). Gaps to address in Nunavut's tourism sector include lack of coordination with local Inuit communities looking to participate in regional tourism, absence of site guidelines, and limited availability of codes of conduct for visitor behaviour.⁵⁴

Training has long been a recognized need for the tourism sector in Nunavut. It is part of the Government of Nunavut's mandate to provide training needed for careers in the tourism industry, but the number of training courses offered remains limited. Without offering such training and certification programs, opportunities to develop tourism in Nunavut will remain unrealized. Investments need to be made to conduct on-the-ground training programs for community members, including professional big game guide certification, wilderness first aid, small vessel operator proficiency training, and cruise-ready community preparedness workshops. This investment will provide opportunities for Guardians, guides, and other Inuit community members to realize the full potential of Nunavut's burgeoning tourism industry.

Art, textiles, and clothing

In Inuit traditions, harvested animals not only provide nutritious food but their hides are a source of clothing, footwear, and building materials, while other parts of the animal like bones and antlers are used to make carvings, jewelry, and other kinds of artwork. Inuit art is also made from other elements of natural areas such as soapstone. In 2015, Inuit art generated \$37 million for communities across Nunavut.⁵⁵ There are limited ways to earn income from traditional arts and crafts as there are few processing facilities (e.g., tanneries) and established markets for the sale of processed hides and items made from by-products of country food harvesting. However, certain markets do exist and can be grown with investment, such as that for qiviut in the Hamlet of Kugluktuk where hunters are provided \$150 per muskox hide.⁵⁶

Research and monitoring

Research activities in Nunavut provide training and employment opportunities while building knowledge on the health and productivity of key ecosystems and how they respond to climate change. For example, the research vessel *Nuliajuk* gathers significant information on Arctic marine life and supports sustainable development of Nunavut's fisheries.⁵⁷ Communities and initiatives adjacent to research activities (e.g., Guardians programs) benefit from the data collected and are able to provide input from traditional knowledge. To advance Inuit-led research and monitoring programs in Nunavut, investments need to be made in the training and tools required for data collection, analysis, and sharing.

Investing in data-gathering capacity is a critical step for developing Nunavut's conservation economy. More funding is needed for multi-year, fish stock and marine mammal assessments to support management of resources in Nunavut. An improved geoscience database is also needed to better support land use management decisions and economic development opportunities.

Integrated marine spatial planning

The growth of Nunavut's blue conservation economy depends on healthy oceans. This involves using marine spatial planning to inform decision-making on industries that operate around protected areas, accounting for the full value of ocean resources, and taking actions to conserve, protect, and restore marine ecosystems, including wild fish stocks and other marine resources. The research vessel *Nuliajuk* uses test fishing and bottom mapping to identify potential commercial fishing stocks and deeper, wider shipping routes that minimize impact on marine ecosystems.⁵⁸ This work supports Nunavut's offshore fishery industry, which contributed \$112 million to the territory's GDP and created nearly 1,000 full-time jobs in 2019.⁵⁹ It also informs Nunavut's marine tourism industry, which has experienced a 70% increase in cruise tourism and 400% increase in pleasure craft (e.g., yacht) tourism between 2009 and 2019, by providing information on routes that minimize impact on marine life.⁶⁰ More investment is needed in science and data collection and there needs to be more involvement of Inuit communities in environmental monitoring, governance, and management of resources.

g Of these, 12,698 (53.6%) were Nunavummiut, spending \$2800 per visit on average (including transportation costs); 5,902 (24.9%) were Canadian residents from other provinces and territories, spending \$5,000 per visit on average; and 5,101 (21.5%) were visitors from abroad, spending \$6,700 (excl. airfare) per visit.

Co-benefits of pursuing a blue conservation model for economic development

The total value of, and potential returns from, investing in local conservation economies across Nunavut are significantly underestimated when considering the additional community co-benefits generated by these activities. For Inuit communities in Nunavut, pursuing conservation-based economic development offers the following co-benefits:

Facilitating the transmission of Inuit knowledge, culture, and language. Traditional knowledge, culture, and language are under threat in Inuit communities across Nunavut and communities are losing Elders without their knowledge being passed on to younger generations. Conservation-based economies can promote traditional knowledge transmission around how to harvest animals for food, clothing, and other items and how to prepare country food for consumption. Additionally, as younger generations learn from more experienced community members how to subsist off the land, they can also be more exposed to the Inuktitut language and learn about the knowledge system inherent to the language.

Improving community cohesion and social infrastructure. Engaging in traditional land-based activities builds self-esteem and is associated with high levels of social support and stronger relationships between individuals, their families, communities, and the land.⁶¹ Conservation-based economic development would provide the funds to create spaces where young people can spend time with each other, interact with Elders, and learn traditional skills like preparing country food and making clothing from the hides of harvested animals.

Promoting youth participation and Elder engagement. Nunavut's Inuit population has an average age of 27.7 years, significantly younger than the non-Indigenous population (40.9 years).⁶² Younger generations in Nunavut are spending less time engaged in subsistence activities, poorly equipping them to participate in country food harvesting and preparation. Conservation-based economies would create an environment for youth to engage with Inuit culture while earning an income. Similarly, Inuit Elders get few opportunities to spend time on their traditional lands, but with a thriving conservation-based economy, they are afforded more opportunities to engage with their territory.

Improving physical health outcomes. Hunting, fishing, and traditional food sharing programs have long supported good dietary and physical health among Inuit, reducing the socio-economic costs of non-communicable diseases. Due to restricted access to country food and the high cost of nutrient-dense foods from commercial distribution networks (e.g., fresh meat, fruit, and vegetables), Inuit communities in Nunavut are undergoing a dietary transition towards nutrient-poor store-bought foods. This ongoing dietary transition is paralleled by rising obesity and other non-communicable diseases (e.g., cardiovascular disease, high cholesterol, high blood pressure, and type 2 diabetes).⁶³ Enabling greater access to country food through more hunting, fishing, and trapping may be able to help reverse the recent dietary shift and reduce the burden of diet-related diseases in Nunavut.

Improving mental health outcomes. Harvesting, processing, sharing, and consuming country food improves mental health and social cohesion. These activities facilitate a strong relationship with the land leading to better mental health and a reduced risk of suicide in Inuit communities.⁶⁴ Participating in hunting activities is shown to provide strong protection against suicide attempts among young Inuit women.⁶⁵ Engaging in these traditional activities builds self-esteem and is associated with high levels of social support and stronger relationships between individuals, their families, communities, and the land.⁶⁶

Promoting equitable gender participation in the economy. Inuit women are six times more likely than Inuit men to hold occupations in the largest sectors of Nunavut's economy such as education, law, and social and government services. However, Inuit women and men are almost equally likely to participate in land-based economies (87% women and 82% men engaged in at least one land-based activity in 2016). Among these participants, men are more likely to hunt, fish, and trap, while women are more likely to gather wild plants and make clothing and footwear.⁶⁷



Case Study Analysis

This section highlights the socio-economic, cultural, and environmental benefits of conservation economies by using models established in three communities. Each case study points to major economic, ecological, and socio-cultural value streams, as well as the relationships between these value streams and the community’s socio-economic growth.

Aviqtuuq Inuit Protected and Conserved Area

The Taloyoak Umarulirijigut Association’s (formerly the Spence Bay Hunters and Trappers Association) proposed Aviqtuuq Inuit Protected and Conserved Area (see Figure 2) is based on the recognition that the well-being of the land and people are interconnected, and protecting wildlife habitat is key to increasing investments in the local conservation economy. The protected area would consist of 90,182 km² of land and water resources, including 40,730 km² of ocean, 45,039 km² of land, and 4,413 km² of freshwater.

Hunting, trapping, and fishing are central to life in Taloyoak. Aviqtuuq forms the geographic hub for the local conservation economy that supports the socio-economic well-being of residents. The health of local ecosystems sustains local efforts for stimulating community development. At the same time, broader economic forces are already threatening key species habitats and the livelihoods of many residents, in addition to limiting many community members from being able to fully participate in land-based activities.

Figure 2: Proposed Aviqtuuq Inuit Protected and Conserved Area



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Investing in the establishment of the Aviqtuuq Inuit Protected and Conserved Area is an investment in the future growth of the community in Taloyoak. These investments are anticipated to create a number of culturally relevant jobs, enhance access to nutritious food, improve engagement among youth and Elders, and reconnect community members to traditional sources of skills and knowledge.

Investing in Aviqtuuq as the geographic hub of the local conservation economy will also result in a significant contribution to national biodiversity targets by immediately increasing the amount of land and water protected in Canada by 3.9% and 7.7%, respectively.

The following sections provide an inventory of current and future opportunities being generated by the conservation economy in Taloyoak. For each opportunity, we identify a diversity of economic outcomes and potential co-benefits, as well as areas where future investments are needed to accelerate local development.

Aviqtuuq Guardians provide \$12 million in community co-benefits.

These include direct socio-economic benefits, such as increased access to nutritious food, more job opportunities, and leveraging additional investments, as well as key co-benefits, such as more role models in the community, reinforcing the value of traditional skills and knowledge, and increasing the local capacity for self-determination. In capturing the value of these benefits, a standard cost-benefit approach can partially capture direct socio-economic benefits but would be unable to compensate for the identification of local community priorities and how they are attached to potential co-benefits, such as reinforcing Inuit language and culture through local country food knowledge networks.

To capture the full value of benefits and co-benefits being generated by investments in Inuit Guardians programs, an SROI (see Box 3 above) approach can be applied. Using an SROI rate observed for the Thaidene Nëné Guardians program in the Northwest Territories — a return of \$2.50 for every \$1 invested⁶⁸ — we estimate that initial investments of \$4.8 million (from the Department of Fisheries and Oceans and other sources) in the Aviqtuuq Guardians program are generating co-benefits of up to \$12 million including:

- **Increasing youth engagement.** Young people in Taloyoak are being inspired by their local Guardians and are expressing a renewed interest in hunting, working for the Taloyoak Umarulijigut Association, and taking part in the Guardians program.

- **Facilitating the transmission of local traditional knowledge.** Local Guardians are emerging as key facilitators for the transfer of knowledge from Elders to youth, such as how to survive on the land and knowing Inuktitut names for hunting tools and animals.
- **Improving community health.** The Guardians promote community health by hunting and sharing nutritious country food with the wider community, and by supporting the health of Elders by providing more opportunities to be on the land — a key part of Inuit life that many Elders are increasingly rarely afforded.

The value of the country food economy in Aviqtuuq is estimated at \$6.6 million a year.

The three most harvested species are caribou, ringed seal, and Arctic char, while muskox is also a commonly harvested species. In Taloyoak, the protein replacement cost of sourcing country food from commercial distributors is \$198.70 kg⁻¹ and the community harvests approximately 33,374 kg of country food protein annually, about 35 kg per resident.⁶⁹ Therefore, the country food harvested in Taloyoak has an estimated value of \$6.6 million a year — \$5 million in market value plus an additional \$1.6 million in avoided government subsidies.^h

The community in Taloyoak is looking to establish the *Niqihaqut* (“our food”) country food processing facility to create better access to nutritious food, while also improving nutritional health, creating jobs, and providing opportunities for training and cultural engagement.

Capital expenditures to set up the *Niqihaqut* cut-and-wrap facility are being partially funded by a \$451,000 Arctic Inspiration Prize awarded to the community in 2021.⁷⁰ Considering Taloyoak’s population of 934, and an estimated annual demand of 135 kg of country food per Nunavut resident, the *Niqihaqut* facility would need to process 27kg of country food a day to meet similar levels of demand.^{71 72} With an anticipated total annual production capacity of 9,855kg (<10% of community demand) the replacement value is estimated at \$1.9 million in annual revenues for the facility.^{73 i}

Local tourism can be revitalized post-COVID-19 through existing infrastructure.

In 2020, the Boothia Inn and restaurant employed ten people in Taloyoak, representing an estimated community benefit of more than \$300,000, given the median local income.⁷⁴ Pre-pandemic, the Inn hosted business travelers, seasonal construction workers, and a small number of tourists. The Inn has eight rooms and a fully equipped kitchen but needs investments to update facilities to establish Taloyoak as a tourism destination for wildlife viewing and sports hunting.

h The cost of protein replacement for subsidized store bought food in Taloyoak is \$150 kg⁻¹.

i The replacement cost of unsubsidized country food through commercial distribution networks is \$198.70 kg⁻¹ in Taloyoak. Cost savings from avoided government subsidies would account for close to \$480,000 a year.

Between one to five cruise ships visit Aviqtuuq annually, representing between \$3,600 and \$18,000 for the local economy.^j ⁷⁵ Visitors from cruise ships typically spend a few hours walking around Taloyoak before leaving for their next destination. Increasing tourism activities around Taloyoak represents a potential opportunity for investment, but a lack of local involvement and impact monitoring has been identified as an ongoing risk to community livelihood from an activity that currently offers few direct benefits in terms of jobs and opportunities.

Improving coordination between community members and visiting cruise ships could be a way to increase the revenues being generated by tourism activities in Taloyoak. Investments in developing local tourism can build upon the cruise ship-related training already being provided by the Government of Nunavut such as the “Cruise Ready! Community Preparedness Workshop” and the “Nalunaiqsijit: Inuit Cruise Training Initiative”, which includes a paid internship component.⁷⁶

Sport hunting in Aviqtuuq generates \$300,000 in annual revenues.

The most sought-after sport hunting involves polar bears^k, but it can also include muskox or fishing expeditions, both of which are in ample supply to support an expansion of local sport hunting and fishing capacity and generate revenues for local guides and outfitters. Recreational hunting of polar bears, which is legal and strictly regulated in Nunavut, generates between \$20,497 to \$35,138 per bear in local income revenues.⁷⁷ Community members are able to draw further benefits from the value of meat and pelts, which range from \$1,650 to \$3,114 per bear.⁷⁸ The community of Taloyoak has an allowable take of 20 polar bears a year, from which ten are used for sport hunts.⁷⁹ As a result, the annual economic value of polar bear sport hunting in Aviqtuuq is estimated at an average of \$300,000.^l These values do not include sport hunting and fishing of other species, which would likely increase the total value of sport hunting and fishing in the region above \$300,000 a year.

Tallurutiup Imanga National Marine Conservation Area

Spread over 109,000 km², Tallurutiup Imanga National Marine Conservation Area (NMCA) is the ecological hub of the eastern Arctic (see Figure 3). The NMCA is recognized by international organizations for its significance to the surrounding coastal communities in terms of its unique biodiversity, and its socio-economic and cultural contributions to the well-being of Inuit communities.⁸⁰ Work to establish the NMCA began accelerating

in 2016 with Shell Oil relinquishing offshore oil and gas leases totaling 8,700km² on the eastern edge of the NMCA, clearing the way for the federal government to expand the boundaries of Sirmilik National Park.⁸¹

In 2018, Tallurutiup Imanga NMCA and neighboring Sirmilik National Park were submitted to become UNESCO World Heritage Sites.⁸² In August 2019, the federal government and the Qikiqtani Inuit Association (QIA) announced the signing of an Inuit Impact and Benefit Agreement (IIBA), investing \$55 million over seven years (2019 to 2026). Close to 71% (\$39 million) of these investments will be directed to the establishment and ongoing operations of Inuit-led stewardship and conservation programs.⁸³

Today, several coastal communities surrounding Tallurutiup Imanga are directly benefiting from continued investments in their local conservation economies, including Pond Inlet (1,617), Clyde River (1,053), Arctic Bay (868), Resolute Bay (198), and Grise Fiord (129). For each of these communities, investing in a local conservation economy centered around Tallurutiup Imanga NMCA represents a cost-effective alternative to resource extraction for driving future economic growth.

This approach is creating better access to food, providing more local job opportunities, and reconnecting youth and Elders to traditional skills and knowledge networks. Although the scale and scope of the benefits being generated by these investments are different in each community, the value of these benefits at the regional level include the following.

Nautiqsuqtiit Guardians have generated an estimated \$15 million in co-benefits.

In 2017, QIA established an Inuit Guardians pilot program for the NMCA with Parks Canada investing \$900,000 for initial implementation.⁸⁴ The partnership between QIA and Parks Canada helped establish a regional approach for successful Inuit-led Guardians programs that connect the well-being of coastal communities to the health of key marine ecosystems.

In each of the five coastal communities around the NMCA, Inuit Guardians are also a way for community members to reconnect with sources of traditional knowledge, engage local youth and Elders, and ensure access to nutritious country foods are managed in a sustainable manner. The total SROI (see Box 3 above) for the communities around the NMCA is estimated to be more than \$2.2 million from the initial investments made in 2017.^m

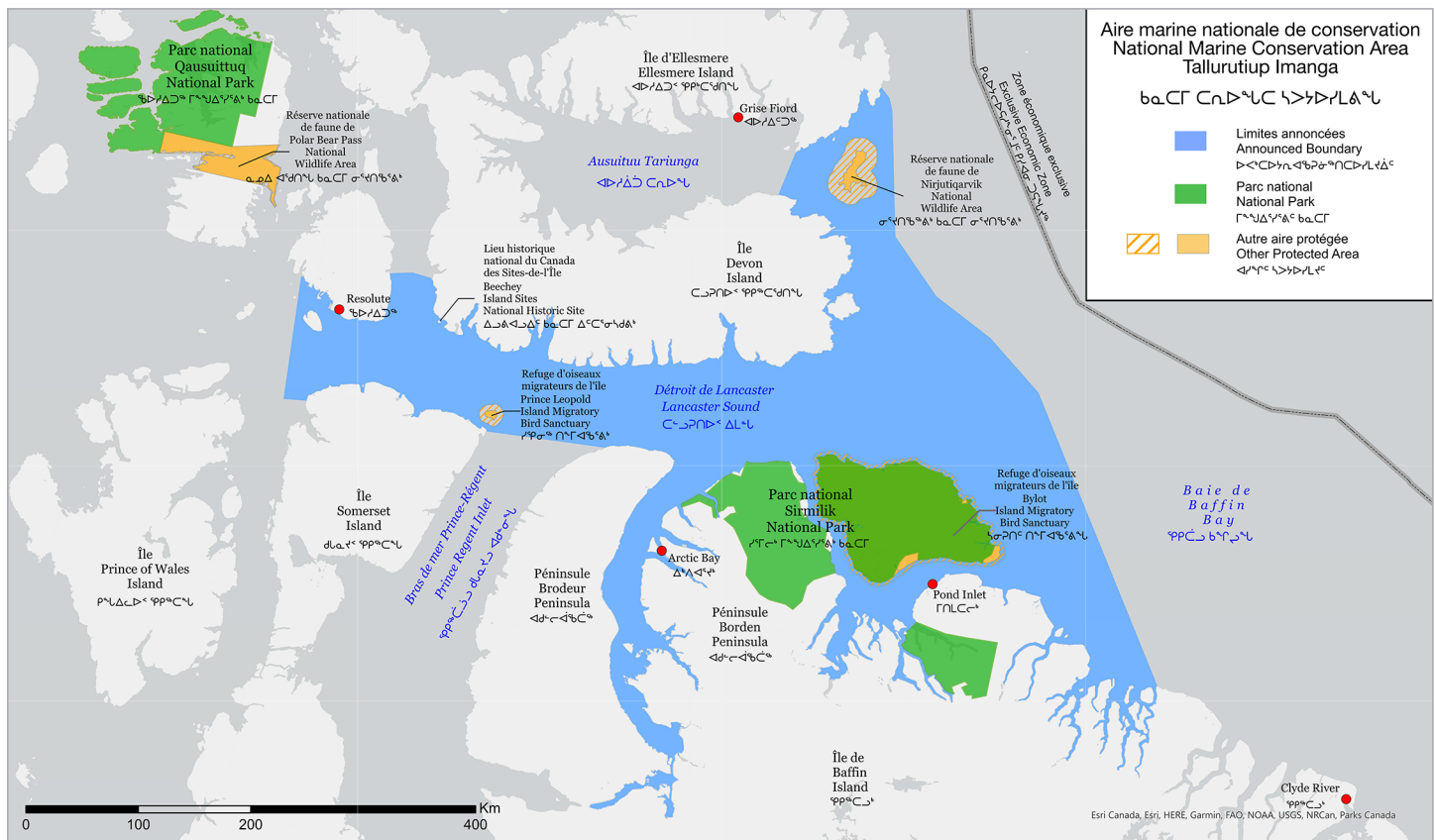
j Estimates are based on an observed value of \$3,614 per cruise ship for the local economy in Cambridge Bay and Gjoa Haven.

k Sport hunting of polar bears is legal in Nunavut, provided strict conservation and hunting guidelines are followed. All hunters must be accompanied by Inuit hunters and the number of polar bears eligible for sports hunting are determined by local Hunter and Trapper Organizations (HTOs) – a maximum of 50% of the annual quota can be dedicated for sports hunting and the revenues of these hunts provide vital sources of income for local hunters.

l The estimated average is based on an observed range of \$221,470 to \$382,000.

m Investments in Guardians programs for Lutsel K'e and the Dehcho region in the Northwest Territories have been observed to generate a social return on investment ratio of 2.5:1. We may thus infer that \$900,000 investment could return up to 2,250,000 in social, economic, cultural, and environmental value for the community.

Figure 3: Boundary of the Tallurutiup Imanga NMCA (in blue)



Source: Parks Canada

In 2023, the QIA used the federal government’s Harvesters Support Grant to convert part-time Guardians into full-time ones for three years. As a result, 25 guardians — five each in the five communities of Tallurutiup Imanga — will work as full-time employees, generating an estimated \$940,000 a year in locally relevant job opportunities, \$188,000 for each community.⁸⁵ Additional co-benefits that have been identified in the five coastal communities linked to Tallurutiup Imanga, but not captured as part of estimates include:

1. **Search and rescue functions** performed by Guardians as coast guard auxiliaries. In 2021, the guardians in Pond Inlet reportedly saved two hunters in a rescue mission.⁸⁶
2. **In situ conservation action** to limit the impact on key species habitats. In 2021, Mittimatalik Hunters and Trappers Organization in Pond Inlet noted a drop in the population of narwhals from 9,931 to 5,019 between 2019 and 2020.⁸⁷ The hunters’ organization urged the Nunavut Impact Review Board to ask Baffinland Iron Mines Corp. to restrict icebreaking near Baffin Island; the mining company agreed to avoid ice breaking.⁸⁸

n Estimates are based on the median territorial income of \$37,600.

o The cost of protein replacement for subsidized store bought food in the five coastal communities is \$149.20 kg⁻¹.

3. **Research and monitoring programs.** The 2019 IIBA included: (a) the establishment of an Inuit Research and Monitoring Fund that supports Inuit-led research and monitoring in Tallurutiup Imanga NMCA, and (b) the development of an Inuit Research and Monitoring Plan through the Inuit Research and Monitoring Fund to inform QIA of community research and monitoring priorities and concerns.

The regional country food economy is estimated to generate close to \$33 million a year.

In the coastal communities around Tallurutiup Imanga the protein replacement cost of sourcing country food from commercial distributors is \$221.23 kg⁻¹ and the five communities harvest 148,900 kg of country food protein annually, close to 37 kg per resident.⁸⁹ As a result, the country food harvested in coastal communities linked to the NMCA has an estimated value of \$33 million a year — \$22 million in market value plus an additional \$11 million in avoided government subsidies.⁹

Since the establishment of the Tallurutiup Imanga NMCA, the existing socio-economic and cultural value of the regional country food economy has attracted significant investments with the intention of driving economic growth.

A few of these include:

1. Investments in country food processing facilities in each of the five coastal communities by Parks Canada as part of an investment of \$190 million in regional infrastructure.⁹⁰
2. \$940,000 invested in the Intercommunity Trade System project by the Canadian Northern Economic Development Agency and the territorial government to further develop a regional country food economy.⁹¹ These investments are intended to leverage existing sources of value in local country food systems in several communities to develop a regional country food system. This initiative is jointly coordinated between Iqaluit and the communities.
3. \$483,000 invested in a two-year Baffin Inshore Fisheries Development project by CanNor, the territorial government, and Baffin Fisheries for the commercialization of inshore turbot and char fishing in Nunavut, as well as the development of small-scale, inshore commercial fishing operations in Pond Inlet and Clyde River.⁹²
4. An investment of \$43 million by the federal and territorial governments for a community harbour in Pond Inlet.⁹³ The harbour opened in 2022 and is now a vital link for regional markets, including food and building materials as well as for the tourism industry in the northern part of the Qikiqtaaluk region.

Tourism in Qikiqtaaluk generates more than \$71 million in annual revenues.

Regional ecosystems are home to several marine mammals that are key for eco-tourism and wildlife viewing, including narwhal, beluga and bowhead whales.⁹⁴ Tourism in the Tallurutiup Imanga NMCA includes whale watching, seal watching, bird watching, kayaking, and boat tours, which provide visitors an opportunity to experience and learn about the area's unique ecosystem and wildlife. The region has a number of key tourism attractions, such as the Northwest Passage, Sirmilik National Park, Nirjutiqarvik National Wildlife Area on Coburg Island, Prince Leopold Island Migratory Bird Sanctuary, Beechey Island Sites National Historic Site and Cunningham Inlet.⁹⁵ In nearby Sirmilik National Park, major tourism activities include hiking and backpacking, ski-touring, birdwatching, wildlife viewing (narwhal, beluga, and polar bears),⁹⁶ floe edge tours, and sea kayaking.⁹⁷ In 2022, 14 cruise ships and five private yachts carrying about 4,800 passengers were expected to visit Pond Inlet.⁹⁸

For the most part, the industry is limited by seasonality, high costs to get to the region, limited infrastructure, and complex permitting processes. Iqaluit airport is the only airport serving the five hamlets with direct flights, which often cost \$1,800 and above for a return flight. However, the region's remoteness, ruggedness and wilderness quality, and World Heritage Site status are also strengths that attract a certain visitor segment.⁹⁹ More than half of all visitors to the territory in 2018 visited the Qikiqtaaluk region generating more than \$71 million in revenues. Pond Inlet was the second most visited community after Iqaluit.¹⁰⁰

Anguniaqvia niqiqyuam Marine Protected Area

The Anguniaqvia niqiqyuam Marine Protected Area (ANMPA) is located north of the community of Paulatuk and is part of the Beaufort Delta Region (see Figure 4). It was established in 2016 collaboratively by Fisheries and Oceans Canada and the Inuvialuit Inuit, together with stakeholders from industry, environmental non-government organizations and the Government of the Northwest Territories (GNWT).

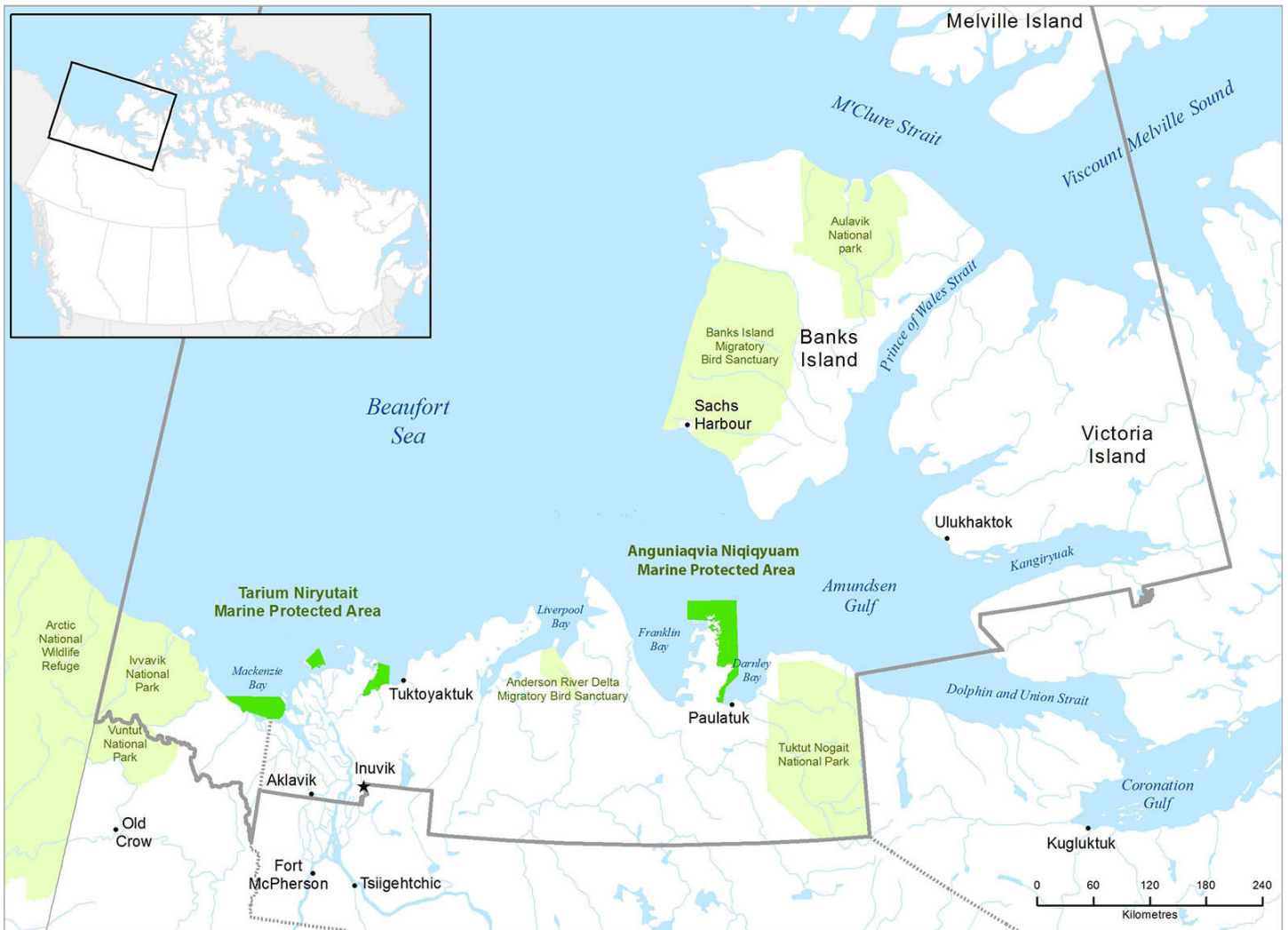
The 2,358 km² MPA was established to (a) maintain the integrity of the marine environment offshore of the Cape Parry Migratory Bird Sanctuary, and (b) maintain the habitat to support populations of cultural keystone species (such as beluga whales, Arctic char, and ringed and bearded seals).¹⁰¹

The ANMPA is an ecologically important area that provides critical habitat for Arctic char, cod, beluga and bowhead whales, ringed and bearded seals, polar bears, and sea birds.¹⁰² ANMPA hosts 40,000 migrating belugas, nearly one-third of the world's total population.¹⁰³ A warming north has meant animals like moose are showing up in Paulatuk where they rarely have been before.¹⁰⁴ The ANMPA is also culturally important for the Inuvialuit, as it supports subsistence harvesting of Arctic char, beluga whales, birds, and other species by the community of Paulatuk. The Parry Peninsula is an important Arctic fox trapping area for the residents of Paulatuk and their largest harvest of polar bears takes place off the shores of Cape Parry.¹⁰⁵ The community also uses portions of the ANMPA for travel, education, and other traditional activities.¹⁰⁶

Country food consumed by the community of Paulatuk is valued at an estimated \$1 million a year.

Community members of Paulatuk rely on ANMPA for hunting, trapping, and harvesting, which promotes access to nutritious food, nutrient intake, and the social economy.¹⁰⁷ Access to food is a challenge in the most remote communities of the Northwest Territories (NWT) as approximately 21% of households in the NWT face barriers to accessing nutritious country food.¹⁰⁸ The most commonly reported country foods consumed in the NWT are fish (especially whitefish) followed by caribou and moose. Those with a household income of less than \$30,000 report greater consumption of country food than those with an income greater than \$80,000, which indicates the importance of country food for Inuit in the NWT.¹⁰⁹

Figure 4: Location of the Anguniaqvia niqiqyuam MPA (highlighted in green north of Paulatuk)



Source: Fisheries and Oceans Canada

While estimates of country food harvest are unavailable for the NWT, approximately 135 kg of meat are harvested per year per Nunavut resident, with an average protein replacement cost of \$39.67 per kg for sourcing country food from commercial distributors.¹¹⁰ Assuming that 60% of NWT residents consume country food regularly¹¹¹, in Paulatuk (population of 298 in 2021), 178 residents would consume up to 24,000 kg of country food a year. Therefore, the country food harvested annually in Paulatuk has an estimated value of \$952,080 — \$724,080 in market value plus an additional \$228,000 in avoided government subsidies.

The federal and territorial governments are investing in the promotion of subsistence activities which is likely to increase the value of country food harvested in Anguniaqvia niqiqyuam Marine Protected Area.

The federal government is investing almost \$250,000 to promote the use of country food in existing food systems in the Beaufort Delta. The project will involve collaboration with local schools, daycares and cooking facilities in Tuktoyaktuk and Paulatuk to develop traditional food guidelines, provide equipment to harvest and process food, and offer community food workshops.¹¹² The Trapper Mentorship Program funded by the GNWT provides beginners with an opportunity to learn trapping.¹¹³ Participants partner with experienced trappers who act as mentors, passing on traditional life skills and knowledge and providing access to equipment and tools to start trapping. Mentees are provided a trapper starter kit valued at \$1,500, while mentors receive \$2,000.

Inuit Guardians are estimated to be generating close to \$2 million in co-benefits.

In 2019, \$4.3 million was allocated by the federal government under the Indigenous Guardians Pilot Program to six communities, including Paulatuk in the Inuvialuit Settlement Region, for a

three-year project: Munaqsi Community-Based Monitoring.¹¹⁴ The project used local and traditional knowledge to monitor environmental disturbances and safety hazards in the Inuvialuit Settlement Region. The funding allowed for the hiring and training of six Guardians from each of the communities. The Guardians act as stewards of key hunting and fishing areas collecting information about wildlife, biodiversity, and culturally significant sites.¹¹⁵

The Guardians are also a means for community members in Paulatuk to engage with sources of traditional knowledge, for youth and Elders to participate in Inuit culture, and to sustainably manage the areas that provide nutritious food to community members. Assuming that the Guardians in Paulatuk received one-sixth of the overall funding outlined above (\$718,000) the SROI (see Box 3 above) is estimated to be \$1.8 million.

Inuit-led research and monitoring programs received an investment of \$125,000 in 2020.

The communities of Ulukhaktok, Paulatuk and Sachs Harbour cumulatively received \$125,000 in 2019-20 under the Indigenous Community-Based Climate Monitoring Program. The project provided funding to monitor climate-related changes to winter travel routes, communicate the associated risks to community members, and to develop community specific travel safety plans.

The community of Paulatuk initiated beluga health monitoring in 2011, which has been maintained ever since.¹¹⁶ The Fisheries Joint Management Committee oversees the Beaufort Sea Beluga Management Plan, which is in operation in the ANMPA. The plan focuses on ensuring that the beluga population is maintained at a thriving level and to “provide for optimum sustainable harvest of beluga by the Inuvialuit.”¹¹⁷ The protection of the area is integral to the research and implementation of the Beaufort Sea Beluga Management Plan.¹¹⁸

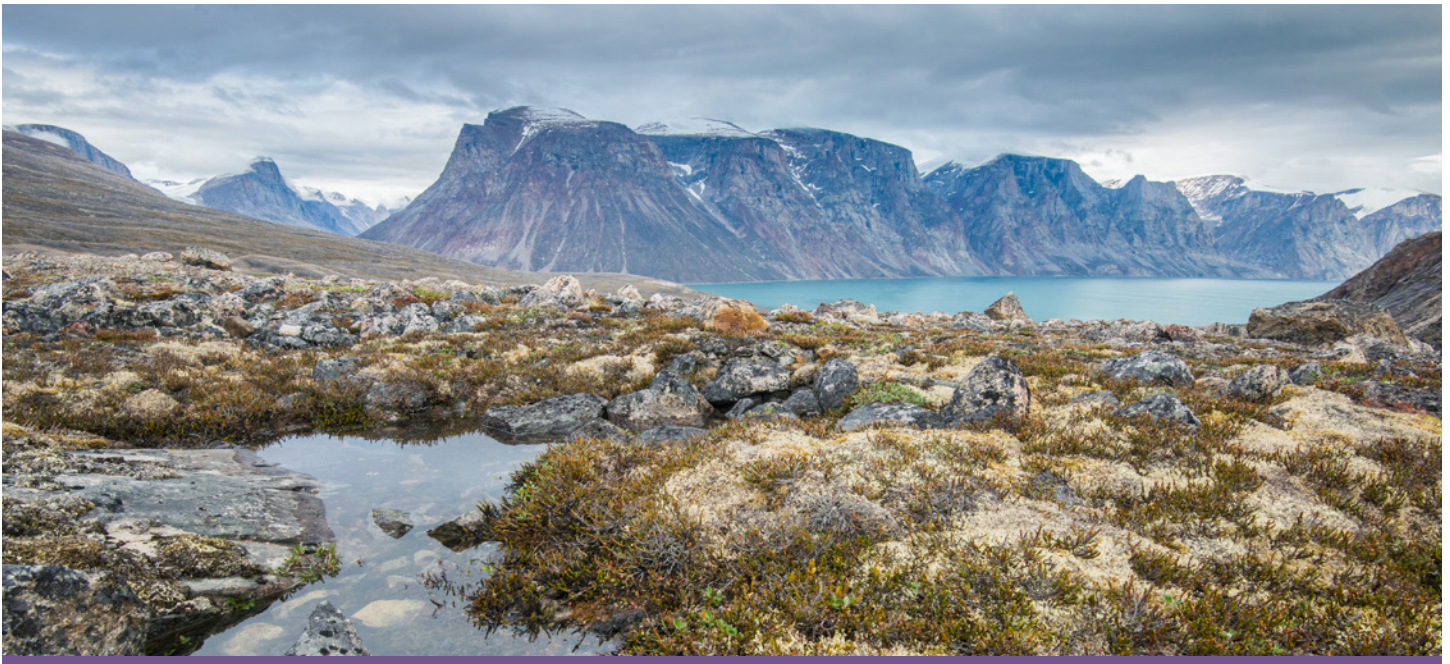
Tourists can engage in wildlife tourism and experience Inuit culture in Paulatuk.

There are several tourism opportunities for visitors to the ANMPA. Parks in the Beaufort Delta Region hosted 6,292 overnight visitors in 2019 (a five-year increase of 158%) with the main purpose of travel being aurora viewing (32%) followed by general touring (17%), outdoor adventure (6%), fishing (5%), and hunting (1%). Of these activities general touring and fishing saw the largest increase over the previous year.¹¹⁹

Nature-based tourism in the region includes activities like wildlife viewing, sport hunting, canoeing, kayaking, and hiking that rely on conservation of natural areas and ecosystems. The Cape Parry Migratory Bird Sanctuary, located 100 km north of Paulatuk, is an important resting, feeding, and breeding area for waterfowl that is accessible by permit for bird watching and wildlife photography.¹²⁰ For birders, one of the main draws is viewing the nesting habitat of the only thick-billed murre colony in the western

Canadian Arctic. Sport hunters guided by outfitters based in Paulatuk can hunt big game such as polar bears and muskox.^{121 122} Wilderness canoeing, flatwater kayaking, and hiking trips are conducted on the Arctic coast west of Paulatuk.

Cultural tourism activities include the Paulatuk Moonlight Dancers who use traditional singing, drumming, and dancing to convey Inuvialuit stories and history through their performances. Ninety percent of the group is composed of youth and children that learn from Elders and other experienced Inuvialuit.¹²³ For younger group members it is a way to remain connected with their language and culture making this not just a tourism attraction but also a way to transfer traditional knowledge to younger generations.¹²⁴



Conclusion

Coastal communities across Inuit Nunangat have long been dependent on marine ecosystems, from which harvesting animals forms a major part of both the cultural identity and economic prosperity of these populations. The well-being of Inuit communities is inextricably tied to the pace of conservation efforts in marine ecosystems, yet the prevailing discourse around regional economic development through natural resource extraction continues to challenge this vital relationship.

As Canada moves toward protecting 30% of its land and waters by 2030, investing in local conservation economies in Nunavut represents an opportunity to catalyze regional economic growth while enhancing resilience to climate change and conserving biodiversity.

Inuit communities in the territory are facing an unprecedented opportunity to build blue conservation economies in a way that aligns with the principles of Inuit Qaujimajatuqangit and leverages traditional knowledge and skills to accelerate regional economic growth.

Currently, a range of blue conservation economies are being developed in Nunavut and across Inuit Nunangat in response to new funding commitments for marine-based conservation initiatives. Similar success stories in the Northwest Territories

emphasize a clear business case that connects marine conservation efforts to substantial economic development opportunities in Canada's Arctic.

To realize the full potential of investing in Nunavut's blue conservation economy, there is an opportunity to learn from recent success stories and showcase the clear connection between marine conservation and local economic development. Our report builds a compelling profile of blue conservation economies across Inuit Nunangat and identifies three key areas of investment that communities can use to leverage their own paths for economic development that are aligned with Inuit Qaujimajatuqangit:

1. **Local country food economies** generate significant revenues but need significant investment. To scale country food operations into a source of both reliable income and access to nutritious food for coastal communities in Nunavut, investments in processing facilities and the capacity of local hunters are needed. These investments are crucial for ensuring the stability of the local supply, while also ensuring that country food sources are being harvested using traditional skills and knowledge to reduce the risk of producing unnecessary waste. Investing in a territorial network of cut-and-wrap facilities to prepare, process, distribute, and sell country food can tackle one of the territory's long-standing development challenges: improving access to nutritious food.
2. **Inuit Guardians and traditional knowledge networks** are key sources of skills and training that are readily investible to support future growth and development. Elders, hunters, and other community members hold critical knowledge

aligned with the principles of Inuit Qaujimajatuqangit that can unlock additional values related to country food harvesting and preparation, wilderness survival, and environmental monitoring. Investing in structured programs to teach these skills and reinforce local knowledge networks represents one of the most cost-effective ways to leverage existing resources to support future economic growth.

3. **Tourism and Inuit art.** Nunavut's tourism (\$96 million) and art (\$35 million) industries are lucrative but underfunded. Investments are needed to improve coordination with local Inuit communities and artisans looking to increase their participation in each of these areas to ensure revenues are being directed toward local communities and that the current barriers to entry are improved.

Investments in local conservation economies are increasingly being seen as a catalyst for economic growth and development across Nunavut. Developing a successful business case to attract investors will hinge on a clear expression of the values of these blue conservation economies and how they can contribute to a vision of regional economic development that prioritizes the long-term well-being of Inuit households.

Appendix 1: Values for cultural keystone species in Nunavut

Species	Economic Value (\$000')	Protein (\$ kg ⁻¹) ¹²⁵	Cultural Value ^p	Additional Comments
Arctic char	7,200	38	Keystone	Fishing is a cultural tradition and diverse species are staples of the Inuit diet — i.e., Arctic char, lake trout, Arctic cod, and halibut. In 2019, commercial fishing generated \$112 million and 300 jobs for Inuit.
Cod	–	34	High	
Lake trout	–	40	Moderate	
Halibut	–	37	Moderate	
Whales ¹²⁶	5,000	–	Keystone	Source of nutritious food and carving materials — representing an economic value of over \$5 million a year.
Narwhal	956	62		
Beluga	120	68		
Seals	6,000	32-46 ^q	Keystone	40,000 harvested annually under a government quota system — replacement value of \$5 million for the meat and \$1 million for pelts. International bans (e.g., 2009 in EU) have had negative impacts on the market for seal products and income opportunities for Inuit.
Walrus	7,000	49	High	Aged walrus meat (<i>igunaq</i>) is an important cultural food. The annual harvest is about 350 animals with an estimated economic value of \$7 million a year for meat and ivory.
Polar bears	4,400	43	Keystone	Polar bears are hunted legally in Nunavut under a government established quota system. A ban on importing polar bear hides in the U.S. in 2008 has reduced the market value of trophy hunting by more than 50%.
Caribou	100	43	Keystone	Meat is prized by Inuit for its taste and high nutritional value; steep decline in numbers has led to a reduction in the hunting quota.
Muskox	5,000 to 8,000	37	High	Each animal produces about 100 lbs of meat and 4-7 lbs of raw qiviut. Nunavut qiviut yarn is sold for over \$100/oz.
Wolves	196	–	High	Hunted or trapped mainly for their pelts - can fetch about \$500 and \$200 respectively. Inuit use these pelts for winter hood lining. A wolf sample collection program offers \$500 per wolf. ¹²⁷
Foxes	–	–	Moderate	
Snow geese	1,000	37	Moderate	Birds are heavily featured in Inuit folklore and art. The current value of bird harvesting in Nunavut is unknown, but the overabundance of snow geese in the region creates an opportunity for harvesting valued at over \$65 million a year.
Ptarmigan	(\$20/bird)	46	High	
Eider ¹²⁸	(\$180 kg ⁻¹)	24	High	
Kelp	–	–	Moderate	Source of nutritious food in the Inuit diet. Global kelp industry is growing and may represent an opportunity for investment.

p Keystone: main source of country food, links to Inuit culture and language, supports economic development; High: preferred source of nutritious country food and links to Inuit culture; Moderate: alternative source of nutritious country food with links to Inuit culture.

q Ranges from Ringed seal (165 g P/kg⁻¹) to Harp seal (238 g P/kg⁻¹)

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