“Everything is changing so much”:

Community Perspectives on the Declining Beluga Whale Harvest in Aklavik, NT

by

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ABSTRACT

The aim of this research is to improve understanding of human-beluga whale relations over time and the implications of change for the beluga whale harvest in Aklavik. A decline in Aklavik's beluga harvest over the last couple decades prompted Aklavik residents to propose this project.

The research was conducted in collaboration with Aklavik and follows community-based participatory research approaches. In summer 2017, data was collected in Aklavik with two local research assistants. Culturally appropriate research methods were utilised including: semi-structured interviews (n=32), experiential learning, and verification of results in summer 2018.

Results demonstrate that a spectrum of social and environmental change has altered present dynamics so that fewer people can hunt successfully. While some Inuvialuit remain beluga harvesters, they are ever-scarce in Aklavik, with youth often not receiving learning experiences.

It is hoped that this research will identify opportunities to support the creation of on-the-land programs and/or community hunts to revive the beluga whale harvest.

ACKNOWLEDGEMENTS

I would like to extend a heartfelt thank you to every teacher, peer, community member, Elder and knowledge-holder who has helped shape this academic and experiential journey. Mum and Dad, thank you for always believing in my potential, pushing me to achieve it, and always giving me the confidence to be myself.

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~ In memory of Wilson Malegana ~

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CHAPTER 1 SETTING

1.1 Introduction to Case Study Community – Aklavik, Northwest Territories

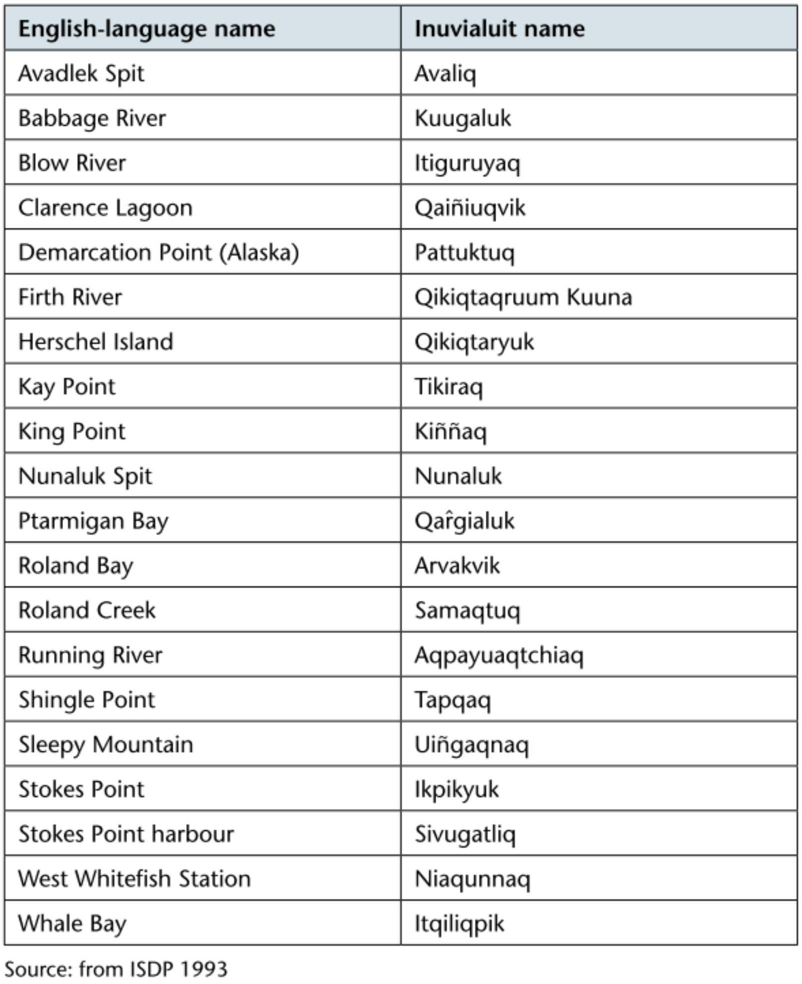
The hamlet of Aklavik in the Northwest Territories is a small yet diverse community of 590 people (Statistics Canada 2016), primarily of Inuvialuit and Gwich'in heritage, along with some Métis and non-Indigenous individuals. Originally called 'Aklaqvik', which means "place where a bear was killed" in Inuvialuktun, it was later changed to Aklavik because of Europeans' inability to properly pronounce 'aklaq'(Condon, Collings, and Wenzel 1995)(Community of Aklavik, Wildlife Management Advisory Council (NWT), and The Joint Secretariat 2008). The hamlet is nestled in a bend of the Peel River, one of the main channels of the Mackenzie River system (INAC 1971). The community is unique in that it is situated within two major land claims regions stemming from the Inuvialuit Final Agreement (1984) and the Gwich'in Comprehensive Land Claims Agreement (1992). Gwich'in in Aklavik are of the Ehdiitat cultural group; one of four major tribal distinctions (Aporta et al. 2018). Inuvialuit in Aklavik have ancestors from two distinct cultural groups in the Mackenzie Delta and along the Yukon coast – the Kupugmiut and the Kigirktarumiut, distinctively – as well as an enormous influx from Alaskan Eskimo in the early 20th century, accompanying American whalers moving into the Mackenzie Delta (Freeman, Vol. 2 1976). Starting with the establishment of a Hudson's Bay Company trading post in 1912, Aklavik grew to be an administrative and trading hub of the Mackenzie Delta by the early 1930's, with the fur trade of muskrats significantly driving economic activities (Freeman Vol. 2 1976).

However, as the community grew, space to build became limited and existing infrastructure was negatively impacted by frequent flooding and erosion. In the mid 1950's, governmental services relocated to a location on high, dry ground and called the new town site of Inuvik ("place of man"). It was expected that Aklavik would empty out and residents would also relocate to Inuvik, but instead, the motto "Never Say Die" was adopted by resilient families who stayed, and Aklavik continued to prosper as a smaller settlement with full amenities (Community of Aklavik, Wildlife Management Advisory Council (NWT), and The Joint Secretariat 2008). Aklavik is currently a modern community with cellular and internet services, a nursery to Grade 12 school, a nursing station, an Elders' residence, an airport terminal, two convenience stores, a post office, an R.C.M.P station, a greenhouse, a swimming pool, a community centre/arena/fitness complex, administrative offices and municipal services (Community of Aklavik, Wildlife Management Advisory Council (NWT), and The Joint Secretariat 2008).

1.11 HISTORY OF HARVESTING BELUGA WHALES IN AKLAVIK

Beluga whales (*Delphinapterus leucas),* or *qilalukkat* in Inuvialuktun, from the Eastern Beaufort Sea population, is one of Canada's largest, last estimated to be stable or increasing at 39,258 individuals, with a coefficient of variation of 0.229 (Harwood et al. 2014). They migrate over to Canada from the Bering Sea and congregate by the thousands in the Mackenzie Estuary (Hornby et al. 2016; Waugh et al. 2018). A land fast ice bridge is a barrier to beluga for entrance into the estuary; it typically breaks up in late June, opening access to the warmer, estuarine waters of the Mackenzie Delta, which belugas use to moult through to August (Hornby et al. 2016). The movement of beluga in spring breakup conditions has been observed by Inuvialuit and science to be heavily linked to these land fast ice bridges along the Mackenzie Shelf (Hornby et al. 2016).

For countless generations, Inuvialuit and their ancestors in the Mackenzie Delta – the Kupugmiut, Kigirktarumiut and Kittergaryumiut – have spent these summer months harvesting *qilalukkat* for subsistence (Harwood and Smith 2002; Freeman Vol. 1 1976). Through Inuvialuit oral tradition, evidence from the archaeological sites of *Kitigaaryuk* and *Kuugaatchiaq* and documented observations by Richardson (1848), it is verified that large gatherings of up 1000 people would gather at these coastal locations every summer to partake in the beluga hunt from *qainnat* (Hart and Amos 2004). Nuligak (1966) remembers that beluga whale harvests at this time were very high, with at least 150 whales harvested each summer, and that these harvested animals contributed significantly to their diet year-round. Coastal communities continued into the 1900's, with roughly 100 local Inuvialuit residing at Qikiqtaryuk (Herschel Island) in the mid-1910s, and three to six kin groups clustered around areas such as Aqpar̂uatchiaq (Running River), Tapqaq (Shingle Point), Kiññaq (King Point), Ikpikyuk (Stokes Point) and Qaiñluqvik (Clarence Lagoon), among others (Nagy 1994). However, in the summer months, people would all gather together to harvest whales at Niaqunnaq (West Whitefish) and at Tapqaq (Nagy 1994). Table 1 (Wildlife Management Advisory Council (North Slope) and Aklavik Hunters and Trappers Committee 2018) displays Inuvialuktun names for traditional coastal locations used for subsistence harvesting by Aklavik residents and their ancestors. Map 1 (Wildlife Management Advisory Council (North Slope) and Aklavik Hunters and Trappers Committee 2018) is the visual representation of these place names.



English-language name	Inuvialuit name
Avadlek Spit	Avaliq
Babbage River	Kuugaluk
Blow River	Itiguruyaq
Clarence Lagoon	Qaiñiuqvik
Demarcation Point (Alaska)	Pattuktuq
Firth River	Qikiqtaqruum Kuuna
Herschel Island	Qikiqtaryuk
Kay Point	Tikiraq
King Point	Kiññaq
Nunaluk Spit	Nunaluk
Ptarmigan Bay	Qar̂gialuk
Roland Bay	Arvakvik
Roland Creek	Samaqtuq
Running River	Aqpayuaqtchiaq
Shingle Point	Tapqaq
Sleepy Mountain	Uiñgaqnaq
Stokes Point	Ikpikyuk
Stokes Point harbour	Sivugatliq
West Whitefish Station	Niaqunnaq
Whale Bay	Itqiliqpik

Source: from ISDP 1993

Table 1: English and Inuvialuit place names of locations traditionally used by Aklavik residents and their ancestors (Wildlife Management Advisory Council (North Slope) and Aklavik Hunters and Trappers Committee 2018)

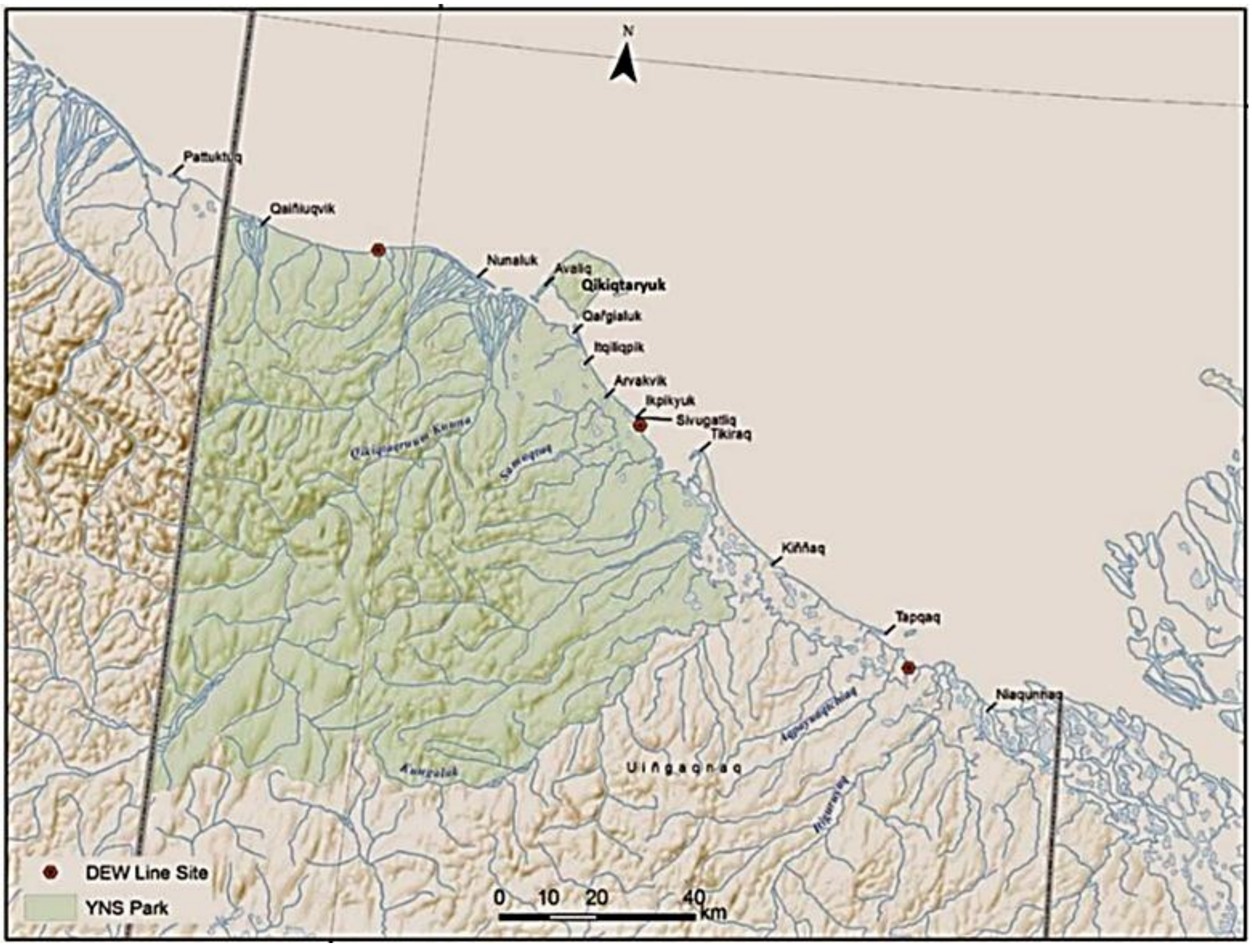

N
Pattuktuq
Qaiñiuqvik
Nunaluk
Avaliq
Qikiqtaryuk
Qaŕgialuk
Itqiliqpik
Arvakvik
Ikpikyuk
Sivugatliq
Tikiraq
Qikiqtaryum Kuuna
Kiññaq
Tapqaq
Niaqunnaq
Kuugaluk
Uiñgaqnaq
DEW Line Site
YNS Park
0
10
20
40
km

Figure 1: Map of Inuvialuit locations used by Aklavik residents and their ancestors (Wildlife Management Advisory Council (North Slope) and Aklavik Hunters and Trappers Committee 2018)

This traditional hunt continued throughout most of the twentieth century - in the Aklavik Journal (1956), it was reported that twenty-two whales were harvested in a single day at 'Niakronerk' (Niaqunnaq). With the introduction of modernized equipment, whales were harvested from jolly boats ("whale boats") in the 1920's and 1930's, and proceeded to 12-meter schooners in the 1940's and 1950's (Harwood and Smith 2002). These large boats, powered both by sails and small 'kickers' (outboard motors), would transport multiple families and their dog teams to the coast, where they would all reside for the summer months, conducting subsistence harvests of fish, berries, caribou and whales.

Several reports documenting Inuvialuit knowledge were consulted to establish an understanding of the beluga whale harvest in the Inuvialuit Settlement Region. In the *Inuvialuit Settlement Region Traditional Knowledge Report* (2006), hunters from Aklavik, Inuvik and Tuktoyaktuk shared their perspectives on harvesting *qilalukkat* (beluga whales). One participant from Inuvik described how they would go to the coast (Garry, Pelly, Baby and/or Kendall Island) for two to three weeks in order to get three whales, which would last them for the winter, while Inuvialuit from Aklavik were reported as spending as long as a month down at the coast to harvest whales and prepare dryfish (Inuuvik Community Corporation, Tuktuuyaqtuuq Community Corporation, and Aklarvik Community Corporation 2006). In the Yukon North Slope Inuvialuit Oral History (Nagy 1994), Sarah Meyook recalled that they would hunt whales at Niaqunnaq and then move to Shingle Point for fishing, as well as smoking and drying the whale meat. Uses of the whale extended beyond human consumption, with containers made out of the whale stomach, intestine and throat in which to store food, and remaining scraps were excellent dog food (Nagy 1994). Restrictions against noise in the camp while the beluga harvest was ongoing ensured that whales came in close enough for a successful harvest, but noise was then used to herd the pod into shallower water from schooners (Hart and Amos 2004). In all supporting literature, it is evident that the beluga hunt was a central part of Inuvialuit culture, and that efforts were focussed in the summer harvesting cycle to accommodate a successful and bountiful return.

1.2 Drivers of change affecting subsistence hunting in the Canadian Arctic

Over the last century, a rapid sequence of factors has synchronously affected Indigenous cultures living in the Canadian Arctic Circle (Champalle, Ford, and Sherman 2015). Largely due to contact with Eurocentric culture and colonialist power structures, those living in Inuit Nunangat (the homeland of Inuit in Canada) have adapted in such a way that livelihoods, cultural systems, social interactions, and hunting practices have changed to accommodate these new dynamics (Cameron 2012; Irwin 1988).

In the Beaufort Sea, hydrocarbon development has deeply influenced the socio-political economy of the surrounding communities, offering irregular employment opportunities and generating political tensions (Berkes, Berkes, and Fast 2007; Rawluk 2012). Land claims agreements between Arctic Indigenous peoples and the Government of Canada have introduced semi-autonomy through regulations, programs, and opportunities for co-management of land, water and wildlife (Rawluk 2012). Aklavik lies on territorial land governed by both the Inuvialuit Final Agreement (1984) and the Gwich'in Comprehensive Land Claim Agreement (1992), which creates a multicultural setting, with different values and priorities in evidence across the population.

Social structures of Arctic communities have been influenced by aspects of economic and political change (Usher 2002; Wenzel 1999). Resettlement into permanent housing and centralized communities has had exponential repercussions because it acted as a facilitator for all other aspects of Western life (Condon, Collings, and Wenzel 1995; Tester 2009; Tester 2010). The ability to engage in land-based activities diminished as families became increasingly immersed in the wage economy. Time constraints from employment, a crash in fur prices, high costs of mechanized hunting, the convenience of store-bought foods, and influences from southern culture all contributed to a shift away from a subsistence lifestyle (Ford and Furgal 2009; Idrobo and Berkes 2012).

Residential schools followed the colonial doctrine, forcefully demanding assimilation, and thereby created cultural genocide in many communities through erasure of language and traditions (Smith 2012). Countless survivors of the residential school system have recounted memories of neglect, abuse, and all-around viciousness from authority figures at the schools (Smith 2012). In the Canadian Arctic, these schools arrived in the 1940's and 1950's as mission schools, and eradicated Inuit knowledge transmission, language and culture through assimilation tactics and, in many cases, forced removal from their family units (Pearce et al. 2011). Widespread emotional traumas and loss from these experiences have reverberated through generations and still require active healing through reclaiming Indigenous culture, voice and language (Hoover et al. 2016; Lambert 2014; Smith 2012). 'Survivance' is a term coined by Gerald Vizenor encapsulating this healing journey; the word is an amalgamation of 'survival' and 'resistance' of Indigenous peoples where they renounce "dominance, tragedy and victimry" (King, Gubele & Rain Anderson 2015). Current formal educational systems continue to have significant impacts on the language, culture and values of Indigenous communities across the Canadian Arctic. Youth in school have less available time to spend out on the land with their families, which has deeply impacted *isumaqsayuq*, the process of experiential, Inuit-specific teaching (Wenzel 1999). Without this knowledge transmission, younger generations frequently lack the experience, confidence, and intimate environmental knowledge that enables them to engage in safe and successful hunting trips (Condon, Collings, and Wenzel 1995; Hoover et al. 2016; Pearce et al. 2010).

The Arctic has been undergoing rapid and unprecedented environmental change, which has been classified by recent studies as unidirectional and warming over the long-term, with temperatures rising over two times the global average (Chapin et al. 2015; Laidre et al. 2008).

Although Arctic species have exhibited the ability to adapt to short-term fluctuations of cooling or warming periods, the impacts of a long-term warming trend are unknown and pose a cause for concern for their survival, as many of the species rely on the presence of sea ice for their ecological function, and are ill-equipped to adapt to rapid changes to their environment (Moore et al. 2008). Widespread changes to the Arctic environment include loss of sea ice, increased erosion and permafrost thaw, reduced snow cover and an increase in forest fires (Chapin et al. 2015). The impacts of climate change on Inuit subsistence hunting is an ever-increasing topic of study, with vast and varied implications specific to region, species, and harvesting practices. Arctic warming affects Inuit subsistence harvesting directly, as the harvest cycle has adapted over generations to be tied to seasonality, species presence and environmental conditions that allow for successful hunting. In addition, despite being largely situated in wealthy and economically stable countries, Arctic communities are especially vulnerable to climate change, as their adaptive capabilities are tied to limited economic and societal conditions due to their remote locations and colonial power structures (Andrachuk and Smit 2012).

In the Beaufort Sea and Mackenzie Delta, the region of study for this project, specific environmental drivers of change have deeply impacted Inuvialuit interaction with the surrounding environment. The Peel Plateau in areas upstream of the Mackenzie Delta is an ice-marginal landscape where former ice sheets ended and has vast amounts of preserved ground ice and permafrost (Kokelj et al. 2017). With thawing processes intensifying due to rising air and permafrost temperatures, increased slumping has mobilized mechanisms of landscape change in fluvial, lacustrine and coastal environments (Kokelj et al. 2017). The Southern coast of the Beaufort Sea has been observed to have average retreat rates of one meter per year, with storm surges creating extreme scenarios of coastal degradation, with several meters of coastline washing away during certain storm events (Andrachuk and Smit 2012). It is thought that longer periods of open water contribute to increased cyclogenesis due to the potential for increased wave energy and warmer water temperatures (Manson et al. 2005; Solomon et al. 2009). Recent research has demonstrated that the Tarium Niryutait Marine Protected Area has experienced an average spring break up that is 10 days earlier than break-ups dates in 1974 (Loseto et al. 2018). These environmental changes undoubtedly have impacts on beluga whale health, distribution and presence, and in the TN MPA, the Eastern Beaufort Sea beluga population has been increasingly studied through monitoring multiple indicators in order to meet the TN MPA's management plan (Loseto et al. 2018). The onset of the beluga presence into the Mackenzie Estuary is highly linked to sea ice presence and the breaking of the land fast ice bridge, and there has been a trend towards earlier arrival dates over the past 45 years, with unprecedented observations of whales in the estuary on June 13th and 15th in 2016 (Loseto et al. 2018).

1.3 Current work concerning subsistence hunting in the Canadian Arctic

Despite these economic, political and social changes, Indigenous cultures demonstrate remarkable resilience, adaptability, forgiveness, and positivity. Subsistence hunting often remains a pivotal part of peoples' food security, economic stability, social bonds, and all-around happiness (Condon, Collings, and Wenzel 1995). Contemporary Inuit subsistence hunting is frequently described in two ways; as a social economy or as a mixed economy (Harder and Wenzel 2012). Social economies – largely centred on food and resource sharing networks – revolved around social norms and values such as *ilagiit* (extended family), *piqatigiit* (partnerships) and *ningiqtuq* (reciprocity) (Collings, Wenzel, and Condon 1998; Harder and Wenzel 2012). Mixed economies address the changes incorporated into the Inuit way of life over recent years, recognizing that, in addition to subsistence hunting, individuals now rely on numerous Western resources to meet basic needs (Harder and Wenzel 2012). Throughout the eras of increased contact with European explorers, traders, whalers, government and culture, the influence from the dominant Eurocentric culture has been a worry to Elders witnessing the influence it has on the youth. In the *Inuit Land Use and Occupancy Project* in 1976, adults and, more notably Elders, were vocal in expressing "acute alarm" over the estrangement of the younger generation from their 'real' Inuit identity. The consistency with which these concerns were expressed across the Arctic was fascinating, as Elders from countless isolated communities were noticing almost identical effects from Westernized school systems, religion, and colonialism. Comments repeated most often were those of disinterest in land-based activities and traditional customs, and frustration with how youth 'didn't listen', even when Elders actively tried to teach them in the old ways (Freeman 1976).

These factors and an ever-increasing influence from the south have created waves of social change, but in spite of this, knowledge, techniques and tradition have been shared across generations. Hunters justify their involvement with statements such as "My parents are really beginning to slow down so I'm hunting more", "I never wanted to be anything else but a hunter", "Eskimo food is fresher than the frozen meats at the Bay. That stuff is usually old and freezer burned" and "It's the best kind of R and R there is. It gets cold sometimes, but you gotta do it" (Condon, Collings, and Wenzel 1995). In the *Inuit Land Use and Occupancy Project* (1976), Tom Sammurtuk from Chesterfield reflected on his instinctive need to be on the land, and how being in town made him feel claustrophobic.

> *"If I am in the settlement for two or three weeks, I feel closed in, because it is in my blood. My ancestors were travellers. Whenever they felt like travelling, they were gone, they were free. I feel the same way. Whenever I stay in a place too*

> *long, I feel closed in and I cannot take it, so I just have to go out and let myself be myself."*

Strong connections between Arctic peoples and the land, water and animals have been noted by researchers since the days of the early anthropologists and ethnologists such as Jenness, Boas, and Damas. However, with the introduction of Western policies across the Canadian Arctic, the need to identify the cultural shifts emerging among arctic societies was felt. Anthropologists such as Condon, Wenzel, Usher, Tester and Irwin engaged with Northern communities in order to document and publish their perspectives. Currently, a wave of attention is directed towards physiological and ecological climate change in the Arctic, where a strong drive for quantifiable science frequently overshadows the need to understand the multifaceted societal changes affecting northern communities and their land-based livelihoods. It is only in the last decade that the human effects of climate change have been widely recognized in international climate forums and presented by ethnologists such as Collings, Smit, Ford, Pearce, Harder and Tyrrell.

Co-management initiatives between government and Indigenous communities have prompted an increased presence of scientists, policy-makers and ethnographers in Northern communities (Berkes et al. 2001; Berkes and Armitage 2010; Tester and Irniq 2008). One such partnership is the Beaufort Sea Partnership (BSP), which involves Inuvialuit rights holders (represented through community organizations such as the Hunters and Trappers Committees, the Community Corporations, and Elders' Committees) along with regional and federal governing bodies (such as the Fisheries Joint Management Committee and the Department of Fisheries and Oceans), totalling 52 stakeholder members. Newer agreements stemming from the BSP include documents and measures like the Beaufort Sea Beluga Management Plan, which exists largely through the continuation of the longest-running harvest monitoring study in the whole of the Arctic (Fisheries Joint Management Committee 2013; Harwood and Smith 2002). These co-management initiatives have resulted in the creation and monitoring of the Tarium Niryutait Marine Protected Area (TN MPA) in 2010 and the Anguniaqvia Niqiqyuam (AN MPA) in 2016 by Fisheries and Oceans Canada under Canada's *Oceans* Act (1997), with a priority of protecting the Eastern Beaufort Sea beluga whale population (Loseto et al. 2018). Figure 2 displays the TN MPA, the AN MPA and their geographic location for reference.

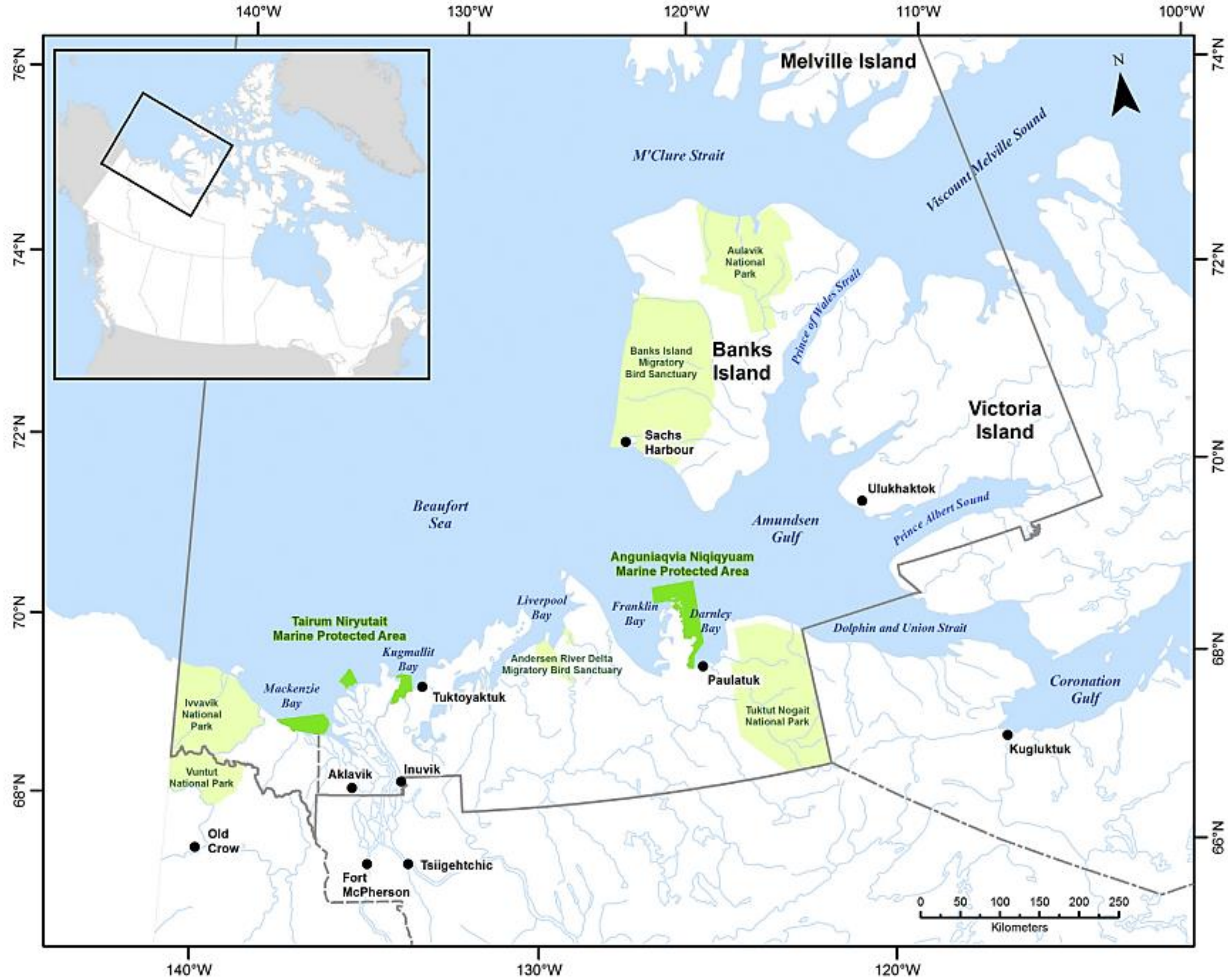

140°W
130°W
120°W
110°W
100°W
76°N
74°N
72°N
70°N
68°N
74°N
72°N
70°N
68°N
66°N
N
Melville Island
M'Clure Strait
Viscount Melville Sound
Aulavik National Park
Prince of Wales Strait
Banks Island Migratory Bird Sanctuary
Banks Island
Victoria Island
Sachs Harbour
Ulukhaktok
Prince Albert Sound
Beaufort Sea
Amundsen Gulf
Anguniaqvia Niqiqyuam Marine Protected Area
Liverpool Bay
Franklin Bay
Darnley Bay
Dolphin and Union Strait
Tairum Niryutait Marine Protected Area
Kugmallit Bay
Andersen River Delta Migratory Bird Sanctuary
Paulatuk
Coronation Gulf
Ivvavik National Park
Mackenzie Bay
Tuktoyaktuk
Tuktut Nogait National Park
Kugluktuk
Vuntut National Park
Aklavik
Inuvik
Old Crow
Fort McPherson
Tsiigehtchic
0 50 100 150 200 250
Kilometers
140°W
130°W
120°W

Figure 2: Geographic setting of the TN MPA and the AN MPA (Loseto et al. 2018)

Inuvialuit input is of critical importance in the monitoring and viability of the TN MPA, as it is in their vested interest to maintain a healthy whale population and allow for a continued whale harvest into the future (Fisheries Joint Management Committee 2013). Beluga whales remain a staple species for subsistence across the Inuvialuit Settlement Region, with a landed whale providing substantial amounts of country food to share throughout the community, allowing for culturally important interactions such as *payuktuq* (distributing food to another person or family) (Pearce et al. 2010).

1.4 Research opportunities and priorities

Many bodies of research focus on adaptability, resilience and vulnerability in the context of ecological theory applied to Arctic populations experiencing environmental and social changes. Additionally, an ever-growing movement is documenting and featuring Indigenous knowledge and observations of climate change in Arctic environments, often complemented alongside scientific research (Collings 2011). However, as Collings (2011) notes, there is a paucity of publication addressing specific processes and drivers of change, and how these mechanisms interact with the complexity of societal change that Arctic communities have undergone since the 1950's.

This research seeks to bridge the above-mentioned knowledge gap through a case study with Aklavik, Northwest Territories. The project will create a narrative of change in Aklavik by linking local observations of both social and environmental shifts affecting the community over time, with a specific focus on the community's beluga whale harvest. This research aims to build upon the growing discourse surrounding the human dimension of Arctic change while also adhering to Indigenous methods of inquiry through strong collaboration with the community of Aklavik. The project is a direct outcome of the Beluga Summit, which took place in Inuvik, Northwest Territories during the month of February, 2016. Here, a gathering of Inuvialuit beluga harvesters, Hunters and Trappers Committee (HTC) members, stakeholders and scientists discussed matters of importance concerning the Eastern Beaufort Sea beluga whale stock, which Inuvialuit Settlement Region communities continue to actively hunt. Representatives from Aklavik shared changes observed in the Mackenzie Delta region, in the Mackenzie Estuary and along the Yukon North Slope coastline. Table 2 outlines some of the comments from harvesters at the 2016 Beluga Summit.

Table 2: Observations from Aklavik Residents, Shared at 2016 Beluga Summit

High winds	Unpredictable, difficult weather conditions
	Winds changing directions in the space of a day
	Needing low winds to hunt
Ice conditions	Ocean breakup occurring too early and Mackenzie River breakup occurring too late
	Leads opening up for beluga to pass through before hunters can travel to Shingle Point
Social concerns	Not as many young people are hunting
	Knowledge transmission has slowed
	High cost, distance and effort to get to coast

1.41 RATIONALE FOR RESEARCH

Representatives at the 2016 Beluga Summit proposed that a project be designed to improve understanding of Aklavik's unique position in the Inuvialuit Settlement Region as a community experiencing a vastly declined harvest of beluga whales. Prior to this project, it was common knowledge that Aklavik's whale harvest was substantially lower than other communities, but the specific dynamics of change that set Aklavik apart from other communities in the ISR weren't explicitly identified.

A paucity of published material concerning Aklavik's subsistence hunting and diminishing beluga hunt indicates dynamics of this decline are little-understood among academics, scientists and policy. To support this assumption, community members from Aklavik identified this knowledge gap as a point of concern and a focus for future research. Historic harvest data complements community observations, with early beluga harvest information relaying that in August 1956, fifty-nine whales were harvested over the course of two weeks at East Whitefish camp, and twenty-two belugas were harvested in a single day at 'Niakronerk' (Niaqunnaq, or West Whitefish) camp (*Aklavik Journal*, 1956).

In comparison, a markedly downward trend in Aklavik's overall beluga whale harvest has occurred over the last 40 years, with a marked decline beginning in the 1990's and continuing to the present day (Figure 3). Data from the Fisheries Joint Management Committee and Fisheries and Oceans Canada's beluga whale harvest study demonstrates that Aklavik's beluga whale harvest has dropped to just a couple whales per year in recent years. This data, from 1975 to 2013, shows the combined harvest numbers from Aklavik camps located in the

Western geographic region of study in the Inuvialuit Settlement Region; predominantly harvests from *Tapqaq* (Shingle Point), *Niaqunnaq* (West Whitefish), Bird Camp and Husky Channel.

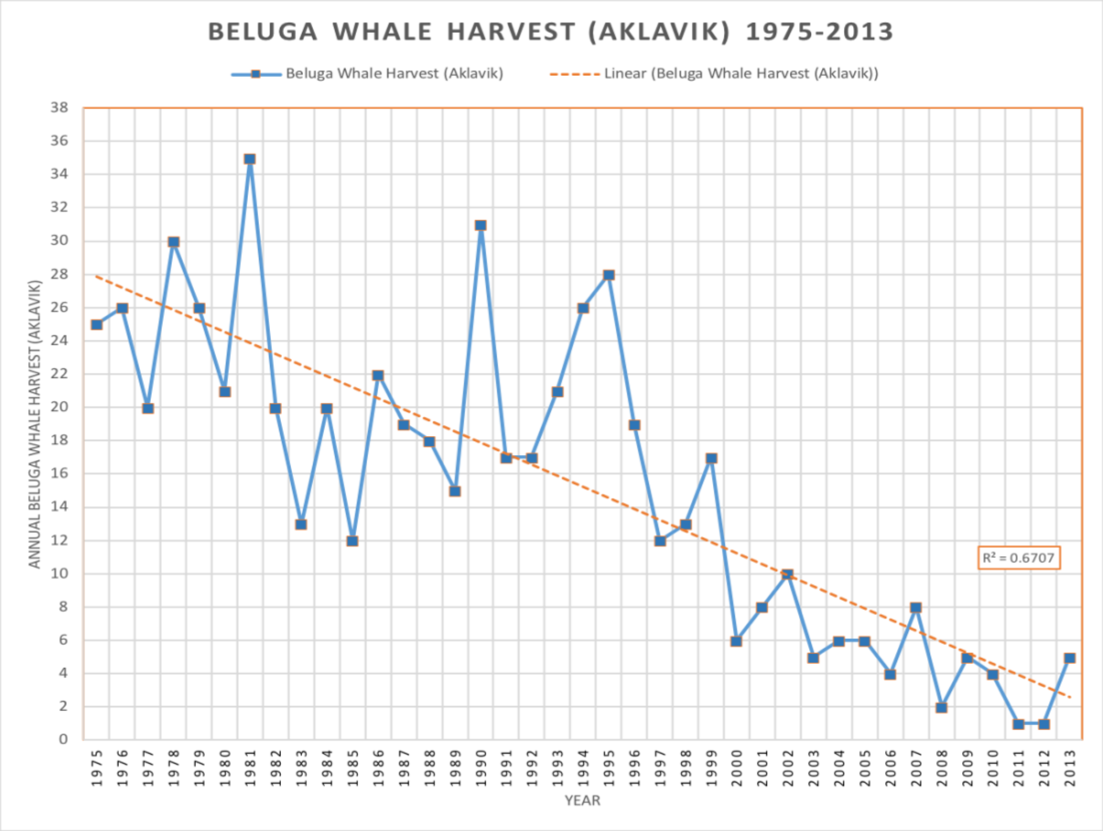


Figure 3: Aklavik's annual beluga whale harvest from 1975-2013 (FJMC, 2018)

Beluga blubber, referred to as *muktuk*, is considered a staple country food among many communities in the Inuvialuit Settlement Region and is traditionally consumed by Inuvialuit in Aklavik. *Muktuk* provides a nutritionally dense source of country food, containing high-level nutrients such as retinol (a form of vitamin A), vitamin B, vitamin C, polyunsaturated fats, and protein (Hoover et al. 2013). In Inuvialuit epistemology, the beluga hunt embodies many central cultural aspects to a healthy society such as resource sharing and teamwork, as well as unquantifiable spiritual and experiential returns (DFO 2000; Hoover et al. 2013; Usher 2002). Such a dramatic and pervasive swing away from a historically major source of country food has captured the attention of residents in the Inuvialuit Settlement Region, who feel that the outcomes of this research have the potential to not only benefit Aklavik residents, but also help other communities better understand important factors to consider in their own beluga harvest dynamics.

1.5 Research Aim and Objectives

The project aim and objectives were developed in communication with the Aklavik Hunters and Trappers Committee (Aklavik HTC) and responded directly to the concerns voiced at the 2016 Beluga Summit by Aklavik representatives. The aim of this research is to improve understanding of human-beluga whale relations over time and the implications of change for the beluga whale harvest in Aklavik. The aim will be accomplished through three objectives:

(1) document and describe the role and importance of subsistence hunting in the community of Aklavik, with a specific focus on human-beluga relations;

(2) gain community perspective on how these relations have changed over time, including the drivers of change (e.g. social, cultural, economic, political, environmental);

(3) assess the implication of these changes for the future of the beluga hunt, and identify culturally appropriate action that could be taken to revive the harvest.

CHAPTER 2 RESEARCH APPROACH AND METHODS

2.1 Complexities Surrounding Indigenous Ways of Knowing

In recent decades, policy across Canada has shifted to require the integration and consideration of traditional ecological knowledge (TEK) in developments, environmental assessment and resource management (Usher 2000). Definitions of what constitutes this knowledge are incredibly varied and often subjected to the context and purpose under which it is presented. The most complete and relevant definition to this project was found in the Inuvialuit Settlement Region Traditional Knowledge Report (2006), compiled by the community corporations of Inuvik, Tuktoyaktuk and Aklavik. Here, traditional knowledge is defined as:

> *"A cumulative body of knowledge, know-how, practices and representations maintained and developed by the peoples over a long period of time. This encompasses spiritual relationships, historical and present relationships with the natural environment, and the use of natural resources. It is generally expressed in oral form and passed on from generation to generation by story-telling and practical teaching."*

It must be noted that, although 'traditional knowledge' and 'TEK' remain frequently used terms in research and academia, several publications, as well as personal communications with several Indigenous people of many different nations, have emphasized that the term carries with it negative connotations (Nadasdy 1999; Simpson 1999). The context in which 'traditional ecological knowledge' is sought after generally requires it to be structured to *fit into* Euro-centric ideals and processes (land claims, co-management, policy), thus extracting and detaching it from its origin, which stems from a holistic and entirely different epistemology (Nadasdy 1999). It is often 'used' to off-set science when convenient, it is simplified when too complex, and is outright disregarded when contradictory (Nadasdy 1999, Simpson 1999). As Leanne Simpson, a

Michi Saagiig Niishnaabeg author argues, the “production of TEK greatly increases the chances of mis-representing and mis-interpreting the knowledge of Aboriginal Peoples”. Conversations with Indigenous people, both from Manitoba and from Aklavik, has taught me that, to them, the word ‘traditional’ is too static, creating an aura of rigid authenticity and romanticized customs and behaviours, and not giving recognition to the evolution, adaptation and ingenuity of their knowledge systems. Understanding and addressing this issue, I have pointedly chosen to use either ‘Indigenous knowledge’ (when referring to the wider context) or more specifically ‘Inuvialuit knowledge’ when appropriate.

In the Inuvialuit Final Agreement, it is stated that “the relevant knowledge and experience of both the Inuvialuit and the scientific communities should be employed in order to achieve conservation” (Committee for Original Peoples’ Entitlement and Canada 1984). This, in conjunction with mounting involvement of Inuvialuit and Gwich’in through co-management initiatives has increasingly ensured that researchers consider those perspectives when conducting their projects. Although positive effects from the recognition and inclusion of Indigenous bodies of knowledge abound, all too often, research initiatives do not create an atmosphere of reciprocity and respect when working with knowledge-holders, resulting in fragmented representation and disgruntled Indigenous collaborators, to say the least (Simpson 1999). There are many critiques of this fevered push for inclusion of “traditional knowledge” in order to meet political and regulatory demands (Nadasdy 1999).

Indigenous knowledge consists of a multiplicity of layers; with time scale (past, present and future) and methods of transmission (oral, not textualized) to consider, as well as an unquantifiable, culturally specific spiritual aspect that is personalized to each individual (Pearce et al. 2015). By recognizing Indigenous knowledge as a seamless entity specific to a culture’s epistemology, it is obvious where the difficulty in ‘fitting’ this perspective into a scientific framework may arise (Nadasdy 1999; Simpson 1999). Direct observational experience and practical teaching grounded in cultural values are integral parts to Indigenous ways of knowing (Absolon 2011). While observation and hands-on teaching share similarities with the scientific process, the cultural significance of this knowledge will be lost if integrated into the Western framework of ‘research’ **(**Kovach 2009**).** This is because the very nature of Indigenous knowledge recognizes that it has no discernable parts – it is seamless – so to break it up into components is to remove its context to the individual and the culture (Tester and Irniq 2008).

Categorizing, ranking, ‘using’ and textualizing Indigenous ways of knowing are argued to be a continuation of the extractive colonial legacy and must be treated with utmost caution, as they perpetuate harmful power dynamics between researchers and Indigenous peoples (Nadasdy 1999; Simpson 1999; Tester and Irniq 2008). As Simpson (1999) reflects, textualizing Indigenous knowledge “transform[s] the knowledge from process to product […], transferring authority from the people to the context of the text.” (Simpson, 1999, pg. 82). Stevenson (1996) elaborates on this concept, advising that publishing ‘traditional’ knowledge is not enough, but must continue on to tangible action that benefits those who shared their knowledge.

> *“The well-intentioned concern to record the TEK of elders before they pass on, only to collect dust in some archive somewhere, is misplaced. If governments and Inuit groups are really concerned about the loss of TEK, they should charnel their efforts into restoring those contexts that give efficacy to this knowledge. This may mean, among other things, contributing much more support and resources to the traditional economy" (p.13, note 9)*(Stevenson 1996)

Entering a research partnership with an Indigenous community by being aware and sensitive to these subtleties is of supreme importance, especially if the community means to share aspects of their knowledge with the researcher. Open, honest communication and feedback is essential to maintaining a healthy collaboration and adopting a humble research approach will ensure that power dynamics are minimized (Cameron 2012; Inuit Tapiriit Kanatami 2007; Smith 2012).

The benefits of combining Indigenous knowledge with scientific research are enormous to research projects in the Arctic, where a harsh environment and the infrequent presence of scientists makes it very difficult to get observational data, especially on elusive marine mammals such as beluga whales (Breton-Honeyman, Furgal, and Hammill 2016). Therefore, research and co-management initiatives involving beluga whales in the Mackenzie River Estuary have increasingly relied on Indigenous knowledge to provide context, answers and explanation behind phenomena that scientific research cannot explain. Although Indigenous knowledge has been integrated into many scientific studies in this region, it has generally only been complementary to the overall scientific method. One study conducted by the Inuuvik, Aklarvik and Tuktuuyaqtuuq Community Corporations did capture Inuvialuit knowledge of many aspects of the surrounding region, including that of *qilalukkat* (beluga whales). Of particular relevance to this project were comments made by one hunter of the changes occurring in the region and how they affected *qilalukkat*:

> *"You can't just say, "Well, I'm going down there right after break-up," because you don't know if the ocean still have ice and then you missed that! You go down there, little kind of late, and the ice had already moved. Then the whales travel almost right behind the ice. Well, the whales are changing too … like at Shingle Point we know when whales come in, but still ice in this bay here and there's no ice around here. Kendall Island, people getting there and even Tuk they were getting whales. Yeah, they're getting the whales before us because [of] the ice conditions. Three years now I never got a whale. That's the change of the ice coming this way, yeah, and the whales go that way, so we're kind of too late."*
>
> ~ Anonymous, cited in Inuvialuit Settlement Region Traditional Knowledge Report (2006)

2.2 Theoretical Guidance and Research Approach

Despite suffering through a legacy of social injustice that continues in many ways even today, Indigenous peoples of Canada are ‘talking back’ through self-determination and rediscovery of identity, culture, and place in the monolithic Western culture (Ermine 2007; Smith 2012). Since the emergence of emancipatory research methodologies in the 1950’s and 1960’s, where marginalized societies began to claim their voice in the vast spectrum of positivist thinking, modernity and normalized universality, Indigenous communities have begun to develop frameworks for ethical research engagement (Kovach 2005). These varied and culturally appropriate methodologies provide direction to academics, consultants and industry by allowing the communities to exercise control over research activities on their territories, while maintaining central epistemological values to Indigenous cultures such as reciprocity, relationships, collectivity and accountability (First Nations Information Governance Committee 2007; Lambert 2014; Canadian Institutes of Health Research Natural Sciences and Engineering Research Council of Canada and Social Sciences and Humanities Research Council of Canada 2014).

In order to acknowledge, address and diminish the power dynamics present in academic research and government engagement, an effective research approach is to respect the ethical space between participants and the researcher. When two entities with distinct worldviews interact with one another, their different histories, experiences and epistemologies open up a cultural void known as ethical space (Ermine 2007). This theoretical area can serve as a neutral zone of engagement, with each party recognizing their individual position while simultaneously seeking to understand the ‘Other’ (Ermine, 2007). Recognizing these epistemological differences allows for mutual perspective and respect, while also demanding humility by acknowledging the limitations tied to only one ‘way of knowing’. The hidden interests, prejudices and assumptions that comprise the undercurrent that lies between Western and Indigenous societies can therefore be addressed and silenced (Ermine 2007).

Increasing awareness of the negative effects that extractive research approaches have had on Indigenous communities has created new expectations surrounding research framework, approach and methodology (First Nations Information Governance Committee 2007; Inuit Tapiriit Kanatami 2007; Lambert 2014; Smith 2012). Questions relating to Indigenous axiology that researchers must keep in mind throughout the research process include: Is the research topic coming from the community, and is it meaningful to the community? How does the project move the community closer to self-determination, survival, recovery and decolonization? Is the project supported by the community with cooperation and coordination from participants? (Lambert, 2014).

Additionally, a framework designed by Indigenous peoples called OCAP highlights the critical importance surrounding ownership, control, access and possession of data involving Indigenous peoples and cultures. These four principles were developed in response to the multiple concerns over the negative legacy of research conducted on and with Indigenous people, and when implemented successfully in engagement, have been helpful in restoring communities' trust in the research process (First Nations Information Governance Committee 2007). Through discussions with the Aklavik HTC and my personal moral guidance, I made the decision to adhere to all four principles of OCAP and have agreed that Aklavik HTC will have ownership, control, access and possession of the project and its related data upon completion. The Aklavik HTC confirmed the importance of following OCAP procedures, but informed me that it was expected of researchers engaging with the committee, which indicated I would be accomplishing the bare minimum. This led me to further explore avenues of research reciprocity and ways of ‘giving back’ to Aklavik.

Other initiatives and organizations developed by Indigenous peoples make it their mandate to demand national attention to community struggles stemming from power dynamics and soul wounds. Inuit Tapiriit Kanatami, which represents Inuit Nunangat (all Inuit in the Canadian Arctic), is an Inuit-governed organization that has engaged politicians, researchers and industry to consider the Inuit position amidst all of the challenges and opportunities occurring in the Arctic (Inuit Tapiriit Kanatami 2007). A guide for researchers developed by Inuit Tapiriit Kanatami outlines what is expected of researchers when collaborating with arctic communities; with a strong focus on bridging the ethical space, promoting participatory research, and providing tangible benefits to the communities (Inuit Tapiriit Kanatami 2007). The document not only highlights expectations for positive outcomes of research to Inuit communities, but also cautions against poor practices that have negatively affected research participants in the past. Some examples include: tokenization of ‘traditional’ or ‘local’ knowledge, lack of recognition, and decontextualization of local knowledge (Inuit Tapiriit Kanatami 2007). For anybody wishing to engage with Indigenous communities in Canada’s Arctic Circle, this document is instrumental to address and adhere to, especially considering there is a paucity of Inuit scholars and publications on how to engage in culturally appropriate research in Canada’s Arctic. There is a growing body of literature on methodologies based on southern Indigenous cultural views which has inspired this project’s research approach, however, a serious knowledge gap between Southern and Northern perspectives exists and hopefully will be addressed in the future.

One research approach which places frequent communication, correspondence and collaboration as a high priority is the community-based research approach, or community-research collaboration, outlined in Figure 4.

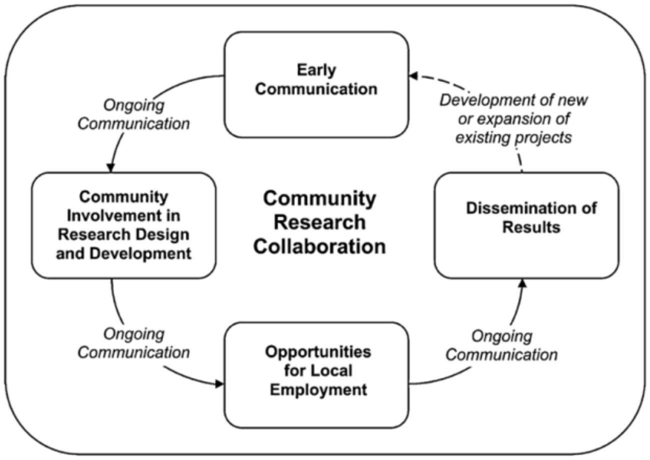

Early Communication
Ongoing Communication
Development of new or expansion of existing projects
Community Involvement in Research Design and Development
Community Research Collaboration
Dissemination of Results
Ongoing Communication
Opportunities for Local Employment
Ongoing Communication

Figure 4: Community research collaboration framework (Pearce et al. 2009)

Minkler describes a similar research approach, community-based participatory research, as an inherently political process which pointedly takes direction from community members in the theory, formation and realization of the research, and seeks to build capacity and improve social practice in the community (Minkler 2005). These research approaches have been defined as research methodologies that builds relationships based on trust and reciprocity through frequent communication, and, if conducted properly, have the potential to decolonize the power dynamics that occur between academia and Indigenous communities during research engagement (Castleden, Morgan, and Lamb 2012; Pearce et al. 2009). This can be achieved through various methods of sharing control, ownership and direction of the research project.

A main feature of community-based research is that it focuses more on the process and relationships of the project, rather than solely on the outcome (Castleden, Morgan, and Lamb 2012; Kovach 2009). The Nêhiyaw Kiskêyihtamowin (Plains Cree) term of *miyo-wîcêhtowin* translates in English to 'good relations' and is highlighted by Margaret Kovach as a guiding principle in her approach to research as an Indigenous academic. Kovach emphasizes the importance of embodying ethics as a methodology unto itself, as using reciprocity as an entry point to a research relationship (Kovach, 2009). A conceptual methodology honouring the Nêhiyaw Kiskêyihtamowin worldview is presented in Figure 4.

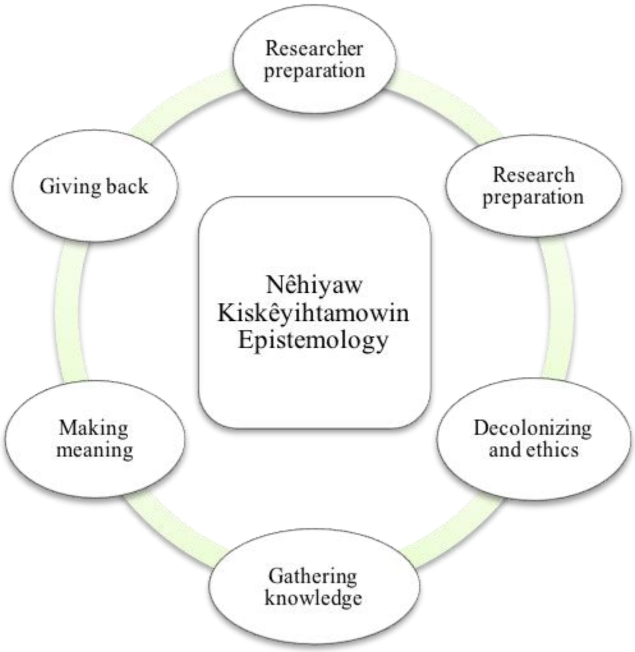

Researcher preparation
Research preparation
Decolonizing and ethics
Gathering knowledge
Making meaning
Giving back
Nêhiyaw Kiskêyihtamowin Epistemology

Figure 5: Nêhiyaw Kiskêyihtamowin conceptual framework for research (Kovach, 2009)

Although the two conceptual models of research engagement demonstrate many similarities, it is important to note the difference in language use. Part of decolonizing research is adopting language and terms that break away from the academic jargon and become more culturally appropriate to the relevant audience(s). Researchers, especially early researchers who are carving their way through the monolithic academic process, will use tried and tested terminology without critically assessing its applicability to their project, or the implications it may have to other audiences. Using meaningful and appropriate language to the community of Aklavik was an important consideration that guided this project throughout engagement.

Personal experiences with several Indigenous cultural perspectives solidified knowledge gained from reading the above-mentioned literature and publications. Through active and frequent engagement with various initiatives at the Turtle Lodge International Centre of Indigenous Education and Wellness in Sagkeeng First Nation (Treaty One) in Manitoba, I was exposed to many teachings of deep significance relating to Anishinaabe and Ininew (Cree) cultures, among others. The Turtle Lodge was founded by Elder Nii Gaani Inini Aki - Leading Earth Man (Dave Courchene Jr.) and is a volunteer-run centre where events, conferences and ceremonies are held to support the Lodge's mandate of *Mino-Pi-Mati-Si-Win* - A Good and Peaceful Way of Life (Courchene September 2017). I attended the Lodge on several occasions throughout 2017 and 2018, with each visit bringing new knowledge of Anishinaabe and Ininew perspectives on climate change, a balanced relationship with the natural world, emotional and spiritual wellbeing, the significance of Indigenous languages, and the critical importance of reciprocity and relationship-building moving forward. While these visits to the Lodge were personal in nature and separate from my academic research process, I did receive teachings that guided me as I proceeded on my own research path.

My first visit to the Lodge was for the 'Gathering of Traditional Knowledge Keepers and Scientists' (September 9 - 12, 2017), where the goal was to bring scientists and Indigenous knowledge keepers together to discuss dealing with effects of climate change in a more united and respectful way. Chief Darrell Bob of the St'at'imc First Nation made a comment that resonated with me, challenging my formal education and academic training and making me realize the importance of my instincts and morals. The comment (quoting Angaangaq Angakkorsuaq) was *"The longest journey we will ever make as human beings is the journey from the mind to the heart".* Chief Darrell Bob said it in reference to clash between the scientific process, where logic and efficiency dominates, and Indigenous ways of knowing, which are guided by relationships and connections. This comment was not only reinforced through many teachings at the Turtle Lodge, but also through advice from my advisors and through readings. Margaret Kovach (2005) explains that,

> *"Indigenous ways of knowing are organic with emphasis on reciprocity and humour. These ways of knowing are both cerebral and heartfelt. As the elders say, 'If you have important things to say, speak from the heart.'"* (p. 28)(Kovach 2005)

2.3 Research planning

While the research topic was put forth by representatives from Aklavik at the 2016 Beluga Summit in Inuvik and does represent community interests, it was imperative to receive an official letter of support from Aklavik HTC, which was distributed in November 2016 (Appendix I). After receipt of this letter, early planning and communication with the AHTC was ongoing until March 2017, when I visited Inuvik and Aklavik for a two-week time period. The purpose of this trip was pre-research engagement, and I presented at the AHTC's monthly meeting, received feedback and suggestions, and met with interested parties. I also presented to a youth group for a Gwich'in Life Skills Workshop at the community arena, as well as at the Inuvialuit Game Council meetings in Aklavik. During the time in Aklavik, I took the opportunity to advertise my project and introduce myself to the community through local radio and by putting up posters at community hubs, such as the Northern Store, Stanton's General Store, the Sittichinli Arena Complex, and at the administrative headquarters building. This visit set the groundwork on preparation for the main research engagement, and generated easier communication with the AHTC during the upcoming months.

Before engaging in the main research activities of summer 2017, it was required that I undergo two approval processes to verify that my research was to be ethical and conducted in accordance to regional agreements. For ethical approval of the project, I applied to the Joint Faculty Research Ethics Board at University of Manitoba, received feedback, and resubmitted the application to finally gain approval (Appendix II). In order to abide by regional guidelines, I applied to the Aurora Research Institute scientific licensing body, which in turn contacted local groups such as the Aklavik HTC, the Aklavik Community Corporation and the Inuvialuit Regional Corporation for individual approval before granting me my research license (Appendix III).

During summer 2017, I spent two months from June 25 to August 21, 2017 with Aklavik residents, both in Aklavik and at Shingle Point, YK. During this time, I attended AHTC meetings and engaged with community members on a daily basis. I promoted the project again over the local radio station, and offered my contact information for those interested in participating with the project in any way. By working with the AHTC, I created an application form and criteria guide for hiring local research assistants. The AHTC circulated the application form on their Facebook page, requesting that interested parties submit their resumes and arrange an interview. Two locals, Dorothy Ross and Clarence Kowana, were hired as research assistants to be involved in data analysis, interpretation of results and communication of results. Hiring Dorothy and Clarence provided mutually beneficial interactions; providing opportunities for local employment, experience conducting and organizing a research project, enhancing writing and communication skill, and allowing for personal insights to be put forth – helping direct the project to success. Local employment and involvement in remote communities are very well-received ways of 'giving back' to the community (Pearce et al., 2009) and, on a personal note, provided me with context, cultural guidance and friendship that was much needed during the research engagement.

2.4 Methods for data collection

From my position as a settler engaging with Inuvialuit knowledge and epistemology, this project has required me to engage in "Two-eyed Seeing" – a Mi'kmaq term for a dual perspective where I gain an understanding of how "two cultures view the world, and understand the benefits of both lifeways" (Lambert 2014). Therefore, when determining research methods, it was important to take inspiration from previous publication for academic purposes as well as from Aklavik itself. Because of this dual influence and set of priorities, a mixed methods approach was selected, where various methods were used based on the purpose, use and outcome of the research (Rawluk 2012).

Data was collected through semi-structured interviews, analysis of secondary sources (e.g. beluga harvesting data), 'learning through experience', and narrative inquiry (making meaning through stories). These methods actively attempted to diminish the power dynamics of academic research by engaging participants in humble, meaningful and culturally appropriate ways.

2.41 ‘LEARNING THROUGH EXPERIENCE’

The legacy of research with and on Indigenous peoples has often resulted in a “totemic” representation of Indigenous knowledge, with methodologies dictated by positivist academic approaches grounded in Western theory (Kovach 2009). When trying to gain insight on current ethnographic research engagement techniques, I was drawn to Bernard’s 2006 textbook of *Research Methods in Anthropology: Qualitative and Quantitative Methods.* Here, the author presented participant observation as the “foundation of cultural anthropology” (Bernard 2006). As he elaborated on its positivist influence and applicability in research, how it “involves deception and impression management”, and how “participant observation is not an attitude or an epistemological commitment or a way of life”, I became thoroughly disenchanted with approaching my imminent community engagement through a ‘participant observation’ lens. Although Bernard’s writings are evidently guided by expertise and are inevitably helpful to countless researchers, the undercurrent of the exotic “Other” (Ermine 2007; Smith 2012), was dated and overwhelmingly off-putting.

Bernard’s text was but one of several other, similar readings that jarred with my morals, and with each reading, I came to understand that my approach to community engagement must also have influence from beyond the Western school of thought. As taught by Niigaanwewidam James Sinclair, an Anishinabek professor at University of Manitoba, I began to position myself in order to approach my research requirements in a humble and respectful way, recognizing my limitations and where I need to make extra effort to reduce them.

I am a settler of British, French Canadian and Irish ancestry from southern Canada and I have grown up in a markedly different environment, both physical and cosmological, to Inuvialuit in Aklavik. As an academic from an institution grounded in Western methods of knowledge production, and with my ties to Fisheries and Oceans Canada, certain required methodologies and research approaches are expected and required of me which are not congruent with Inuvialuit ways to learning, sharing and teaching. I acknowledge these epistemological and methodological differences and have approached engaging with Inuvialuit knowledge-keepers through humility and a willingness to learn in a culturally appropriate way. In addition, by representing two well-funded institutions with far-reaching influence, founded on Euro-centric and colonial ideals, I felt it was critically necessary to minimize power dynamics to my greatest ability.

Research design was largely in my control throughout this project, but I felt it necessary to share responsibility with Aklavik so that their perspective may also guide this research journey. I contacted the Aklavik HTC through email, telephone, and in person, seeking guidance, and was encouraged to immerse myself in daily life and learn by watching. My committee fortified that guidance, telling me to be as active a participant in daily Aklavik life as possible and to not be a ‘wallflower’. When in Aklavik, it only seemed logical to be keen, eager to learn, and to be a helpful member of the community. By taking this approach and by allowing myself to be outside of my Winnipeg comfort zone, I created a new reality and almost unknowingly adopted a research method specific to Inuvialuit. As it will be evident in the results of this project, ‘learning through experience’ is a method of knowledge building that is highly valued and often practiced among Inuvialuit.

Inuvialuit Traditional Knowledge, as defined by the Inuuvik, Tuktuuyaqtuuq and Aklaarvik Community Corporations’ Traditional Knowledge Report (2006), is “the knowledge gained by Inuvialuit individuals through traditional learning patterns (stories/songs), and through living on and using the land”. I quickly learned the value of Inuvialuit knowledge and related methods of inquiry, as it is a deep knowledge that can only be ‘learned’ by experiencing certain lived experiences yourself. As I progressed through conducting interviews, my time on the land and in Aklavik solidified what community members were telling me through words. Not only did my immersion in daily life help me in my research journey, but it also built social bonds and created shared memories that were often referenced if I happened to interview a participant after such an experience together. Finally, this method of inquiry generated interest across the community through casual conversation, showed people I was eager and willing to learn, and was a very comfortable, organic, and culturally appropriate way of gaining knowledge for this project.

I was blessed to be invited on several outings throughout my time in Aklavik and at Shingle Point. In the Delta, I attended a weekend on-the-land camp with youth from Aklavik, where I was introduced to traditional Gwich’in fish preparation methods, Gwich’in games, and other teachings. I also heard many youth perspectives of what the land means to them, and was guided by two wonderful Gwich’in Elders throughout the weekend. Some friends I made in town took me out on numerous fishing trips, sometimes lasting until 3 AM in the eternal daylight! Occasions such as these allowed for candid and often very meaningful conversations about the land, on the land. On the Beaufort Sea coastline at Shingle Point, my teachings continued through involvement with activities such as checking fishnets and preparing dryfish, picking *akpiks* (cloudberries), traveling along the coastline and back to Aklavik by boat, and listening to stories from local residents. These moments added a richness to my overall understanding of peoples’ current priorities, perspectives, and setbacks for land-based activities.

2.42 SEMI-STRUCTURED INTERVIEWS

Semi-structured interviews focused on the three research objectives, and involved techniques such as open-ended questions, narrative inquiry, and prompting when necessary. An interview consent form, which was read and signed by all participants, is attached as Appendix IV and an interview guide is attached as Appendix V, outlining the approach taken during interviews with participants. The interview is designed to encompass all three research objectives through semi-directed questioning and is separated into three parts.

The aim of the first section of the interview was to determine each participants' overall involvement on the land and in subsistence hunting. This allowed for interesting insights on how much of a priority the beluga whale hunt was to each participant, situating each participant in an overall spectrum of less active to very active hunters. Context was gained through this positioning and allowed for deeper understanding in data analysis of priority species, hunter demographics, and changes to the seasonal hunting cycle in participants' lives. In addition, this introduction served as a facilitator for participants to open up about what was important to them out on the land, their personal experiences with hunting, and their values in relation to hunting. All three research objectives were captured in this section, as it set the stage for the rest of the interview.

The second part of the interview focused on participants' experiences hunting beluga – both historic and current. Questions in this section included; "When was the last time you harvested a whale?", "Who did you hunt with?", and "Where did you hunt whales from?". The purpose of this section was not only to gain a better understanding of Aklavik's beluga hunt, but also to capture individual perceptions of change affecting the ability, willingness, and involvement with the whale hunt. These changes were both social and environmental in nature. This section therefore captured both the first and second research objective of the project.

The third and final part of the interview looked to the future of the beluga harvest in Aklavik and sought to gain community opinion on where they saw the hunt going, and what (if anything) should be done to address the changes affecting the harvest. This section evolved over the course of the two months of engagement with Aklavik residents, and was influenced by the research assistants, Dorothy Ross and Clarence Kowana.

Open-ended questions and a flexible, informal atmosphere allowed each participant to elaborate on points of importance and make connections to other aspects of their experience and knowledge, while also revealing other subtleties that may not have previously been considered (Condon, Collings, and Wenzel 1995).

With the help of research assistants Dorothy Ross and Clarence Kowana, I interviewed thirty-two Aklavik residents who were identified and selected with the help of the AHTC and the research assistants; including active beluga hunters and processors, people with a history of beluga hunting who personally no longer hunt, and those who harvest other species but not beluga. We took care to include a representation of age, life experience and perspectives in order to meet the three research objectives of the project and gain a full understanding of the temporal and societal variety in the beluga harvest. Table 3 displays the demographics of the 32 participants interviewed during summer 2017.

Table 3: Demographics of interview participants in Aklavik (summer 2017)

	ELDERS	ADULTS	YOUTH
MALE	7	9	3
FEMALE	5	6	2

2.5 Audio recording and transcribing interviews

With participants' consent, interviews were recorded with a Zoom H4next Handy Recorder on a 32 GB SD memory card, which was stored in a secured building with 24-hour surveillance throughout the course of the project. Notes were taken by myself, Clarence and Dorothy during interviews. At the end of each work day, the three of us would meet and discuss our notes and major observations for the day. Notes were then condensed and integrated into the overall data of the project.

Upon returning to Winnipeg in August, audio recordings were transcribed using NVivo software, allocated time stamps and linked to the actual audio file for easy reference. Interview notes were also inputted into NVivo so that participants who did not provide consent to be recorded could still be included in analysis and contribute to the project's overall perspective.

2.6 Making meaning

2.61 QUALITATIVE CONTENT ANALYSIS AND CODING

When reviewing transcripts and interview notes, qualitative content analysis was used to help analyze the communications, create themes and identify linkages. Although its roots as a qualitative approach originate from a positivist, scientific paradigm and are more quantitative in nature, qualitative content analysis has adapted over time and evolved to assist various interpretive and epistemologically-centred methods of analysis (Graneheim, Lindgren, and Lundman 2017). Qualitative content analysis "focuses on subject and context and emphasizes variation, e.g. similarities within and differences between parts of the text" (Graneheim, Lindgren, and Lundman 2017).

A scale of interpretive approaches, from manifest content analysis to latent content analysis, can be used according to the nature and intent of the research. For this research project, an inductive approach was taken through early data interpretation, with a search for patterns emerging from the text through phenomenological thought (Narey 2017a). To create themes in NVivo, the inductive approach for manifest content proved useful, with emergent themes developing from recurring comments and statements about similar phenomena. These themes were generally more concrete, logistical and removed from epistemological influencers – storms, erosion and the high cost of gas are examples of manifest themes emerging from the data. Inductive reasoning proved to be the basis for most first-level coding in NVivo.

Coding is a popular technique in social sciences, as it facilitates the process of making inferences about patterns and theories in qualitative data (Narey 2017b). Coding, as described by Bernard (2006), "turns free-flowing texts into a set of nominal variables", allowing for large narrative datasets to be broken down into themes, categories, and topics. Generally, researchers begin with open-coding techniques that sort the data into general themes and progressively categorize those themes into more specific ideas (Elo & Kyngäs, 2008). This method was used as an entry point to organizing transcripts and to allow for easy referencing of important quotes based on topic and intent. 'Nodes' were developed for each theme through inductive reasoning, and second-level coding filtered its way into top-level themes to create categories. However, once the more obvious themes were identified and built upon, there was a glaring disconnect between how they influenced each other, an inability to view the project holistically, and very little clarity regarding change in Inuvialuit epistemology, values and culture. This challenge was a tangible example of the positivist nature of coding and how it is not appropriate as the sole method of analyzing experiential, open-ended narratives, especially when dealing with Inuvialuit culture and epistemology.

In order to address this methodological hurdle, latent content analysis and Indigenous methodologies were required for the final stages of working with the data. Latent content analysis is hermeneutic in nature and involves a connection between the researcher and study participants, which facilitates interpretation of the underlying meaning, or “red thread” connecting the themes of the text (Narey 2017). This approach complements a more holistic interpretation of results, and is what allowed for Aklavik’s story to be woven together from more of an Inuvialuit standpoint into a narrative that honours how all factors of change are connected. Inspiration was taken from Absolon (2011) in the use of metaphor to make meaning of results from more of an Indigenous and emancipatory standpoint. When assessing what was required for a successful beluga hunt historically and likening it to the changes impacting the beluga hunt currently, schooners and power boats (respectively) were representative metaphors highlighting the shift in both the physical and metaphysical over time. These metaphors allowed for clarity to be brought to the complex shift in values that has occurred in the latter half of the 20th century and beginning of the 21st century. The use of flow charts and diagrams to visualize the connections was critical during this stage of interpretation. Figure 5 demonstrates an early hand drawn flow chart that captures the manifest and latent themes, and exhibits the movement of connections between these findings.

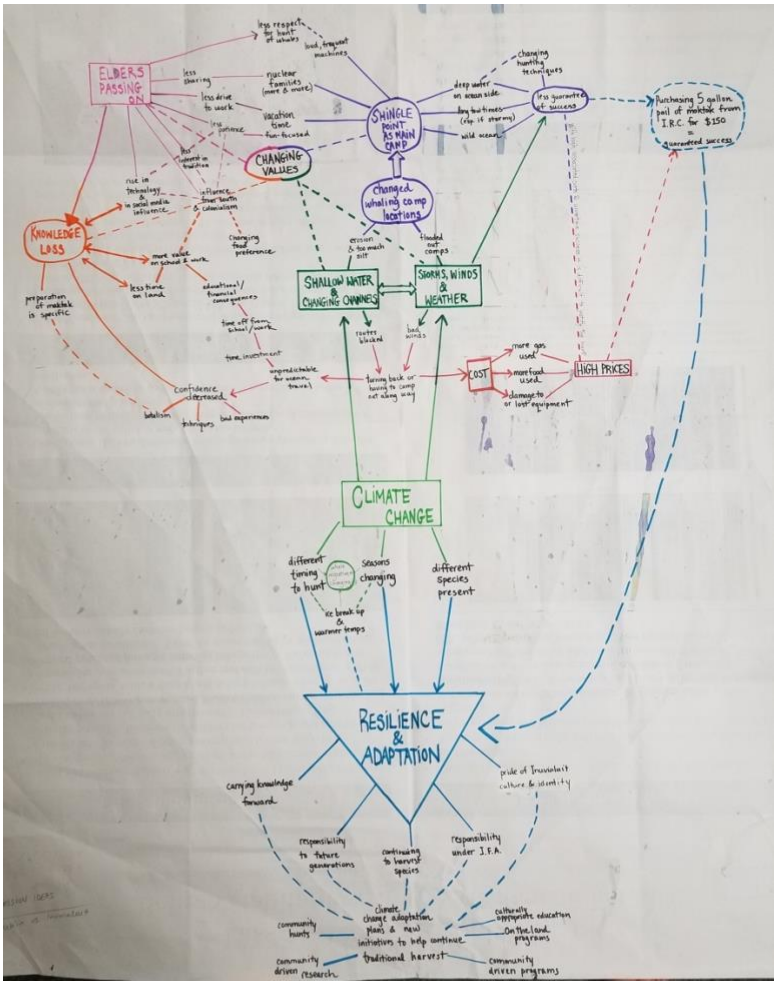

less respect for hunt of whales
loud, frequent machines
ELDERS PASSING ON
less sharing
nuclear families (more & more)
less drive to work
vacation time
less patience
fun-focused
less interest in tradition
CHANGING VALUES
SHINGLE POINT AS MAIN CAMP
changing hunting techniques
deep water on ocean side
long travel times (esp. if stormy)
wild ocean
less guaranteed of success
Purchasing 5 gallon pail of maktak from I.R.C. for $150 = guaranteed success
rise in technology & in social media influence
influence from South & colonialism
changed whaling camp locations
KNOWLEDGE LOSS
changing food preference
erosion & too much silt
flooded out camps
more value on school & work
less time on land
educational/financial consequences
SHALLOW WATER & CHANGING CHANNELS
STORMS, WINDS & WEATHER
preparation of maktak is specific
time off from school/work
routes blocked
bad winds
more gas used
time investment
unpredictable for ocean travel
turning back or having to camp out along way
COST
more food used
HIGH PRICES
damage to or lost equipment
confidence decreased
fatalism
techniques
bad experiences
CLIMATE CHANGE
different timing to hunt
seasons changing
different species present
ice break up & warmer temps
RESILIENCE & ADAPTATION
carrying knowledge forward
pride of Inuvialuit culture & identity
responsibility to future generations
continuing to harvest species
responsibility under I.F.A.
climate change adaptation plans & new initiatives to help continue traditional harvest
community hunts
culturally appropriate education
On the land programs
community driven research
community driven programs

Figure 6: Illustration showing connections between major themes from results

2.62 NARRATIVE INQUIRY

Exploring the deeper meaning behind narratives, or stories, has not only been a methodology in humanities, social sciences and ethnography, but has been practiced by cultures over millennia, and is deeply intrinsic to how many Indigenous peoples share knowledge, culture and experiences. Stories are considered central to much Indigenous research, and for many Indigenous scholars and writers, stories are a means through which to pass on knowledge and beliefs specifically to future generations so that they may also benefit from the stories in their lifetimes (Smith 2012). As Kovach (2009) states, “Stories are vessels for passing along teachings, medicines, and practices that can assist members of the collective” (p. 95). Indigenous scholars such as Margaret Kovach and Linda Tuhiwai Smith emphasize the sharing of stories as representing the ‘diversities of truth’ (Smith 2012) or the philosophy of ‘multiple truths’ (Kovach 2009), where the story teller has a multiplicity of unique truths, and from those, chooses which truth to share with the researcher. Stories therefore represent a connection between both the teller and the listener, ultimately based on respect and reciprocity (Smith 2012). When used in research, stories maintain control with the story-teller and not with the researcher, which complements emancipatory and decolonizing ways of conducting research (Smith 2012). Keavy Martin and Margaret Kovach suggest that stories and narratives allow for the crucial mind state of *nisitohtamiwon* – a Cree word for ‘self-in-relation’ (Kovach 2009), or ‘being-in-relation’ (Martin 2016), which exemplifies a respectful, humble and self-critical way of conducting oneself.

Seeking guidance from the methodology of story sharing and narrative inquiry, and positioning this research in the wider scheme of decolonizing and emancipatory research, I found it imperative to consider interview transcripts as stories and conversations to represent holistically rather than data to be analyzed in an extractive way. Teachings from story-sharing and knowledge gained through learning about narrative inquiry shaped the portrayal of this project’s results, with the narrative – the Inuvialuit voice – playing the central role and the researcher voice playing a complementary role. Kovach (2009) expresses concern over the publishers' and reviewers' opinions of incorporating large amounts of narrative into academic text, stating that it is often considered self-indulgent and is therefore frequently not supported (Kovach 2009). However, when revisiting Aklavik in summer 2018, review of quotes and the narrative was very positive, with participants frequently affirming their quotes through conversation and further story-sharing, or sometimes requesting that more context from the transcript be given to a specific quote to strengthen its meaning. Additionally, many Elders expressed gratitude for listening to and representing their stories, emphasizing how crucial it is for their experiences to teach future generations. This reinforced the strength and applicability of this method of representation. Because of this, the results are lengthy, quotations are often long, and they comprise the main bulk of the thesis. This was a conscious choice to reduce researcher bias and honour the holistic nature of story-sharing, context, and Inuvialuit ways of sharing knowledge.

2.63 REFLEXIVITY AND REACTIVITY: HOW THE PROCESS RESPONDED TO THE COMMUNITY

Over the course of the two-month engagement in Aklavik, I demonstrated researcher reflexivity by taking direction from participants on the content of the interviews and which questions were of importance to the community. The end of the first few interviews often finished on a more sombre note, with me asking questions regarding participants' opinions on the future of beluga hunting, and participants often responding with shrugs or sometimes bleak outlooks, considering all of the dramatic changes covered during their interviews. It became apparent that I needed to connect this project to more positivity by gaining local perspectives on how this research could benefit the community and understand how people can adapt in the face of change. I began integrating final questions such as “How can this project help Aklavik’s beluga harvest?”, and “What do you think is needed to raise local involvement in Aklavik’s beluga harvest?”. Immediately, people began expressing themselves with more hope, more encouragement and presented some very meaningful ideas. Not only did this change to the interview structure create a critical part of the third research objective, but it also allowed participants to voice their priorities for the project, and provide opinions on what the community is lacking with regards to the beluga whale harvest.

It was imperative for me to revisit Aklavik to share results with participants and the community at large, not only for researcher reciprocity and accountability, but also in order to check in with participants that my interpretation of their words and overall message of the results was accurate and reflected their intentions. From June 21 to July 9 2018, I revisited Aklavik to visit with participants, review their quotes and their context in the text, and host an open community meeting. Over the course of nearly three weeks, I individually contacted each participant with direct quotes in the results of the project and visited them at their house. During these visits, I highlighted all of their quotes in the Microsoft Word document of my working thesis. We sat down together and skimmed through my thesis, with me explaining my rationale and train of thought as the text progressed. Once we reached one of their quotes, I would provide context leading into the quote, read the quote to them, and explain how it tied into the message I was trying to present. I then asked if they were comfortable with the use of the quote in this context, and if I had understood them correctly. I offered plenty of opportunity to revise the quote, remove it, or provide further context. This process led to a wonderfully reactive editing process with each participant. Most of the time, participants agreed with how the quote was presented and the message it was sending, and would often back up their quotes with more stories and observations. At times, I would receive corrections that created a more accurate representation of what participants were trying to express, and this editing process was critical in making the thesis stronger and more viable.

This stage of the project was unequivocally the most rewarding and revealing, as I received valuable feedback and enormous insight into Aklavik's less tangible, more emotional perspective on the changing beluga harvest. I must emphasize the importance of returning the results and revisiting participants on a human level also – participants were visibly more open and candid in their conversation, and mutual respect was felt when checking with them that I represented their stories properly. During the community meeting, with 14 people (both participants and interested community members) in attendance, I received further feedback and advice for the direction and purpose of the project. This visit largely shaped my discussion and interpretation of the results.

CHAPTER 3 RESULTS

3.1 Qilalukkiaqtuaq: Remembering the beluga whale hunt in Aklavik, NT

Research Objective 1:

Document and describe the role and importance of subsistence hunting in the community of Aklavik, with a specific focus on human-beluga relations

In this results section, the aim is to create a narrative of the importance of subsistence hunting in Aklavik and the role that it continues to play in everyday life among interview participants, with a special focus on the beluga whale harvest. This will be done in two major sections; the first looking at peoples' involvement on the land in general, and the second exploring experiences and knowledge around Aklavik's beluga whale harvest.

It must be noted that although the results are separated into categories for ease of reading and for academic requirements, I acknowledge that everything is related, with one story or quotation having wide implications. I emphasize the holistic nature of being on the land, and that nothing is separate from, or above anything else in importance.

3.11 SUBSISTENCE HUNTING IN AKLAVIK, NT

3.11.1 Being 'on the land'

Throughout memory and oral history, Inuvialuit of Aklavik have been active harvesters of various animal species found on their traditional territory in the Northwest Territories, in the

Yukon Territory, and even in the United States, in Alaska. Depending on what time of year it is and which species is harvested, hunters have different locations to visit for highest success, best conditions, or suitable timing for the species. In some cases, ideal hunting locations, passed down through generations of observation, require multiple days of travel for long distances, and time spent on the land. For example, in order to harvest polar bear, one participant travels to near the Alaska - Yukon border. When answering if they in fact harvested a polar bear, the participant said,

> *"One. Yeah, I think it was back in 2009, my younger brother took me and guided me on a hunt. He was raised down around the coastal areas a lot more than me, so he knew of the safe ice conditions and everything."*

During the course of the interviews and time spent in Aklavik, it became evident that many residents still followed the seasonal harvesting cycle, with several describing in detail their harvesting activities relating to the specific time of year. When asked if they had been out on the land yet this year, most participants answered that they had, describing their activities up to that point. In fact, the great majority of interview participants made a concerted effort to go on multiple trips for harvesting purposes to ensure they had a supply of a variety country foods throughout the year. Margot McLeod was one participant who rarely stayed home in Aklavik, but rather preferred to go out harvesting.

> M.M. *"Oh yes, I've been pretty much every day, every other day. Yes, never stay home… and travel lots."*
>
> E.W. *"Mhmm. And where are some of your places that you go out on the land? On the Delta, or out to the coast?"*
>
> M.M. *"All over, yeah, all over. Up that way, and down towards the coast. So, we travel quite a bit."*

Although traditional harvesting remains a staple activity in the present day, many older participants described in detail how they were "on the land" year-round in their youth - sometimes into adulthood. Permanent residences were less common – it was more typical to rotate from camp to camp depending on the time of the year. This pattern seemed common among most Elders and even among many middle-aged adults, such as one participant who described how they were on the land growing up with their grandparents.

> *"Grew up on the land with them since I was a little kid. I got a video of it! A video! Four seasons; hunting rats, whaling, caribou hunting, geese hunting. I got a video of that but..."*

Another shared theme among participants is the value they place on teaching their skills to youth. Some participants were especially vocal about the importance of passing on knowledge and teaching what they know so it can continue into future generations. Judy Selamio described how her time on the land was a time to teach her daughter.

> *"Living in tents first time, after that I build a house down in Shingle. My daughter was new born, she's 24 right now, and every year we used to go in the bush with her. Teach her the values about hunting and trapping and fishing and preparing foods. It's not only her, I bring three or four girls down there. Today I'm glad they know how to do it, prepare food and store."*
>
> - Judy Selamio

Dean Arey, an active harvester who always makes time for going out and conducting harvesting activities, recalled how he predominantly grew up harvesting on the land.

> "*That's where I grew up was on the land, me. I only went to grade nine, ten, and then I went on my own when I was 18, 19. And I met my wife, got married, and we had kids. And ever since then I've been taking them out on the land and fishing, hunting."*
>
> - Dean Arey

Dean, along with several other participants, emphasized that formal education took a back seat to the seasonal harvesting cycle in his youth, with greater value (both cultural and economic) attached to land-based activities. Several participants noted that, in the past, Elders and other knowledge holders were unquestionably the teachers to the people, and that being on the land was in itself an educational system. Annie B. Gordon, an Elder with a long history of being on the land, shared a very poignant perspective outlining this view.

> A.B.G. *"That's what I always say. They were our teachers, our doctors, our professors, it's like they had their own universities. They were ..."*
>
> E.W. *"The educators."*
>
> A.B.G. *"Yeah, they were the educators. Because they never went to school and wrote like us. They never went to school to read like us. They never went to school where a teacher would tell them everything like this, but they learnt so much from their ancestors that they had to pass it on."*

3.11.2 Inuvialuit knowledge on the land

Knowledge sharing and learning through experience have always been seminal to Inuvialuit culture through the continuation of traditions and the creation of new techniques, ways of knowing, and observations. Through active engagement on the land with both the physical and biological world throughout generations, Inuvialuit have developed a dynamic and detailed understanding of their surrounding environment. As Elder Renie Arey described,

> *"You go out there and touch and feel and do, that's the way that you learn better that way. Sure, I may tell you a story about this and that, but I'm not really showing you how to do it! Yeah, but when you work hand in hand with things, this way you learn more. It's just like the language that uhhh... when I was at Ivvavik, I talked about my grandparents."*
>
> - Renie Arey

Unlike the Western school of thought and scientific process, Inuvialuit knowledge operates in multiple dimensions - having a vast temporal and intergenerational component, spiritual grounding through a unique epistemology, a diverse narrative through oral traditions, and localized/individualized knowledge subsets through countless observations. By living on the land, Inuvialuit learn both with the mind and with the heart, as there is a significant spiritual component to harvesting animals that was taught through the generations in order to maintain respect for other life. Judy Selamio described how the Elders who taught her important values have now instilled traditions in her that she feels she must also teach to youth.

> *"They have the value and the knowledge to pass it on to us, now I pass it onto our generation, the younger generation. Used to take the youth on the land program, years and years off to Shingle Point or Bird's Camp and teach them the values about hunting, trapping, fishing, and you know, how to prepare animals. How to cut up caribou and how to work with on the land. How you respect the land. Cause that's the way we were taught, to respect the land. If you don't respect the land, the land wouldn't provide you. That's what my grandmother always say. You always be nice to the land, every time we shoot a caribou or something, she always tell us to put a cigarette there or matches there. And when you got back the next time it's gonna be gone that cigarette and matches, because that's the way the… pff whatever myth is I guess! You always, whatever you catch, you put a cigarette or matches where you hunt. It's always our value, what my grandmother taught us."*
>
> - Judy Selamio

Families and kin groups often pass down harvesting camps, traplines and locations to their children, so specific areas become incredibly familiar to certain nuclear groups. When asked if he found success in his trapping efforts, Danny C. Gordon justified his good fortune by describing how familiar he and his wife were with the land on which they harvested.

> *"I think we've been fortunate. Because my wife inherited all the land from his grandfather, his dad, his cousins... we have a cabin 30 miles north of here. That's her area, that's where she used to harvest as a teenager, young girl, so when the family moved, we'd kind of use that land for our harvesting, trapping. Um, muskrat, lynx, mink, coloured fox, and otter, and beaver."*
>
> - Danny C. Gordon

He went on to express the value of the land to him, how it went beyond pure economic value to also encompass emotional connection and a livelihood.

> *"The land is valuable. I can't put a price on the land. There's too much there. You know, it support me all of these years, so um, it's good. We like it, we love it."*
>
> - Danny C. Gordon

Several participants were adamant in saying that the land deserves to be treated with respect, with some alluding to respect for wildlife, others tying it to respect for future generations, and still others describing how respect and good intentions were reciprocal – if you didn't respect the land, it wouldn't provide for you. Renie Arey, an Elder, was discussing how youth needed to be taught Inuvialuit values so that future generations could benefit from the land in the same way that she had in her lifetime.

> *"The young ones gotta learn to keep the land clean. Keep it clean like our ancestors did. Look at the land that they left us behind! It's nice and clean. We should be all like them. Leave it for our younger... our great grandchildren… for them to live on to be happy and do what we are doing today. Think of down the road for our children that are.... try to keep it clean, get only what you need. You know? Not overdo things..."*
>
> - Renie Arey

Connection to the land can be felt on many levels – spiritually, emotionally and physically. When talking to one Elder at a camp in the Delta, they shared a comment with me that really resonated. They said that you may think you're feeling okay in your day to day life when in town, but it's only when you go out on the land that you realize how much better you feel there, and how you may not have been feeling so great in the first place. Billy Archie shared how he notices the land as a place of relaxation and wellness for youth.

> *"And that's one the things, when you look at on the land, it's something with the environment, when you're out there. It clears your mind, it gives you that inspiration to keep going. 'Cause that's something I notice even with kids, when we take them out on the land, they're bad in school, but as soon as you take them out, it's like holy! Is this so-and-so? Like hey! They're totally different, just like night and day."*
>
> - Billy Archie

All of these beliefs and ways of learning meld together to create a dynamic and ever-changing understanding of the world, grounded in tradition but constantly pulling from new sources. As Billy Archie stated when describing the depth of Inuvialuit knowledge in relation to scientific research engagement,

> *"Yeah, so that's the types of things - observations. 'Cause you got really knowledgeable individuals in the communities who are out there all the time, observing. They get their own idea of what's going on."*
>
> - Billy Archie

Both participants and community members frequently alluded to the fact that they are 'always learning'. This statement came from a place of both humility and of logic – people of any age acknowledged that their personal experiences are but one part of a vast, combined epistemology, and that each new experience offers a unique learning opportunity.

3.11.3 Seasonal Harvesting Cycle in Aklavik, NT

The experiential-based knowledge system emerges from the time spent on the land by harvesters throughout their lifetimes. It became rapidly evident that participants in Aklavik had a wealth of knowledge about the seasonal cycles of harvesting species, with many participants describing in detail the seasonal hunting cycle they followed throughout the year.

Dean Arey, who is an active harvester year-round, described when the caribou rut began, and how harvesting progressed after the rut throughout the seasons,

> D.A. *"September, middle of September. Or October. Late September, October they start rutting. And uh, once the caribou, then we start getting ready for fall, ice fishing. With the net underneath the ice. And then we get all the egg fish. And big Whitefish. And then we start getting ready for trapping. November, we start*

> *getting ready for trapping. For mink, lynx, wolverine. And then we trap right until February I guess, March."*

E.W. *"And then it starts up again?"*

D.A. *"Yeah, starts all over again."*

Knowledge of species' particular harvest times and seasonal fluctuation is very specialized. Inuvialuit often arrange their harvest times and methods to be respectful to the animals while also getting the best quality meat. Margot McLeod described how the fall waterfowl harvest was timed to allow the birds to moult their pinfeathers.

> *"We... you gotta wait till end of August to hunt birds. Cause they still have their pinfeather, right? Well some do when you get em, but it's better to wait till end of August to start...September maybe."*
>
> - Margot McLeod

Danny C. Gordon went into detail when describing his habits for harvesting moose in the Delta, explaining his preference for meat quality and taste according to the seasons.

> *"Take a moose, I like to get my moose August and September. When they're fat. And then they really… the meat gets really soft when they're just prime in September/October. I don't shoot moose in winter time, because they change their eating habits. They start eating willows, and they taste like willow. And they get skinny and tough. Really tough meat."*
>
> - Danny C. Gordon

When talking about the time spent on the coast in her youth, Renie Arey recounted how harvesters would capitalize on the seasonal bounty, harvesting numerous items in one trip. She recalled the fall harvest of berries, caribou and fish near Shingle Point and further up the Delta.

> *"And because fall time is the time when it's berry picking time too, they all come back inland. If not, they pick right at Shingle Point, they go up there and pick all berries up there. And they'll go inland again and stay there for maybe about two weeks, hunting caribou, fresh caribou. And berries again, and geese hunting time, they'll get geese again, after they get everything, then they'll head to town."*
>
> - Renie Arey

Modern equipment such as power boats, outboard motors, snowmachines and four-wheelers let people reliably cover long distances in short periods of time. This allows for people to harvest during quick day trips rather than moving to a camp on the land. However, people still do travel for multiple days to further prime hunting locations (such as near Herschel Island or Alaska) and will also stay up to several weeks on the land if they have camps in the Delta or on the coast. Participants often talked about how they could travel for quicker trips and still have a successful harvest. Jordan McLeod described how he would harvest caribou on day trips throughout the year except for in the winter, when the cooler temperatures allowed him to leave the meat out longer because it wouldn’t spoil.

3.11.4 Priority Species to Harvest in Aklavik, NT

Although everybody painted a similar picture of focus species and their prime harvest times, each participant had slightly different priorities when it came to certain species. Some species, such as geese and other waterfowl, have a short but intense burst of time in the spring when they are ideal and/or available for harvest. In order to maximize the yield for harvesting, some participants commented on how they would drop everything and spend several days consecutively in blinds, waiting for geese to fly overhead. Brian Elanik, one young harvester, is especially fond of the waterfowl harvest and described how he barely slept while the geese were flying.

> *“Well if it's springtime and I'm hunting geese, it's just... stay with my skidoo. Don't even sleep! [...] That's how much I enjoy hunting those birds, it's just one week up and then came home the next... after the week I stayed up, we came home and I slept for, God dang, one hour. Or not one hour - eight hours! And then I went back out for another two days.”*
>
> - Brian Elanik

Other species used to be unquestionably a dominant priority among the majority of community members due to their good financial return from national and international market. Fur bearing animals such as fox, wolverine, wolf, mink and muskrat were historically trapped in great numbers due to the high demand for and cost of fur. Historically, muskrats were especially trapped in Aklavik; the Hamlet was granted the esteemed title of 'muskrat capital of the world' due to the sheer number of muskrats trapped by community members to satisfy the fur trade. Dean Arey put into perspective the economic importance of the muskrat trade in Aklavik during his childhood.

> *"And then the springtime, they start shooting muskrats. I mean, trapping. They get probably, five, six, seven hundred, eight hundred muskrats trapping. And then they'd start shooting once the water come, and they'd get... some families used to get ten thousand pelts, muskrats, and you know, that's... big families used to get that huh? I remember my dad telling me, my dad's family probably used to get five, six thousand in the springtime. Maybe till June 15th, because that was the only income they got huh? And it was probably ten, fifteen, twenty-five cents a muskrat pelt."*
>
> - Dean Arey

Billy Archie described how Aklavik used to barely have any inhabitants during ratting season in the spring,

> "*I mean, everybody was on the land. This town was a ghost town in the spring time because everybody was out hunting muskrats."*
>
> - Billy Archie

Plants and berries were also mentioned as being very important to the seasonal harvesting cycle - *akpiks* (cloudberries), cranberries, and rhubarb were plants mentioned as important to collect throughout the year. *Akpiks* were in season during the time I spent at Shingle Point (late July 2017) and they were collected by community members at any given opportunity, with trips to favourite picking spots around Shingle Point, as well as stopping at good locations on the voyage back to Aklavik. Residents in Aklavik at the time would make trips down to the coast to pick berries and would often multitask, scanning for caribou and other species. Michelle Gruben recounted how she goes to the coast for her own priorities while her common-law searches for caribou.

> *"That's when I do my fishing, berry picking, my common-law does caribou hunting, but me I don't hunt the caribou. But I help him work with it, cut it, bag it and whatever. But I don't do the hunting for caribou, I just do my fishing and berry picking."*
>
> - Michelle Gruben

Annie B. Gordon even described harvesting a traditional treat in her youth that she re-introduced to school children recently - the soft, sweet inside of fresh spring willows.

> *"And, us young kids, we run to the bush like this, that time just lots of bush all over. And we pick the certain kind of willows. And they peel that willow. It's just sap, really sweet. [...] Just... just suck the sap right out. At the tip of the willow it's just soft, just like kiwi. And they peel that off, and they just eat that."*
>
> - Annie B. Gordon

One species considered to be a staple among all participants is caribou. This species was named by twenty-six out of thirty-two participants as their favourite country food and was listed as a species hunted by nearly every participant. The versatility of the meat and preparation methods was often lauded by community members as a big attraction to the species as a food staple. While some people enjoyed boiling caribou in soup and roasting it in the oven, others described how their favourite part of the caribou were more traditional parts. Desiree Arey, a youth, explained how delicious she found the caribou head and tongue, and how it was her favourite of all country foods.

Traveling a great distance for a successful harvest is something shared across many harvesters for a variety of species. However, caribou was often brought up as an animal that people will journey far to get, depending on the season and previous availability. During my time in Aklavik, one participant traveled by boat from Aklavik to Inuvik, then drove down the Dempster Highway for quite a distance just to look for caribou, without success. Brian Elanik identified caribou as the species he traveled about 60 miles (to Blow River) to get, which was the farthest distance he traveled for a harvest.

In a conversation, Michelle Gruben explained to me that there is an organized community hunt for caribou whenever the Porcupine caribou herd is easily accessible from Aklavik. Experienced hunters will group together to harvest more caribou than they regularly would, with the intention of distributing the harvest to those who are unable to hunt themselves. This teamwork results in a wider distribution of a highly valued country food and embodies the sharing culture that has guided Inuvialuit harvesting practices for generations.

When describing his seasonal hunting cycle, Jonas Meyook elaborated on the importance of caribou as a food source and shared recent changes to its availability due to an increasing muskox population. However, a deep knowledge of caribou migration patterns and seasonal locations allows him to adapt to fluctuations in caribou availability, sometimes having to travel longer distances to access a favourite species. He described how, in the past, if caribou weren’t nearby, he would travel instead to Herschel Island, which is roughly 270 kilometers from Aklavik - a fair distance, but worth it for the harvest.

> *“Ten, fifteen years ago, muskox had come to the island! And once they reach the island, they stay on the island, and every time we go there, there's less and less caribou there. So not as much as caribou as what it used to be. And that's our main, like our... if we can't get one caribou at Shingle Point and above Aklavik, we always, used to always know there's caribou at Herschel Island. And now, when you go there, you hardly see any caribou because of the muskox!”*
>
> - Jonas Meyook

Billy Archie also commented on the effects an increased muskox population are having on caribou and how they are changing the migration patterns and hunting availability for caribou herds, touching on how some wildlife management organizations do not look at the whole picture when studying animal populations.

> B.A. *"Yeah. They're... all over the place! And they stink! And that's something that... I try to explain to the WMAC North Slope. That's the organization that's in charge. You look at the coastal plain and big mountains, Malcolm River, they were bragging about 300 animals in that area. Guess what? When the caribou are coming through in their migration in August they just have that one area to come through, and August is when they're rutting. So, you get these crazy muskox running after each other and banging heads, and guess what? You think you'd see a timid little caribou walking through there and..."*
>
> E.W. *"They take off, yeah!"*

3.12 THE BELUGA WHALE HARVEST IN AKLAVIK, NT

3.12.1 Past Beluga Whale Harvesting Locations

For hundreds of years, Inuvialuit of the Mackenzie Delta have harvested beluga whale in the summer months from June through to September along the Beaufort coast. The eastern Beaufort Sea beluga whales migrate from West to East across the waters of the Inuvialuit Settlement Region, moulting their skin, hunting for fish and nursing their young in the warmer, shallow waters of the Mackenzie Estuary. One harvester shared an observation taught by their father regarding the whales' habits moving through the Mackenzie Estuary.

> *"There's more black ones, they're young! They're not white, they're like, greyish. So they might be maybe a year old. I think they follow the teenagers and the adults go fishing and hunting for their herring. And the middle-aged ones watches the young ones, that's what my dad told me long ago. Like babysitting!"*

Participants shared numerous locations used by Aklavik residents to harvest beluga throughout their experience going to the coast. Many people talked about the whaling camps they went to in their younger days and elaborated on how different factors at the camps created an ideal situation for beluga whale harvesting. Figure 7 shows the whaling camps identified by participants and their location along the coast, with other whaling camps used by Inuvik and Tuktoyaktuk residents for reference.

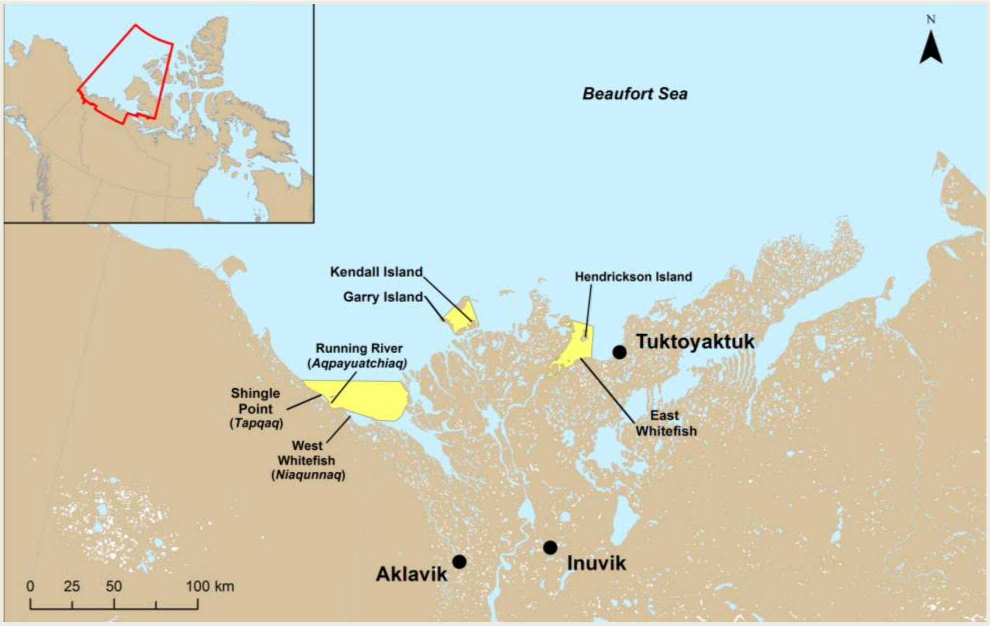

N
Beaufort Sea
Kendall Island
Garry Island
Hendrickson Island
Tuktoyaktuk
Running River
(*Aqpayuatchiaq*)
Shingle Point
(*Tapqaq*)
West Whitefish
(*Niaqunnaq*)
East Whitefish
Aklavik
Inuvik
0 25 50 100 km

Figure 7: Whaling camps used by communities of Aklavik, Inuvik and Tuktoyaktuk

Niaqunnaq, or West Whitefish, was frequently named by participants as the major location in the past used for the beluga harvest. When Elders described their memories of the beluga whale hunt, it was the most readily mentioned site and was associated with a team spirit of cooperation, reciprocity and unity. Renie Arey reminisced on the dynamics of the hunt at Niaqunnaq when she was a child living with her grandparents on the coast.

> *"When I was younger, we would, I was raised up by my grandmother, my mother died when I was five. And we'd go down to West Whitefish Station, we'd all go there and they'd all with... schooners. And this way we all got a whale. The mens*

> *would all go out with one boat and when it came in the women would all work together."*
>
> - Renie Arey

From what Elders recounted, it seems to have been the hub where the majority of Aklavik whalers spent their time harvesting. One Elder who has been going to the coast their entire life described that, although they go to Shingle Point now, they went to Niaqunnaq throughout their time growing up.

> *"Yeah most of the time anyway, I always go to Shingle Point, and when I was growing up, lots of us used to be whaling down at Whitefish, lots of whales you used to get that time."*

Danny C. Gordon and Annie C. Gordon both were reminiscing about how active the camp was at Niaqunnaq 'long ago', and how many boats and families would work together towards a common purpose.

E.W. *"So, for Niaqunnaq, did you used to hunt from there?"*

D.C.G. *"That was our main whaling station."*

A.C.G. *"Yeah, that was our main!"*

E.W. *"Your main whaling station!"*

D.C.G. *"It used to be ten schooners or more, and about 50 tents along the way, along the beach."*

A.C.G. *"Yeah. A lot of boats, [right to the end.]"*

D.C.G. *"[It was a joint venture when they whaled.] The whole families get together and do what they need to do, and get it done right."*

E.W. *"Wow, that is awesome."*

D.C.G. *"Yeah, it is."*

A.C.G. *"My grandpa used to have a scow and a boat, and it used to supply five families, dogs and all! And they used to have so many 45 gallons of muktuk and uqruq that's cooked."*

Annie B. Gordon also described in great detail her experience as a young girl at Niaqunnaq and the instruction she received by watching the whale harvesters engage in their activities. She emphasized how many people were involved in the hunt and how it directed life at camp.

> *"And then next year we went to Whitefish Station, West Whitefish Station, that's when I really see how much work they put into getting whales. We went to Whitefish Station and they do whaling from there, I used to see Elders, they were the ones instructing to go out hunting."*
>
> - Annie B. Gordon

Bird's Camp is another whaling location highlighted by participants as a good place from which to hunt whales. Although they have been hunting whale their entire life with their father, one participant shot and killed their first whale there just three years ago. After moving from Niaqunnaq, Judy Selamio moved to Bird's Camp for a period of time. Another younger harvester described how they tried to hunt a whale near the Bird's Camp area several years ago.

> *"…a friend of mine maybe about 7... 7 to 10 years ago, a friend of mine and myself we went out hunting near the Bird Camp area."*

Aqpar̂uatchiaq, or Running River, was another location used by some participants to camp in the summer; a place for fishing, picking berries, scanning for caribou and harvesting whales. Dorothy Ross recalls how conditions at Running River were better for whaling than her current camp at Shingle Point, with shallower water and a quiet respect for the beluga whale hunt. Although she herself does not eat whale meat because she doesn't have a taste for it, she is an active participant when whales are landed, helping prepare the whale for food. Another participant said they grew up going to the coast in the summer, with their camp at Aqpar̂uatchiaq A younger participant said the last time they helped prepare a landed whale was at Aqpar̂uatchiaq with Dorothy Ross.

> *"Yeah the last time I was about.... well when I was with Dorothy and family at Running River."*

3.12.2 Values and Practices Surrounding the Beluga Whale Harvest

Similarities between all of the locations listed above are multiple conditions and dynamics that are conducive to an effective whale hunt using Inuvialuit knowledge passed on throughout generations. Participants who had actively hunted whales throughout their lives had a similar narrative on how to successfully harvest a whale. Annie B. Gordon explained that people would take turns watching from wooden towers built to scan the ocean for whales, and how quiet the camp would be in preparation for the beluga whale hunt. This allowed whales to come in close to shore and facilitate the hunt, increasing the chances of a successful harvest.

> *"They climb that tower, they take turns… one comes down, another one goes up. And dogs don't bark, kids… if they wave a certain way, no kids go out, they all go in the tent and stay quiet. But even dogs don't bark. And somebody is always watching for some kind of signal from whoever is whale watching. And then all at once, all the men, they see that guy making sign to them, so they all start getting ready. And they get ready in a real quiet way, just hardly make noise. You don't even hear them when they're putting their stuff on the boat… everything is there already but they just grab what they need and just go really slow."*
>
> - Annie B. Gordon

Annie C. Gordon shared a story about a whale hunt where there were so many whales, the water became frothy from the sheer number of whales, with whitecaps and currents making the hunting conditions treacherous!

> *"Yeah. But, from there, you could watch whales. Boy there used to be a lot of whales. One time me and Danny was down there, we were at the point! Niaqunnaq River. At the point, and we watch whales. Just watch them. We never hunted since Selamio... Selamios... Sheba and Alice, since they died. We never hunted. We used to hunt for them. Just me and Danny go out and hunt for them and prepare and just take a pail, and they do whatever they want. But Niaqunnaq, they used to hunt there lots. But those whales! There used to be a lot of whales, that's after, um, Julia Brown did around there... there was so much whales,*

> *something just... you know... just... did something! Something happened anyways. Sometimes that made them scared, or something! And then the whole whales all started going out that way, they make BIG waves, real big wave, just like boiling! Behind. You can't travel behind them, it was that kind of waves."*
>
> - Annie C. Gordon

One Elder with a memory of harvesting in the 1960's mentioned how schooners – big ships with sails and small outboard motors that carried dozens of people – were the vessels used for the beluga whale harvest. Although they traveled slowly, they allowed for large groups to go out at the same time, creating a social atmosphere and distributing the work and experience among many.

> *"But long ago too, we see, when we were kids there was schooners, a couple of schooners with whales, when we were chasing whales we could see lots. Sometimes we go inland. Yeah. If you go early, you could get whales quicker."*

Renie Arey recalled the collaborative nature of the hunt and how schooners facilitated the sharing culture that guides big hunts and the distribution of food among Inuvialuit.

> *"And when the dry meat and everything is done, then they'll have a share. Each one like this, each person will have a share of whatever."*
>
> - Renie Arey

Nellie Arey, another Elder, described that schooners used to be out from the morning into the afternoon, pulling whales, and that trips to the coast could take two or three days. With schooners also came the ability to bring not only large groups, but also dog teams to help with the whale hunt. Nellie recalled that there were up to twenty dogs on a team, and that dog teams would help haul up whales out of the water onto the ice. She explained that dogs can think for themselves and this teamwork between people and dogs created a safer, more successful environment for the whale hunt. In return for their help with the hunt, dogs would receive their share of mipku.

Whatever wasn’t shared among the harvesters and their kin still did not go to waste. Elders such as Judy Selamio, Annie B. Gordon, Renie Arey and Annie C. Gordon all highlighted the importance of letting nothing go to waste, saying that was what they were taught from their Elders. Large groups of several families, including many dogs, guaranteed that all edible parts of the harvested whale would find their place in somebody’s stomach. Annie C. Gordon was nostalgic about the way she was taught to prepare whales from her Elders, and said she wished she could work on a whale like that again.

> *“I tell Danny you should get one whale for me! I would work on it, just like the way my mum and my grandparents did. They never throw away nothing! And there's so many people that they have to supply, like he takes about three families down. Plus, the dogs.”*
>
> - Annie C. Gordon

The dog teams were a very efficient way to use less desirable parts of the animal, reducing the wastage and often increasing the need to harvest more animals. Renie Arey also explained how extra meat from beluga whales and bad meat from muskrats would be given to dog teams to feed them.

> R.A. *“They all, whatever meat on that whale, they'd dry it for the dog food. It's just like when you come out from the Delta, you keep all the muskrats. What's no good from the muskrat, they'd dry them up in racks, dry them right up, and put them behind the schooner like this, then they need to feed dogs, they put them in the water and soak it in the water and then you'd feed your dogs like that.”*
>
> E.W. *“Hmm! Wow, so really nothing was wasted when the dogs were around, ‘cause they'll eat anything.”*
>
> R.A. *“Yes, nothing was wasted.”*
>
> - Renie Arey

When Annie B. Gordon shared her perspectives during the interview, she impressed upon me the importance of not wasting anything numerous times, saying that was what she was always told by the Elders who taught her how to live on the land.

> *"Yeah. Even now it's still like that! That's why I say lots of things that we used don't be used! You know, our Elders, they really use every part of the whale. Nothing is wasted. Even you, you know that when you go down. Nothing is wasted, everything is used."*
>
> - Annie B. Gordon

Proper preparation, management and distribution of the harvested food was directed by Elders, as Annie B. recounted. She emphasized that this organization created more opportunity to share food with people who really needed it, such as those who were unable to hunt for themselves.

> *"Our Elders were just like so organized about doing things like that. They never wasted anything! Never! Everybody, especially the widows and the single parents, if there's any, they always tried to help them. Lots of work, but that's what you do to get what you want for the winter!"*
>
> - Annie B. Gordon

Natural law plays a significant role in Inuvialuit harvest. Deep understanding of the importance of a respectful harvest that honours future generations of the species directs the beluga whale hunt. A couple Elders described how harvesters would only select certain whales to not compromise the next generation, targeting females without young calves and bulls, but leaving the nursing mothers alone so as to not orphan the babies.

> *"But you have young ones and you got, when you hunt whales too, you gotta look for which ones have no young ones. You gotta watch for that whale with no young one. And when you get it alone, it's easy to. And then you start following it."*
>
> *"So, you choose the dry females hey?"*
>
> *"Yeah, dry cow. *Laughs*"*

> *"Yeah, I heard that from someone else. That's... out of respect for the next generation?"*
>
> *"Yeah. Mmhmm."*

The other Elder described their rationale behind targeting bull whales.

> *"Yeah, the babies are always with the mother. You see, that's why we don't bother them. We know the males, we can see the males, how they react. They're a little further away. They're always... or they'll come by, distract you. But we always leave the mother and babies alone, we don't hunt them. We hunt the bulls."*

3.12.3 Hunting Techniques for the Beluga Whale Harvest

Of all species harvested by Inuvialuit, beluga whales are undoubtedly one of the most complex and difficult species to hunt. Large numbers of immense, highly intelligent animals swimming in an unforgiving ocean is not an easy environment from which to successfully hunt. Over generations, Inuvialuit have refined the beluga whale hunt through trial and error, adopting new technologies, and teamwork. According to the beluga hunting guidelines in the Aklavik Inuvialuit Community Conservation Plan (2008), no individual is allowed to hunt whales alone, and each hunting excursion must include one or more 'experienced' hunters – to be designated by each whaling camp based on general agreement. Participants reinforced these regulations through their descriptions of how they hunt whales.

> *"When they go out whale hunting, you have at least two, three in the boat."*
>
> *"Mmhm! One captain and one shooter and one harpooner. When you're two, you're a shooter and harpooner. You gotta use (motions) shooter, then you gotta steer the boat, you can't do nothing else!"*

The importance of a good captain became apparent through a conversation with Judy Selamio, when she reminisced about a particularly successful hunt in her younger days. Everybody who was part of the whale hunt that year went home with a whale due to a very experienced captain.

J.S. *"You can only do that to the whale if you have lots of whales because some people use that white thing too for just put it in uqruq, you just put it in little squares and just put it in uqruq. It's a real delicacy. It's most often, only if we have lots of whales, but at that time, […]'s father was captain so he used to get 15 whales or 20 whales, we all went home with a whale."*

E.W. *"15 to 20 whales, in how long a time period?"*

J.S. *"From June and July."*

Several participants who had many years of experience hunting whales also described the importance of harpooning whales before shooting them, justifying this tactic by saying it was 'how they were taught' and describing how it reduced the chances of losing a whale by having it sink or swim away in pain while wounded. One older participant emphasized not only harpooning the whale first, but also the critical importance of ensuring his equipment was in working order and that the harpoon was in fact stuck in the whale before pulling it in.

> *"I think that if you learn it right to go out hunting, you do things right, harpoon it first! We always harpoon it first. Cause you don't wanna, you know, cause if you shoot them first, you could just shoot them crack shot, one shot, you could let them sink, they sink and there, you wasted whale! It's better to, you know, always check your equipment. Make sure your harpoon is good and everything. And once you harpoon, like, when we harpoon it, we always make sure the buoys well, make sure if you hold it for a while, see if you get tension, and if you get tension, then they let it go. And we know that it's in there now. Cause sometimes when you harpoon it, you get the tension, it comes off. You see, so you lose it, you have to make sure that it's inside the whale and it's ... this way when you could pull it back up"*

Through both conversations in daily life and by listening to people in interviews, an emergent theme of watching and learning how to harvest and prepare whales from older, experienced individuals became quickly evident. All people interviewed said they learnt how to hunt and work with whales from parents, grandparents, family or kin. Many participants also emphasized that there was a critical period of 'inactivity' designated simply to watching and learning, with some participants even saying they "weren't allowed" to hunt or work with whale while certain Elders were around. When sharing how she learnt how to prepare whale, Renie Arey supported this frequently-shared comment.

> *"I never really worked on muktuk growing up because my grandmother. I always looked at my grandmother and how she prepared her stuff. I watched and learned."*
>
> \- Renie Arey

Traditionally, only men are allowed in the boat to take part in the hunt, and some even said that it is bad luck for a woman to be in the boat. Instead, women wait on shore, ready to help drag, butcher and prepare the whale when it is landed. Women have to ensure the 'stage' – a structure of logs designed to dry out the muktuk while keeping it clean and cool – is ready for when the whale is butchered. This sequence of events is what one participant explained while describing Inuvialuit whaling practices.

> *"Yeah, you have to build up your stage, you have to lay out your logs, you have to have all that prepared before you go out and get your whale. Because you're not gonna leave your whale laying there and everything! You gotta have some place after you butcher it. So, you lay out the logs and you build your stage with a rack. And then once you get your whale, while you butcher it, you pull it off, you put it down. You take your meat from, you know, the stomach, around, and on the back part… You take all that meat and lay it on the logs. Make sure it don't get sandy or anything."*

3.12.3 Timing of the Beluga Whale Harvest

As beluga whales migrate through from the Chukchi and Northern Bering Sea through to Kugmalit Bay (and beyond), they pass by Shingle Point and the Western side of the Mackenzie Estuary in vast numbers. It became apparent throughout the course of the interviews that timing of the whale hunt was of utmost importance due to multiple factors: the beluga's migration from west to east, air temperature for food preparation, ice presence, size and quality of meat, and storms and winds. Different time windows were identified and prioritized, each with their own rationale behind the preference.

Some participants were of the opinion that the earlier they could harvest whale, the better their chances were of landing one. Some participants said they went to the coast as soon as whales begin passing through Mackenzie Bay and Shallow Bay, describing how whales often arrived in large numbers (sometimes close to the shore), their route dictated by open water, or leads, through the ice. Several participants explained how these leads could make is easier to control, enclose and successfully land whales due to the narrower space in which to hunt large numbers of whales. Brian Elanik commented on how the ice used to help people hunt whales, saying it kept the water calmer.

> *"Oh yeah, there's no ice, and... the ice and the... that's what usually helped us hunt whales, is the ice. It kept the waters more calm-like. That's why you went out in 10, 15 km per hour winds. Even that was pretty bad because the ice was already starting to disappear. The ice actually helped us, used to help us. Now it's all open waters and it makes it harder to get out."*
>
> \- Brian Elanik

Danny C. Gordon was adamant about hunting whales in June and early July for the above-mentioned reasons, also stating that temperatures early in the season were ideal for muktuk preparation.

D.C.G. *"Yeah, if people want to get a whale, they gotta get down there in June."*

E.W. *"Down in June, and would other times be okay to hunt whales? Because I heard some people say they like waiting for the whales to be fatter, coming back along."*

D.C.G. *"No! Well, September, cooler, if you get a whale, it's not going to spoil. You don't have to rush! It's actually cooling off and sometimes freezing."*

A.C.G. *"Just about now, it's too hot."*

D.C.G. *"September, yeah! Hot weather like this, not good for whaling. Not good. But anyways, it's... I think I need to make a suggestion, you know if people wanted to*

> *whale. Say to the HTC of Aklavik, 'Hey! Go down June 20th. You're gonna harvest ten whales.' Because the last ten years, the two... I think two whales caught. And that's not enough for the family! Everybody is going to be buying whale muktuk from Inuvik!"*

Several participants said that July was the best time to get whales, with many people commenting that they would hunt while they were at the coast performing other harvesting activities such as fishing for char and herring, hunting for caribou, or collecting berries such as *akpiks*, as listed by one Elder.

> *"From July to end of August. We go whaling and hunting for caribou. And picking berries just for fall. And we get Arctic Char and dryfish."*

This ensures that, regardless of whatever success they may have with the whale hunt, people can keep busy with other tasks and return home with some food. Another participant described that they would always hunt whales in mid-July, which is peak season for time spent Shingle Point and other coastal camps.

> *"So, you said the best time to hunt beluga in the season is... what, like what time would you say then?"*
>
> *"Mid-July."*
>
> *"Mid-July! At East Whitefish?"*
>
> *"Yeah, middle of July, yeah. That's how we used to always hunt when we were down at Shingle. Was in mid-July to end of August."*
>
> *"Huh! Okay, and the whales are still coming through then?"*
>
> *"Oh, always! They're always there, all summer they're there. They're there right until September. You see them all the time, yeah."*

Although hunting beluga whales later in the season wasn't often mentioned in interviews, a few Elders noted that August and September were their preferred months to harvest whales. Their reasoning behind this preference is that, by harvesting whales late in the season, their returns are greatest with thick, rich and high quality muktuk. This is due to each individual whale being substantially fatter from gentler summer conditions and extensive feeding on oil-rich oceanic fish. Some Elders such as Annie B. Gordon exclaimed how delicious the late-season blubber was in comparison to other months, while another participant highlighted how late-season hunting was preferred specifically by Elders.

> *"Oh my gosh! One time they got whale… just so thick blubber! And he said it tastes better. I think that's why some of our Elders long ago used to just purposely stay down there for the time to get that. Just like getting that caribou during the fall time, huh?"*
>
> - Annie. B. Gordon

> *"Elders, they usually go for them when they go back that way, they usually try to get them in August because they're pretty fat with fish and all that, they've been eating all summer."*

3.12.4 Preparation Techniques for Beluga Whale Harvest

Beluga whales offer a variety of country food due to them being such a large animal with diverse parts. Major uses of the whale for consumption are *muktuk* (the white skin with the first inch of firmer blubber attached), *mipku* (beluga muscle made into dry meat), *uqruq* (the blubber reduced to a liquid oil) and *qillitaq* (*mipku* soaked in *uqruq*). *Uilaq* (raw flipper and tail muktuk) was also mentioned as more of a special treat, as well as *tibliqsiaq* (aged, strong muktuk). While *muktuk*, *mipku* and *uqruq* were commonly prepared and consumed by participants, *uilaq* and *tibliqsiaq* were often associated more with Elders and older methods of preparation. Elders often spoke about *uilaq* as the best part of the whale, such as Gil Kogiak, who said it was his favourite food out of all country foods. One younger participant said their favourite part of the whale was *tibliqsiaq* but justified their fondness for it because of their exposure to Elders growing up.

> *"I grew up with the Elders mostly, so I like the really aged, the really strong stuff that will do a number on the stomach."*

Throughout the course of the interviews, some participants emphasized that they have very physical cravings for muktuk, that they can't go without it and that it is a critical part of their yearly country food diet. One participant compared their cravings to being 'thirsty for water', saying that when they get that craving, they just need to have it, as their 'mouth is watering for fresh muktuk'.

Beluga whales, being such a large animal, can provide a sizeable amount of food to those who harvest it. However, being out on the land with no electrical cooling appliances and such a large amount of meat required specialized preparation techniques and deep knowledge. Several participants described in detail the steps they undertook to prepare an entire whale on the land without any electricity, demonstrating confidence in a complex technique passed down for generations. Dean Arey, who remains an active beluga whale harvester to the present day, concisely described every step of muktuk preparation on the land.

D.A. *"Yeah, it's not an overnight... you know, after you get it, you gotta cut it up, let it dry for a day or so. Then you gotta wash it, hang it, let it dry again for another couple of days, that's all weather permitting. And then the cooking takes a good day to cook. And you can't cook it five minutes, you gotta wait - slow, simmer, boil. And it's an all-day cooking. Not a one-hour thing and you're done. It takes a whole day to cook a whole whale."*

E.W. *"Hmm. So, a lot of patience and attention."*

D.A. *"Patience! Yeah. Attention to the muktuk and that. And after you cook it, you gotta let it cool off. You can't just pail it and put it away. You gotta let it cool off overnight. And once it cools off and all the water drain out of it, you gotta pail it after that. Then you put it in a cool place, then you bring it to town, it's lots of work! It probably takes ten days just to do a whale! It's not two-day thing. It's about a ten-day process where you gotta... lots of work."*

Renie Arey also described with meticulous detail the methods for preparing beluga muktuk, emphasizing the importance of letting the muktuk get dry and start curling, but also to not let it get too dry and hot so it spoils.

> *"Yeah, and then you hang it and you gotta watch again how many days, depending on how the sun is, you gotta touch the skin, the skin part here. If it's dry, it's good. Some days, it's gonna be too hot, so you gotta really watch it. It might dry up right next day. [...] And if it's dry, then you have this... we used to have 45, and then you put so much water in, and when it starts steaming, then you gotta make sure your fire is slow. Slow your fire down. And then you start putting in your... the ones on the slab like this, you take ... cut so much off to cook in there. You cook it for two hours, slow cook for two hours. You keep turning that with big stick, you keep turning every 15, 10 minutes, keep turning it. That way everything is evenly cooked, then in two hours, if you just put your knife into that like this... it should just go in no force or anything."*
>
> - Renie Arey

Elders spoke about the importance of ice houses in preserving meat harvested on the land. Annie B. Gordon described how they would store all of the muktuk in large barrels so they stayed fresh throughout the summer months.

> A.B.G. *"They put them in the 45's and they haul it back to the Delta wherever the camps are, and they dig a hole in the ground and they put their 45's in there and they that's their ice house for the winter."*
>
> C.K. *"They dig the holes in the ground?"*
>
> A.B.G. *"Yeah. They dig it deep and then they put canvas, they put whatever sticks and that and then they cover it up."*
>
> C.K. *"Keep it out of the sun?"*
>
> A.B.G. *"Yeah. Then the muktuk stay fresh all the time. All at different places."*
>
> - Annie. B. Gordon

Although *muktuk* was stored in barrels, many participants specified that the cover for the barrels has to allow the *muktuk* to breathe – an airtight seal will result in 'poison'. Renie Arey took care to emphasize the danger of improperly storing *muktuk*.

> *"Tarp is poison. Yeah, canvas is good yeah. Yeah, it's gotta breathe. You can't just put them in five gallon and just air tight it like that, you gotta make a hole in them so the air could circulate in there. Cause if you just put it in like that with no hole, you're causing it to... to spoil."*
>
> - Renie Arey

In addition to cool and aerated storage, another main point that participants highlighted is how critical it is to drain all of the moisture and blood out of the *muktuk* before cooking it. Several people emphasized that blood would spoil the meat and expressed wariness about bloodshot *muktuk* if it was prepared by somebody they didn't know or trust. Botulism was a topic of concern that came up among many participants and definitely is on peoples' minds when they prepare their *muktuk*.

> *"Drain the water out, dry it out. Because moisture and water spoils the muktuk. That's why they dry it for a day and a half to two days. Yeah. In a hot day, you have to protect it a little bit because the sun can damage and spoil the muktuk. Botulism is what happens, you gotta be careful."*
>
> - Danny C. Gordon

> *"What's passed on from my parents, and, yeah it's been passed on. And they watch how we cook the muktuk and prepare it too. We tell them why too, because, you know, botulism. You gotta watch botulism and that, huh? It's a silent killer, you know. You know, when you prepare food like that, it's very dangerous if you make mistakes, and especially when the sun is hot and everything."*

Danny C. Gordon also shared the importance of *uqruq* as a liquid in which to preserve raw muktuk and other meats. When describing different preparation methods, he spoke about one method which consisted of cutting the muktuk into slabs after blood drained out of it and storing it raw in five-gallon pails for storage until the time came to cook it. This method, much faster than the traditional method of cooking the muktuk on the land, is sometimes preferred by participants should they not have a long window of time to commit to preparing the whale, however, Danny cautioned about proper storage techniques, saying that *uqruq* was needed to keep the muktuk from spoiling should it not be frozen immediately.

> *"If you don't want to cook it! But then, you gotta have some uqruq or fluid in that, because when they bring it, they freeze it right away so it doesn't spoil. If you're*

> *gonna keep it out there for a couple weeks, you need to have fluid in there. Uqruq and stuff like that to preserve it. If it doesn't have stuff like that, it gets mouldy."*
>
> \- Danny C. Gordon

As with many traditionally harvested animals, certain parts of the animal are more culturally meaningful or have specific actions associated with them. One participant spoke about how the tail and flippers of the whale were usually given to Elders, as they were the choice parts of the whale. In conversation, several Elders agreed that *uilaq* (flippers) is the most delicious food from the whale and would express delight at eating it.

> *"Are there any culturally significant parts of the whale? This is something that has been recommended to me to ask."*
>
> *"Probably the tail and, I don't know, I think the tail part to recommend to the Elders or something like that?"*
>
> *"Okay."*
>
> *"Flippers, they usually take the flippers and give them out to Elders or something like that."*

Annie C. Gordon recalled that her mother used to prepare the whale's head (*niaquaq)* for consumption, talking about the whale's melon (which is primarily made up of fat) and how it would become very rubbery when cooked.

> *"Right here is rubber. When you cook right here, you know it's like this? The whale, it's got a big bumper. It's just like rubber when you cook it."*
>
> \- Annie C. Gordon

There were uses of whale beyond consumption for food, with some participants describing functional and cultural uses. A few participants described how whale teeth were fashioned into jewelry and carvings.

> *"Take the meat and the muktuk, that's all huh? Maybe used the teeth for carvings, for necklaces! I used to see that Elder made a little bit of carving for the teeth. Earrings, necklace. Whale necklace from the tooth."*

When talking about carvings from the jawbone and teeth, one participant strongly emphasized that this was an important cultural practice that they still highly valued. They addressed some of the beluga health monitoring programs, and how, for aging, the whales' jawbones would be taken to the laboratory for testing but were never returned to the hunters. The participant highlighted this as a scientific practice that should be improved upon, as it is extractive and takes a culturally valuable piece of the whale from the hunter, never to be seen again.

Another participant who has worked with whales their entire life recalled that they saw people in the past using whale back bones for owl carvings but commented that they personally wouldn't use bones to carve because it took too long for *uqruq*, the whale oil, to seep out of it.

> *"I dunno, if somebody wanted to do carvings with the bone, but I never did see it, because it'll take years for that oil to come out of the bone, yeah."*
>
> *"It takes years to what?"*
>
> *"For that uqsuq to come out of the bone. But I seen some carvings with that backbone and all that. Making little owls out of them."*

Judy Selamio remembered that her uncle carved whale teeth for jewelry and also used the jawbones as toys for children.

> E.W. *"How about the jaw bone? I heard from some folks the jaw bone was also used... have you ever used jaw bones for carving?"*
>
> J.S. *"My uncle does! My uncle used the teeth and they make necklace out of the teeth, they make jewelry out of the teeth. They used the jawbone and they make a sled and they put sticks across and they make a little sled and my grandma used to put a couple of dolls on there, just sitting on that whale jaw."*
>
> \- Judy Selamio

When thinking back to other uses for whale parts, Judy Selamio also described how whale lungs were used to store and carry items such as berries and rhubarb then saved in ice houses until they were needed.

> *"And whale lungs! We use whale lungs for berries and rhubarbs, anything we can we store. Then we make ice house, and we make ice house the size of this table right here. And we just cover our food in there to keep it frozen."*
>
> - Judy Selamio

Dean Arey also remembered using whale stomachs to store food, commenting that hardly any part of the whale was wasted.

> *"Like hardly anything is wasted! Like, long ago, they used to take the stomach out and they used to make balloons out of them! And after they let it dry, blow it up! They let it dry like that. Let the balloon dry and the stomach. Then they used to put berries, and that, and they used to ... long ago they used to do that. I never seen anybody do that anymore."*
>
> - Dean Arey

Another part of the beluga whale that was used in peoples' memories but not in the present day was the white beluga skin, which is enormous when stretched out and is incredibly waterproof and durable. Several Elders described how the skin was used for *qanniq* – waterproof soles for boots – as well as for sails and tarps. Annie B. Gordon shared a humorous story of when she was introduced to the uses of the white beluga skin and how the Elders taught her in her youth.

> *"An Elder was talking to everybody, all the Elders, all the women and the girls, they talked to them and told them because it's the first time I'm ever down there and I'm trying to do things with them (through my interpreter), and she said they could give me first choice to choose whichever skin I wanted, and there's LOTS of skins, enough for everybody that ... I don't know when they get those whales! I don't know how they do it! And so, I look, and she says 'Any one!'. It was my choice, so I look around and I see one… not really big, and you know just a good size, and I think I'll just take that one and give it to my mother-in-law, and I told her to point out which one I wanted. And they all started laughing, so I got*

> *scared, I asked the interpreter, "Why are they laughing? Am I doing the wrong thing?", and she said "No, that's the one everybody got their eyes on!" (Laughter) I didn't know! So, after when we get the skin, we just tie it with a small rope where the pegs are, just tie a small rope there, and we put it on a pole, and we put it up so the wind and sun whitens it. Just gets really white when you leave it in the sun and wind. And I gave it to my mother-in-law, and she had shoes out of it, my father-in-law had shoes out of it, and my husband had shoes out of it, so everything else she keeps because the shoe makes nice white soles."*
>
> - Annie B. Gordon

3.2 “Everything is changing so much!”:

A perspective of changes and their impacts to the beluga whale hunt in Aklavik, NT

Research Objective 2:

Examine local understanding of social and ecological changes affecting beluga hunting

This results section aims to capture Aklavik’s perspective of changes affecting community members’ time on the land and harvesting cycles, with a specific focus on how these changes are impacting the community’s beluga whale harvest. It addresses the second research objective, which is to *examine local understanding and scientific research of social and ecological changes occurring in the region.* During the 32 interviews, participants mentioned changes that could be classified broadly into either environmental or social categories, with major themes emerging from each category as the interviews progressed. These emergent themes highlighted the breadth of change affecting the Aklavik beluga whale harvest, and also demonstrated how interrelated all factors were.

Figure 8 is a visual representation of how this section will be structured. Although changes are presented in categories, these themes are designed to tell the story of change through Aklavik’s voice by letting one theme lead into the next.

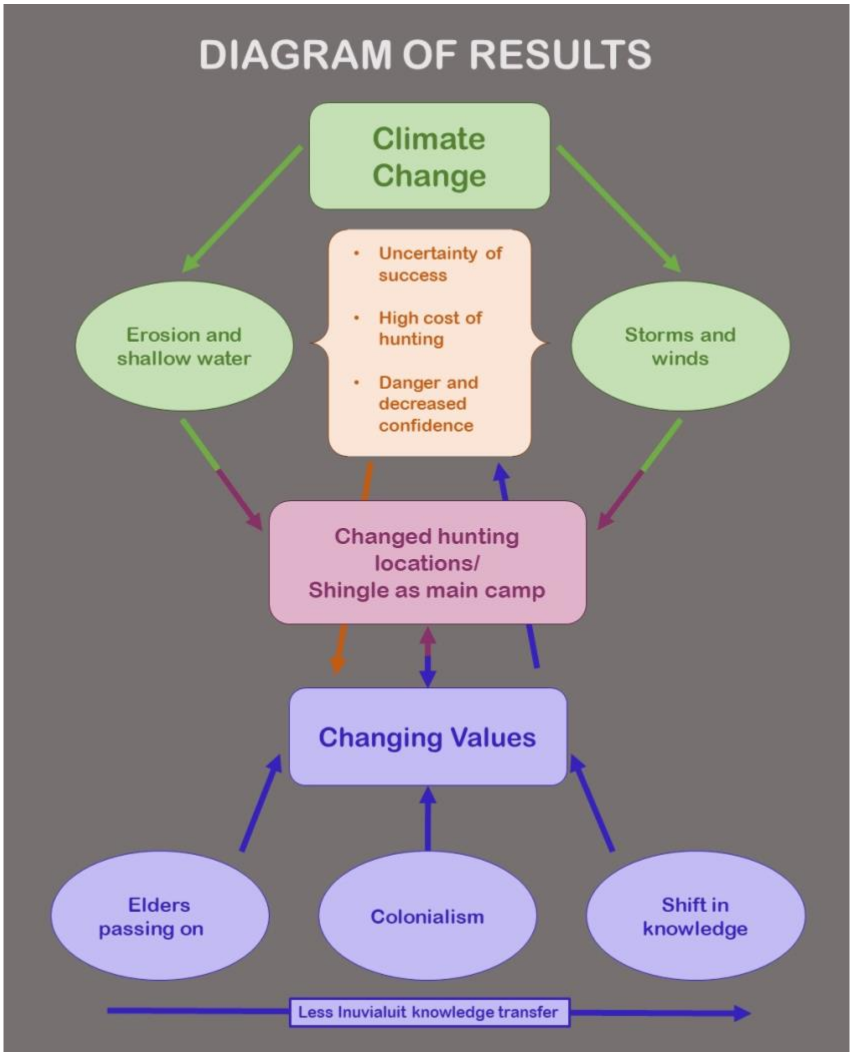


DIAGRAM OF RESULTS
Climate Change
Uncertainty of success
High cost of hunting
Danger and decreased confidence
Erosion and shallow water
Storms and winds
Changed hunting locations/ Shingle as main camp
Changing Values
Elders passing on
Colonialism
Shift in knowledge
Less Inuvialuit knowledge transfer

Figure 8: Simplified flow chart showing connections between changes affecting Aklavik's beluga whale harvest

One saying that came up often among participants, especially Elders with memories of 'long ago', was that everything was 'changing so much', or 'changing so fast.' A complex interplay between multiple stressors on the beluga whale harvest, both environmental and social, emerged as an overarching narrative as each participant shared their stories. While mulling over the future of the beluga harvest, Michelle Gruben said a simple comment with resounding effects and deep meaning,

> "*I don't know, the times are really, really changing out there. Not only climate change-wise, but traditionally-wise.*"
>
> - Michelle Gruben

Although the focus of the project was to learn about Aklavik's reduced beluga harvest, due to the holistic nature of living on the land, an immense array of different experiences and observations influenced individuals' perspectives. Annie B. Gordon, an Elder with vast familiarity of the land over decades, expressed concern over the increasingly unpredictable weather patterns and their social implications; youth and inexperienced people were now getting stranded when bad weather would blow in suddenly.

> *"They don't notice all that anymore, since there's so much climate change started! Everything changing! And that's one of the things that our younger generation don't know. Sometime they just take off like that, and they get caught in the wind and there is no place for shelter."*
>
> - Annie B. Gordon

Another Elder who still practices the seasonal harvesting cycle and remains an active leader on the land was discussing the effects of climate change and how it had resounding effects environmentally.

> *"When you go trapping winter time too, used to be old ice when you first start going down that way. No more old ice, even on the shore in the fall! Just pile up ice, fresh ice, that's all we see now. Everything changed lots."*

3.21 CHANGING CLIMATE

A warming Arctic has generated countless research initiatives across the globe, with scientists exploring every aspect of the shifting climate and its environmental effects. However, the human side of climate change is also of great significance, as northern peoples remain so closely tied to their environment. For people in Aklavik, the impacts of climate change are never far from anybody's thoughts, and a plethora of observations were shared by interview participants throughout the course of the research engagement in Aklavik. With generations of knowledge and observations of the natural world around them, it is not surprising that participants listed environmental changes with sharp consistency, allowing for recurring themes to easily emerge from the results.

One environmental change mentioned by some participants was the decreased presence of snow along the coastline during the summer months. Dorothy Ross used to bring her children to Running River during July and August and made sure she also brought a tube to keep them entertained, as they loved sliding down the slopes on the snow. Shayla Arey, a young woman who has been going to Shingle Point her entire life, described how in the last five to eight years, there has not been snow along the banks of the harbour. Michelle Gruben mentioned that she went down to Shingle Point on July 19th this year – roughly ten days later than her usual arrival – but that she immediately noticed how little snow there was compared to previous years.

> *"Usually there's snow all along the side of that hill across the bay! We used to go and get snow, but this year, I never noticed. Used to see it, like see it from where we are at the point. There was nothing! First time ever I never seen that much snow. Might have been a little patch, but little patch is nothing compared to what we see."*
>
> - Michelle Gruben

Jerry Arey, an Elder who has been going to the coast his entire life, described how Shingle Point no longer has snowdrifts in summer. He also shared his observations of how water at Shingle Point is warmer than ever before with all of the Delta running into the ocean, resulting in higher silt content and warmer temperatures. Observations of warmer temperatures both in water and on land were frequent, and not only restricted to summer months. Dean Arey, an active harvester who visits the coast every summer and grew up on the land, stated that,

> *"All us too, we see it's milder winters. It's not like it used to be… 40, 50 below all the time in the '80s. And winter like - December, January, February - used to have long cold spells of 40, 50 below. And now, you're lucky to see a week 40 below! That's as cold as it gets. And it doesn't last long, and we... the past two winters it was really mild. 20, 30 below and that's about it. And that's pretty mild, not like when I was growing up, that was 40 below, cold and trying to trap."*
>
> - Dean Arey

Dean Arey also described in great detail the seasonal hunting cycle of Aklavik's Inuvialuit harvesters, and was very insightful about seasonal changes since the late 1980's and how they affect the timing for hunting certain species and for travel. When he was asked about when freeze-up occurred in fall, he said,

> *"October. First week of October. It's getting longer, used to freeze up in September long ago! I remember in the '80s and... then you notice the falls are longer, and the springs are quicker, and it's all global warming. It's a big thing huh? I notice that every year. Like ice is going out May 19th, when the ice is moving. That's our earliest! And it's getting earlier and earlier."*
>
> - Dean Arey

Shifting and disappearing sea ice was mentioned by numerous participants as a big change noticed in very recent years – just within the last decade. One participant recalled how they used to see ice all summer and commented that the sea ice patterns have changed. Another participant described how there isn't as much ice as there used to be long ago on the coast. When describing changing ice conditions along the coast, one participant said,

> *"Conditions? Well, yeah, the ice has been moving a lot earlier than usual. And even at Herschel for me, being at work, we used to be able to snowmobile right through late June, and the latest I ever done it was July 5th … was my last day in 2010, I believe. […] Yeah, you can't do that anymore. Mid-June, you're boating."*

Access to the coast has become earlier in recent years due to the earlier ice break-up, which participants commented is generally about two weeks earlier than what they remembered. Jordan McLeod, who visits the coast every summer and often ventures out to see when the ice clears up, mentioned that there is roughly a two-week range from year to year with breakup. This year, he noticed a later, more regular breakup of June 24th, but the previous year, the way was clear by June 12th. This observation was supported by an Elder's comments describing accessibility to Shingle Point and how it has changed in their memory.

> *"Well, long ago, even end of June or something, first of July, even long ago you can't even get to harbour, I mean Shingle Point! You gotta land outside! Now it's earlier and earlier."*
>
> *"Wow. Things have changed, hey?"*
>
> *"Everything changing."*

Renie Arey, another Elder, was sharing her spring activities on the land and described how she had to alter her timing due to the earlier spring and warmer temperatures.

> *"Yes, they are following the everything is even... even us, when we used to go out on the land, we used to go in May. May 15th, May something, around that time. We stay a day maybe two, three weeks, sometimes a month. And this, now, the following two springs maybe, three springs now, we been going out in April. Because of the water, everything melting so fast. So that's a big difference there again that we're have to go out a little earlier than usual."*
>
> - Renie Arey

Another Elder also described how the physical aspects of the ice are altered from what they used to be, talking about how in their memory, all ice in the winter was composed of old ice. Now, they only see new ice when they are out trapping. They also identified another change in the physical properties of ice, saying,

> *"Even when I went down, I never - I see ice, small chunks only! No solid ones. We used to see solid ones when you go further out. Now it's chunks. (Laughter)"*

Several participants described how ice could be seen from shore throughout the entire summer in their memories, but no longer could be seen at all. When flying into Shingle Point on July 18th, I scanned the horizon, looking for ice, but could not see any whatsoever. Brian Elanik, who used to visit Shingle Point regularly, told me a story of how he went swimming on his 21st birthday, which was only 5 years ago, on July 27th, with ice in the water.

> *"Same with at Shingle Point, there used to be ice down there. And coming back, there was still ice floating around. I mean, I told you the story where I was swimming when there was still ice in the ocean, and everything. That was on my birthday, actually!*
>
> - Brian Elanik

3.21.1 The beluga harvest in an altered climate

It is no surprise that a shifting, warmer marine environment brings about changes to its inhabitants. As Billy Archie, one Elder with a vast knowledge of the Beaufort environment shared, beluga whales migrate from the Chukchi Sea all the way to Paulatuk or even to Ulukhaktok. The final destination of Paulatuk is a new reality and has only occurred in recent years, but Renie Arey linked this extended migration to a shifting climate.

> *"Mmhm, cause we, the peoples in Tuk, even them, they notice the whales are coming in earlier. It's slowly going more further that way. Usually they hang around and have their young ones in this area, they seem to be going further to Paulatuk and them. They never used to get a whale them too, now they're starting to get whales."*
>
> - Renie Arey

The cause of this altered migration was theorized by a few participants as being due to the earlier break up, allowing the whales an earlier departure date and access to their birthing and feeding grounds, and permitting them to travel farther. People with years of observation at the Beaufort coastline mentioned that whales wait for the leads to form in the ice so that they may begin their journey East. One Elder described his conversation with a local resident who was flying around the Beaufort coast during the breakup period:

> *"All open, all the time. Early even May, or something. He said open water is not too far! […] And June, early June or something, he could see whole open water, but it's all at this side. He said open water and all that, he could see whales! Waiting for open up. And head toward the land."*
>
> *"So, they were already waiting? Wow!"*
>
> *"Yeah! I mean, that's what we always hear, as soon as crack, they said, long ago, whales travel. Now, [he] told me too, whales out there, seals. Everything is here, not very open, but just can't get to the shore. There's ice on it yet. Once it crack, he said they start traveling. He know where it's opening I guess."*

The knowledge of seasonal timing of the sea ice breakup is something that was passed on through generations and allowed Aklavik residents to undertake long journeys to the coast with the confidence that, upon their arrival, they would encounter what they had planned for. However, the fluctuating breakup and the effects on the beluga migration have resulted in missed opportunities for some peoples' preferred hunting times. One hunter, Brian Elanik, described how in the past, using the sea ice as an ally in the beluga harvest allowed for safer hunting conditions.

> *"Oh yeah, there's no ice, and... the ice and the... that's what usually helped us hunt whales, is the ice. It kept the waters more calm-like. That's why you went out in 10, 15 km/hr winds. Even that was pretty bad because the ice was already starting to disappear. The ice actually helped us, used to help us. Now it's all open waters and it makes it harder to get out."*
>
> - Brian Elanik

With resonating effects across physical, biological and even spiritual realms, climate change and its resulting impacts were discussed by many participants with heavy hearts and apprehension for the future and what it may bring. One Elder, Annie B. Gordon, shared teachings she received from the Elders of her youth. These teachings were charged with emotion and touched on the deeper, more personal social reverberations that dramatic changes to Inuvialuit livelihoods would bring.

> *"I was small, I always be around Elders. I always lay around and watch and listen to them. One time about eight old ladies were sitting around and they start talking about the future. Somebody said… you know they call you grandchild all the time if they want to talk to you… they said, 'You're drinking water from the river. You get water from the lake. You get water from the creeks. Someday you're gonna be buying that water.' I didn't know what they were saying. […] Yeah, I never thought, when they were telling me that, and you know when they tell you that? They cry. They're crying while they're talking to you. […] They knew! And then, everything is gonna change. Even our food, even our animals are gonna be different. And you gonna see different... you know... they say different animals! What they mean by that? Now I see it all happening. And, they tell me, if God gives you good long life, someday what we tell you, you're gonna share it with our younger generation."*
>
> - Annie B. Gordon

However, misgivings were almost always accompanied with a certainty in Inuvialuit resilience; a quiet confidence bringing with it a grounded identity among people who have lived in a shifting and extreme environment for millennia. As Michelle Gruben stated with clarity and insight; even though harvesters may have to adapt and change their timing to accommodate a changing climate, that does not equate to Inuvialuit stopping harvesting altogether!

> *"Us being harvesters on the land, we're the ones dealing with climate change at such a fast, fast pace. We have to adapt! Cause we see changes happening faster than wherever in other areas of Canada. But I think we're feeling it on a bigger scale. And we have to change our ... sometime our way of harvesting... like not change our harvesting ways! But change the times that you're going to go harvesting. Cause the climate change is having such an effect on our way of life."*
>
> - Michelle Gruben

3.22 WIND, WEATHER AND THE CONSEQUENCES

Although climate change was presented as a category, it was intended as a general introduction to more specific environmental changes identified as direct factors influencing the reduced beluga whale harvest. With climate change, participants have observed more frequent and intense extreme weather events, including strong winds and storms, that are also more unpredictable. These conditions affect peoples' ability to access the land, making travel and harvesting more dangerous, particularly when traveling by boat during summer months. During several interviews, participants discussed how weather today was much more unpredictable compared to the past, with Elders no longer able to forecast weather like they used to. One young harvester who spent much of his youth learning from Elders supported these observations with this comment:

> *"Also, the weather is hard to judge now. Cause you can hear, if you speak to some of the Elders, you used to be able to judge the weather two or three days in advance. But nowadays, you can't make plans for three or four hours! It'll just change in minutes!"*

Annie B. Gordon was describing how Elders used to read weather and how that changed in her memory.

> *"And it's really hard now to read weather like that now. Even our Elders in McPherson, they look at the sky, they look at the cloud, they look at the sun, there's a mark around the sun that they look at. They don't notice all that anymore, since there's so much climate change started! Everything changing! And that's one of the that our younger generation don't know. Sometime they just take off like that, and they get caught, they think they could beat it. So, you gotta watch the sky, George always tell us to watch the sky."*
>
> \- Annie B. Gordon

Nearly every participant mentioned changing wind and weather conditions as concerning changes affecting their time on the coast. Common observations included: periods of ideal weather for travel on the ocean were rare and short-lived, bad weather could pick-up without warning, and getting caught in bad weather was dangerous, unpleasant and time-consuming. Annie C. Gordon, an Elder who grew up on the land and travels to the coast on an annual basis, revealed a story of an extreme weather change at Shingle Point and how quickly the ocean turned treacherous.

> *"Ah, you can't depend on the wind now. You know one time we were at Shingle Point, it was blowing North, okay? Blowing North! And all of a sudden it blows South. It just changed all at once and then big waves!"*
>
> - Annie C. Gordon

An Elder who travels to the coast every year described a recent situation where friends had to delay travel and camp out in a sheltered area to wait out bad weather that came up suddenly. These delays are not only costly for time, gas and supplies, but can also be traumatic, as the Elder recounted.

> *"Yeah, well, sometime if you're gonna turn back, it's too far to get back, and if you go, you gotta turn back! Even the other day, [...] and them, they gotta go to Qutiichuuraq, it got too rough on them. Closest way back... you don't wanna bounce all the way to Shingle Point. Even that little boy was crying."*

During my time spent at Shingle Point in July 2017, I personally witnessed how quickly weather could change, how treacherous the ocean became during high winds, and how much it affected peoples' ability to engage in seasonal harvesting and travel. The Shingle Point games, which ran from July 21st to 23rd, are a major event for Aklavik, drawing many residents to Shingle Point with games, prizes, feasts, and socialization. However, during the evening of July 20th, after a warm and calm day of fishing, a sudden and powerful storm that lasted two days hammered the point. In the space of just twelve hours, the temperature dropped from 21.9 degrees Celsius (at noon on July 20th) to only 4.5 degrees Celsius (at midnight on July 21st) and continued around that mark for the next 24 hours with sustained northwest winds (Environment Canada). In addition, the storm stranded some people traveling to Shingle Point for the games, forcing them to seek shelter at cabins located in the Mackenzie Delta and wait out the weather. High winds, up to 52 kilometers an hour, coming from the north-northwest created rough, rolling whitecaps, and large sections of the beach along the point disappeared under churning water, floating driftwood and other debris. Travel by boat would have been impossible, and people had to rush to the ocean to save their fishing nets as the storm began.

In addition to wind speed, the direction from which the wind is coming also plays a role in peoples' ability to travel and hunt on the ocean. Participants commented that north winds were the most troublesome for ocean travel as they often drive the waves onto the coastline with more force – creating tall, rough whitecaps and hazardous conditions.

> *"North wind, that's the one you can't travel. It was strong."*
>
> *"Because it just pushes you back into the shore?"*
>
> *"No! Too much big waves! Higher than the house even."*

According to Gil Kogiak, west winds come up fast and without warning. Gil is an Elder who experienced firsthand the disaster that can strike if you set out and get hit with bad west winds. He recounted a story of how they got 'swamped' and lost all of their gear, how the boat was filling with water, and how he *"couldn't do anything in that wind."*. The experience and memories stuck with him and have affected his willingness to cross the ocean on the east side.

Winds from the south and east were ideal for coastal harvesting, however, as one participant shared, it doesn't matter from which direction the wind is coming if it is too strong. Michelle Gruben, who annually travels to Shingle Point for summer harvesting activities, shared with me an interesting perspective:

> *"There was this Elder I was talking to, he had gone to Shingle after not being at Shingle for twenty years. He said so much, I mean when we used to go, when we used to go on the ocean side, we would see chunks of ice floating around. And that's when the char used to come because the char would be eating something off the bottom of the ice! So it used to be around Shingle, it wasn't that much, but when you go along the coast, you had to navigate through the ice chunks! But now, there's so much south wind, and that south wind must be pushing those ice*

> *chunks way over. And that Elder I was talking to said he never seen so much south wind in his lifetime."*
>
> - Michelle Gruben

Danny C. Gordon and Annie C. Gordon have a cabin at Shingle Point which is sheltered from the ocean and nestled by the water on the harbour side. They mentioned that northwest winds, which so heavily affect cabins located close to the ocean, do not affect them. However, they described how the land in front of their cabin is being washed away by east winds blowing in through the harbour.

A.C.G. *"Our kids, our children used to play ball in front of us, but the land is getting closer to the house."*

D.C.G. *"Yeah, East wind. East wind."*

A.C.G. *"[Now, they can't play ball in there.]"*

D.C.G. *"[Probably 30 feet] We have lost about 30 feet the last ten years."*

E.W. *"30 feet! So, it's the east wind, then, that chews away."*

D.C.G. *"East wind. The waves coming in and washing it out."*

E.W. *"Okay. And I know the northwest wind is what pushes water."*

D.C.G. *"It doesn't affect us, we are protected from that."*

Wind direction also affects the levels and the turbidity of the water, which then has an impact on the marine species available for harvest. High winds from the north raise water levels in the Delta, confusing animals and sometimes stranding beluga whales in freshwater estuarine water bodies such as Coney Lake and Little Moose River. One participant mentioned that ten years ago, a "big wind" and high water disoriented many whales and they got stuck in Coney Lake. Although these northern winds were noted as treacherous by community members, when beluga strandings occur, they offer opportunities for hunters to gain easier access to the whales, as the estuarine channels are generally more sheltered and shallower than the ocean.

When at Shingle Point, I noticed that on certain days, the water on the ocean side was clearer than on other days. Community members commented that fish followed the clear water and would react by actively increasing their effort in fishing when clearer water moved in closer to shore. One participant, who goes to the coast every summer to fish and sometimes whale, said that whales follow the herring, so if herring are closer to shore, inevitably the whales would also move closer to shore. East winds were noted as bringing ‘dirty’ water and discouraging fish from coming close to shore. Dorothy Ross mentioned that last summer, there was a period of “straight East wind” during prime fishing time, which resulted in less herring caught than usual.

3.22.1 “Mother Nature is Boss”

During interviews, when participants were asked which environmental changes they noticed in recent years, storms, winds and bad weather were all singled out as main reasons behind the decreased beluga whale hunt. Various people mentioned that “Mother Nature is boss” when describing the dangers of traveling along the coast or harvesting beluga and said how critical it is to not rush things, time your travel with care, and plan ahead for safety.

> *“Yeah, that's... you can't do anything if the wind is windy. It's ... Mother Nature is the boss. You can't go against it, you have to be patient with it and wait till everything is down. The wind down and everything, like, taking risks, you're taking risks for your family and yourself trying to be out there.”*
>
> - Renie Arey

One harvester who follows the seasonal harvesting cycle regularly and has great experience and confidence on the land said he would not hunt whales in rough weather. Many participants recalled that the conditions of their last few whale hunts were poor; with high winds, rough ocean, and bouncy waves. When talking about her seasonal hunting activities this year, Margot McLeod said wind was the major factor in not going to Shingle Point.

> *"This year, I never even made it to Shingle. We tried twice but it was too windy so we... so we never got to go down."*
>
> - Margot McLeod

Another Elder who had spent their entire life traveling to the coast to hunt beluga in the summer described how whales would often use the 'harbour side' of Shingle Point (the shallow, sheltered side) as a refuge during rough weather. Despite the harbour side being a preferred place to hunt at Shingle Point, people wouldn't go out to the whales in high winds and a rough ocean.

> *"Plus, it's the wind too, you know. I mean, when it's rough, you could see them go in the harbour, but really you can't keep them. You can't hunt whale when it's rough. You know, you see? The whales, they must be smart too, they know."*

The wind not only creates issues for safety and reliability while traveling on the ocean, but high winds and storms can also wreak havoc even when on land at coastal camps. Several people described how cabins, boats and other equipment was damaged when strong winds pushed waves onto the shoreline. In summer 2017 at down-the-hill camp at Shingle Point, I helped some people clean up wreckage from one of the cabins that was damaged by a high wind and waves, and in fall 2016, the cabin rented by researchers from Fisheries and Oceans Canada completely washed away! These complications are not only disheartening, but they also prove to be costly and difficult to fix, considering that tools and materials need to be transported several hours by boat from Aklavik, which isn't particularly well-stocked with building materials in the first place. Judy Selamio mentioned that at previous camps, she had great difficulty with flooding.

J.S. *"Yeah. We make stage and everything, we had stage there, but it all washed away in that big wind. Even at Koanuk River, that stage washed away where I used to have stage. Just washed away."*

E.W. *"How long ago was that the stage washed away?"*

J.S. *"Gosh sakes, good six, seven years huh? At least around there?"*

E.W. *"And how long does it take to build a stage?"*

J.S. *"It's lots of work! (Laughter)"*

However, more significant than loss of property is the potential danger to peoples' safety. Frequently alluded to throughout these conversations are the elements of risk, danger and unpredictability. While some participants did not explicitly comment how changing weather patterns and increased winds affected their psyche around the beluga whale harvest, there was an obvious emotional impact, with decreased confidence and increased caution. Brian Elanik, a confident young hunter, mentioned that the unpredictable and dangerous winds were one of the main factors in his choice to no longer harvest whales. He fully acknowledged the high risk associated with the whale hunt, saying that the ocean cannot be trusted.

> *"Provides you with the whale, but it'll take your life faster than you can think. Just the way it works now I guess."*
>
> \- Brian Elanik

When talking about the ocean on stormy days, our conversation revealed that not only are erratic weather patterns having an effect on him psychologically, but they also have recently hit that critical limit where he no longer wants to go to Shingle Point.

B.E. *"It's definitely a place where you wouldn't want to be! That's why I quit going to Shingle, it's just… you have no control over when you're coming home. And that's why I quit hunting whales too, it's the same thing."*

E.W. *"No control."*

B.E. *“Yeah. It's just... whatever the weather is, it's just... it's just how it is now, I guess. It's just no control over anything. You can't tell what the weather is gonna be like the next day.”*

E.W. *“And that's changed in your lifetime?”*

B.E. *“Oh yeah.”*

E.W. *“Hmm, that’s crazy.”*

B.E. *“Changed really quick! It was a fierce change, that’s for sure.”*

E.W. *“When did you notice it really starting to get more unpredictable?”*

B.E. *“Two years ago.”*

After hearing him share several harrowing stories of close calls with danger in other hunting situations, it struck home to hear him state that the wind on the coast was too much to deal with, and that he had consciously chosen to give up a pivotal species to harvest because of it.

B.E. *“It's just... yeah it's just way out of whack, that's for sure. But... just quit hunting whale because of the wind and the weather change. Just changes too quick nowadays. Like you could go out, it'll be dead calm. And you get out there, start chasing the whale and not even five minutes into the hunt, the wind will be howling in your ear.”*

E.W. *“And then you're just fighting to get back to the shore, eh?”*

B.E. *“Yeah. It's horrible... did that a few times.”*

3.23 CHANGING CHANNELS

To access the Beaufort coast and its seasonal camps and harvesting grounds, residents from Aklavik navigate through the multitude of channels, rivers, lakes and creeks in the Mackenzie Delta and Estuary. Highly affected by tides, winds and other natural processes, this interface between sea and land is naturally in flux, however, recent accelerated change has created a new reality for Aklavik harvesters. A rapidly warming climate has resulted in a sharp increase in permafrost thaw and subsequent slumping and erosion. In the Delta and along the coastline, this freed sediment quickly makes its way into waterways, altering the course of rivers and channels and creating shallow water along the shoreline. Changing channels affect Aklavik residents in their travels through the Mackenzie Delta down to the coast, and also along the coast, with storms and high winds ravaging the coastline and further exacerbating shifting water levels and sediment deposit. Several observations of changing channels were present in the interviews, with participants describing an array of environmental change contributing to changing channels and shallow water. These include; an increase in mud slumps along the coast, shifting sand bars in the channels, dried out channels/low water, erosion and flooding events. All of these observations were linked as drivers of change affecting the beluga whale harvest in various ways.

Changing channels throughout the Mackenzie Delta have forced harvesters to alter their traditional routes to the coast, often making them take longer detours. One participant, Pat Kasook, mentioned that a shortcut he used to take in Fish River “plugged up” a couple years ago, and that the “bed dried right out”. After turning around in the shallow water, he hit a sandbar. His conclusion after sharing that story was that you “have to know the channel” in order to travel safely. Another participant, Margot McLeod, commented that she can no longer take the same routes as she used to.

> *“Shallow and… you can’t make it where we used to do. We used to make it right up to the Forks in Blow River, and you can’t now, it’s too shallow. Not unless you go around, but… [that is] by the ocean. But we never been in there for years.”*
>
> - Margot McLeod

Brian Elanik described how changes to the river flow are affecting routes to the coast, expressing sadness at the effects the changes are having on subsistence activities.

> *"The access point is too hard to get to nowadays too. The land is changing, the rivers changed dramatically, the route changed a lot. Some places you can't even go to anymore, because the tide is changed and, well the river flow changed a lot. That's a big one, because the channels started to change in the rivers to access the ocean. It's horrible."*
>
> - Brian Elanik

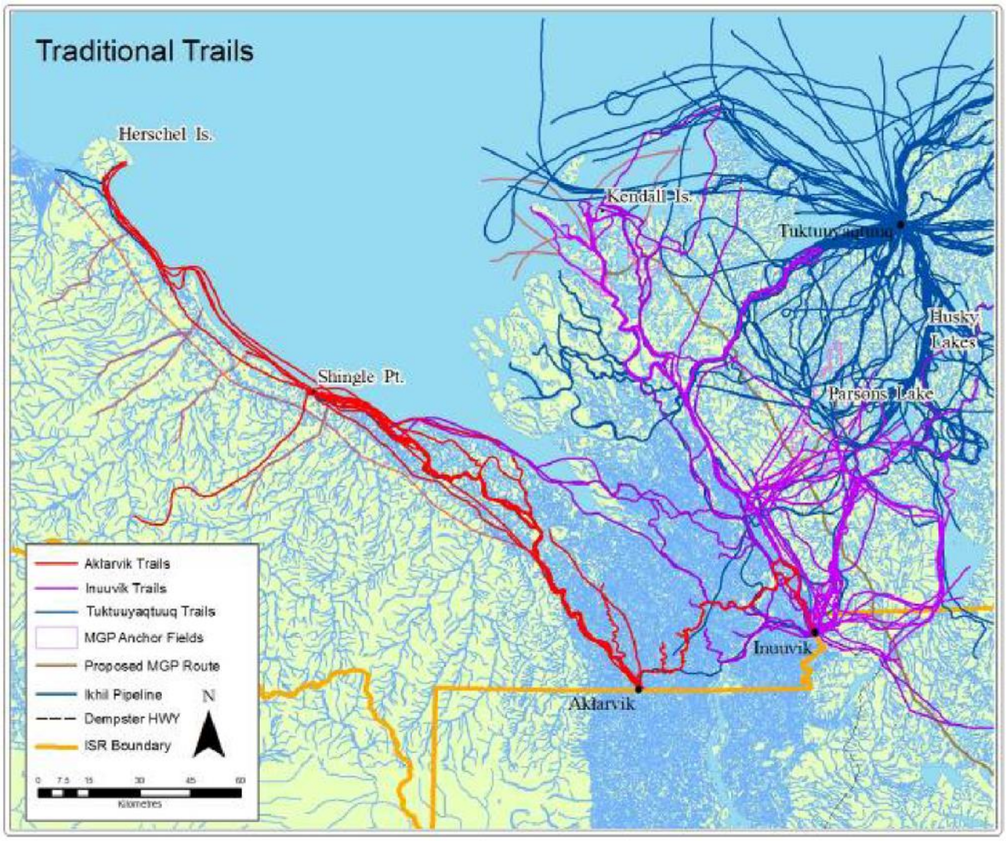

Traditional Trails
Herschel Is.
Kendall Is.
Tuktuuyaqtuuq
Husky Lakes
Shingle Pt.
Parsons Lake
Inuuvik
Aklarvik
Aklarvik Trails
Inuuvik Trails
Tuktuuyaqtuuq Trails
MGP Anchor Fields
Proposed MGP Route
Ikhil Pipeline
Dempster HWY
ISR Boundary
N
0 7.5 15 30 45 60
Kilometres

Figure 9: Traditional trails used by three communities in the Inuvialuit Settlement Region for land-based activities. Aklavik's trails are featured in red. (Inuuvik Community Corporation, Tuktuuyaqtuuq Community Corporation, Aklarvik Community Corporation, 2006)

Figure 9 shows traditional trails to the coastline used by Aklavik community members (portrayed in red on the map). This map supports information obtained from interviews I conducted and also through personal observation in July 2017, when I traveled by boat with local residents from Shingle Point to Aklavik. On our trip back, we were accompanied by another family in their boat, and also saw two other families traveling in their boats on route. I was told by the driver that the route we were using was the only they considered to be deep enough the whole way back to town. He also mentioned that channels and sandbars change every year, and that the first few people who travel every spring report observations and safe routes back to the community, so that others may travel with confidence. During my visit to Aklavik in summer 2018 to verify with the community, the first people to travel by boat to the coast reported changes affecting major routes they used. Two highly used channels, Fish River and Anderson Channel, were too shallow to pass through, shocking residents who encountered them. I was told that these channels were part of the main route currently used by community members for coastal access, so these changes had serious implications. Later in June, with persistently high north winds and many days of rain, water levels once again became high enough to pass through these channels.

Renie Arey, an Elder who has observed many changes to channels throughout her years of traveling to the coast, referred to people communicating changes over radio to other travelers, Renie mentioned; *"Yeah everybody looks after everybody down that way."* Renie's statement was reinforced through many other conversations and actions observed throughout the research engagement in Aklavik. When I anxiously enquired about people experiencing difficulties while traveling, people often reassured me that communication was of utmost importance among family and friends, with marine radios used frequently to share routes and progress. If travelers did not make their expected arrival time, or if there was prolonged silence, their contacts would not hesitate to check on them. This demonstrates a high awareness of safety, reciprocal care to all harvesters, and a unified strength among Aklavik residents. Annie B. Gordon recalled how an

Elder with deep knowledge of the coastline experienced bad wind and waves, delaying his expected arrival time to Shingle Point. Everybody at the point was waiting for him to arrive and were glued to their radios until he showed up in the harbour.

> A.B.G. *"So you know, one time, I could hear him on the radio. And he said, "Oh I'll make it in a few hours." We wait and wait and wait. And it was kinda windy out there. And he said "Have coffee ready", and every once in a while he say something like that. Watching watching! All at once a kid said, "Mom, there's a boat coming." Boat coming! It wasn't going very fast, but still it was moving. Who is that, George? Comes straight across and here it was kinda rough towards Blow River side!"*
>
> C.K. *"Blow River is always bad, just that one spot. It would be nice and calm at Shingle Point, other side of Blow River, it be calm. But just at Blow River, huh? Where it comes out."*
>
> A.B.G. *"Yeah. Where it come out. That current huh! But he was way out, he wander around, come in like that. Just dry!"*
>
> C.K. *"He knows, huh? He knows!"*

Some participants have had recent experiences getting stuck on sandbars and in shallow water during their travels to the coast. One harvester shared how he was berry picking at Spoon Lake and got stuck on a sandbar at Fish River, with three people having to push the boat for an hour to get free.

Another aspect of shallow water were the multiple observations and comments on permafrost thaw, mud slumps and collapsing land in the channels and along the coast. One young participant who frequently travels along the coast mentioned that he saw them on his journeys;

> *"The mud slumps all along the coastline. Yeah. Mud slump is a big thing. In some certain years, there's the... debris in the water, like logs, sticks, everywhere. Some years."*

Margot McLeod, who is frequently on the land and harvests year-round, mentioned that she and her family noticed the land dropping during their recent travels in summer 2017.

M.M.: *"Oh yeah! Dropping, you can really see the land dropping. Even in... when you go into Blow River, it's really sliding, the mud, you can really see the land falling in."*

E.W.: *"Blow River, hey? Do people... is it shallow now in Blow River?"*

M.M.: *"It's very shallow. Yeah, we parked my big boat and I went with {...} and them to Blow River and we checked and I told him, 'Hey look at the land, it's really falling in!' and yeah. He said 'All over, it's like that.' He said Herschel is like that too, so... so yeah. Cause where we used to go, it's just filling in."*

On a journey with local residents along the coast to Kiññaq (King Point) to harvest some char, I witnessed dramatic coastal erosion. When I pointed this out to my travel companions, they mentioned that the slumping coastline made travel along the coastline very difficult because there was 'nowhere good to land the boat'. This comment was supported by Annie B. Gordon, who, during her interview, was discussing with Clarence Kowana and Dorothy Ross how she didn't like traveling to Kaktovik, Alaska by boat because "*it's not like how we used to travel long ago*", and that there was no safe place to land if traveling by boat from Demarcation Point to Kaktovik. Annie B. Gordon also mentioned that there were "*no more of those little shelters*", referencing safe places to stay and wait out a storm if weather turned for the worse during their travels.

Another participant, Michelle Gruben, is concerned about the collapsing coastline and what effect it may have on the marine life.

> *"I mean, even for the coast, like when you went for a ride towards the coast towards King or Quay Point, you seen how much slumping there was? And I know one time I went to a meeting and I was asking, because a lot of people they ask that we should do more monitoring along the coast for slumping! But from what I understood, when there's a landslide, this area of the coast, it's so fragile they said! And when it falls off, all the particles that are in the land, they go eventually in the water because it's coming off. But I wonder much effect that has on our marine mammals."*
>
> - Michelle Gruben

One harvester who has incredibly intimate knowledge of the land around Aklavik, Jonas Meyook, offered another explanation for low water levels near the coast. Jonas relayed in great detail the effects of fluctuations in species populations and how they impact harvesting activities. His perspective on low water included influences from both a low snowfall during winter months as well as the downstream effects of an ever-increasing beaver population. He described how, when more Elders were practicing land-based harvesting, they used to hunt large numbers of beavers in springtime, thereby controlling the population. In the present day, with fewer Elders, as well as hunting regulations, a high beaver population is keeping much of the water upstream near Rat River in the Richardson Mountains.

> *"There's no snow, like, if there's no snow, we don't have high water. And then back a few years ago, there used to be not much beavers, like when they get a lot of Elders around, they used to be harvesting a lot of beavers in the spring time. As soon as the beavers come around they used to hunt them all the time. And then uh, hunting beavers and rats at the same time. And nowadays, that one year they were logging right from the Mackenzie to Aklavik, they counted over 70 beavers [in one day]! You know? And all the way, coming. So that, to people, how come they banned… no shooting beavers? You could trap them, but you can't shoot them. So, we can't shoot them in the spring time, so the beavers populated more. And now we have low water all the time. Like if you go towards Rat River and then to the mountains there. And as soon as you walk up to a lake, you could see that lake just plum full with, blocked off with beavers! Blocked right off. And every lake towards the foothills is all completely full with water. And when we head down towards the coast and the rivers there, the rivers close to the mountains there, like Moose River and Qutiichuuraq and Moose River and that, Little Moose River, […]'s cabin. Can't even use those rivers now in the summer time cause it's too low water. The beavers blocked off… too much dams and too much lakes they blocked off."*
>
> - Jonas Meyook

3.23.1 The loss of whaling camps

Participants commented that they no longer can use historic, preferred locations for whaling, often identifying the cause as reduced access, channels changing, flooding, and shallow water. The top locations mentioned as previously ideal and no longer accessible or appropriate for whaling are Niaqunnaq (West Whitefish), Aqpaȓuatchiaq (Running River) and Bird’s Camp. Niaqunnaq, according to many Elders, used to be the hub for whaling among Aklavik residents. Due to flooding, people stopped staying at Niaqunnaq in large groups, opting for other locations that were more reliable to stay at for an extended period of time. When describing the changes to hunting locations in her memory, Renie Arey described when she stopped going to Niaqunnaq:

> “*Uhhh, in... '50s, '60s the last time when my kids were small we were there. Maybe '66? That was the last time there was a group of us that were out there that were still going to Niaqunnaq, and after that people started.... it floods hey? When it floods, it floods. We were there at that time when it flooded, and we were lucky to get out of there walking. This guy led us away walking. Then after that we started the kicker, we couldn't start the kicker ‘cause we were still out on the land. But there was water all over! And since then I guess people start going to Shingle. That's where most of the families, long ago too, after they go to Niaqunnaq, after they bring their muktuk back and whatnot, they all used to move to Shingle Point and do our making drymeat, making dryfish.*”
>
> - Renie Arey

One Elder who had clear memories of whaling at Niaqunnaq, described the changing channels and how they affected access to the prime beluga harvesting camps.

> *“But I don’t think you could drag a whale in there now too. Last time when we went through there, it was real... no more channel! After we break through from Coney Lake to Blow River or something… changed, really changed. But uh, Coney Lake's river is still good, it's deep, but Niaqunnaq... it really got shallow.”*

Annie B. Gordon, who spent many years along the coast throughout her youth, recalled how Niaqunnaq used to have good conditions for camping and accessibility, but no longer does.

> *“The ground now we have big winds every fall and water flood the whole flats out in the ponds like that? The ground is not as dry. Where Whitefish Station used to be, Jacob's house was just way up like that. Now it's just sunk right down. All that used to be good ground, just white with tents! Some of them they put their tents on the little creek that goes to Coney Lake. That little creek, that was used when the tide comes up, we could go through there with the boats. Now today, I don't think it's like that anymore.”*

- Annie B. Gordon

Aqpar̂uatchiaq, or Running River, was another location where several participants mentioned they used to hunt whale from. Dorothy Ross, who spent many years engaging in the whale harvest and other subsistence activities from Running River, described how the conditions were better at Running River for whaling and also for muktuk preparation. However, three years ago, the camps all got flooded and everybody moved out. One participant said the houses are now full of silt, and there are no longer any channels to access the camp anyhow.

Dangers from shallow water can be discouraging to youth trying to travel to the coast and gain experience. One Elder who has taken several youth out on the land over the years commented that shallow water at Blow River was hazardous for travel without knowledge of the area.

> *"Yeah, and are there ever dangers? Like do you ever..."*
>
> *"On the Blow River side, you get caught, you can't land, it's too shallow, if you get too close to the shore, you might get swamped up or..."*
>
> *"Oh wow, so you have to deal with waves and shallow water? Wow ok. So, do you think that would affect young people wanting to go out?"*
>
> *"Yeah, it would huh? Cause uh, they gotta learn how to read the water. It can get rough. They don't know where it's shallow and where it's deep."*

Although shallow water is negatively affecting access to preferred whaling locations, it is ironically also required for a more successful hunt, due to the turbidity of the water resulting in reduced visibility of whales in the Mackenzie Delta. Unfortunately, camps with ideal water depth are mostly inaccessible or flooded out, and the great majority of Aklavik residents reside at Shingle Point during summer months.

> *"And now everybody moved to Shingle Point because of climate change, the river changed too. There's no more river at Running River. Doesn't have a river anymore. So, they moved to Shingle Point."*

- Jonas Meyook

3.24 SHINGLE POINT AS THE MAIN COASTAL CAMP

Shingle Point, or Tapqaq, is now the main summer coastal camp used by Aklavik residents, largely due to its continued accessibility by boat, and how the majority of cabins have not been washed away. Judy Selamio explained that camps ‘flooding out’, were a big factor in why she now went to Shingle Point for her summer harvesting practices.

> *“But probably the late '80s I guess that we quit using Whitefish Station. We used Bird's Camp for a while, and after, it start flooding out at Bird's Camp. So we moved to Kowanuk River, same thing, so we start going to Shingle Point.”*
>
> - Judy Selamio

Annie C. Gordon explained that, in the past, nobody used to really hunt whales much from Shingle Point, preferring instead to hunt from Niaqunnaq.

> *“But Niaqunnaq, nobody used to really hunt in Shingle, they used to hunt at Niaqunnaq. Niaqunnaq, where our camp is. Yeah.”*
>
> - Annie C. Gordon

Despite a steady beluga whale presence throughout the summer, environmental and social factors weave together to affect Shingle Point’s beluga whale harvest and the resulting dynamics at Shingle Point are often not conducive to a successful hunt. Nowadays at Shingle Point, whales pass by most often in deep water and open ocean. This complicates the hunt and can result in a long chase, longer tow, and sometimes even in lost whales. Despite these setbacks, Inuvialuit from Aklavik have shown resilience through their adaptation tactics. One Elder who has harvested whales for decades described techniques used to follow whales in deeper water, describing how you would have to watch for bubbles when it was hard to follow whales in deep water.

> *“Yeah, yeah but long ago sometime you follow big herd and then you shoot it and harpoon it and take another one again and harpoon them and that's why you get in shallow water, you get a few, but it's deep water... hard to follow. Only look lots of ways, lots of bubbles, third one or something it comes up too far.”*

They continued to talk about how they would shoot whales in deep water in order to follow the oil trail a wounded whale leaves if visibility is poor due to high ocean turbidity and depth. I assumed that shooting a whale would tire it out, but the Elder clarified that it was more to slow it down and create an oil trail that would be easier to follow as the chase continued.

> *“Yeah. You know, that's why people, when they're diving too, when it's deep water, you shoot them. Right there. Slow them down.”*
>
> *“Okay. So, in deep water you have to kind of tire them out, hey?”*
>
> *“Yeah... I mean... yeah! But as long as you could follow it, sometimes you lose it and you watch, they come up. And after you shoot it, then you could follow the oil part, and after that, you know it's there someplace!”*

Gil Kogiak described how hunting techniques differ depending on the depth of the water, saying that on the Inuvik side (the East side) it is easy to harpoon quickly because the water was shallow. However, he mentioned that near Shingle Point, because the ‘ocean side’ was so deep, you had to chase the whales for a long time in order to tire them out. This is due to the deeper water allowing for whales to dive down once harpooned and potentially capsize the boat. Gil also talked about how traveling far out into the deep, open ocean ‘chasing whales around’ to shallower water would result in not only a long journey in potentially dangerous conditions, but also wind up using large amounts of gas.

Jerry Arey, an Elder who spends his summers on the coast regularly at Shingle Point, shared a close call from when he was hunting a whale. The combined factors of bad wind, high gas use, and a long chase and tow time culminated in a risky scenario and a disappointing end result.

> *“George and I, we were whaling, we went quite a bit. George Selamio. Him and I used to hunt whale all the time. And we went out one time, and it took us a while to kill the whale, and we got it, and I... I told him, we were towing it back, and we got caught in the south wind. And we were pulling, pulling, pulling. Finally, we got it, I told George "You got enough gas to make it?" And he said, "Oh yeah! We got lots of gas." End up in the harbour, and we got no gas! So, the wife had to bring us gas. And, I ask him, "Where's the whale?" Looked beside us, it's floating. After five hours pulling that whale, it came up. The belly got so tight. Air locked inside and the whale came up. So that’s why we… you know, get the whale right away. If you catch a floating whale, like, the muktuk is still good, but the whale is, I mean the meat is not good.”*
>
> - Jerry Arey

Consistently across nearly every interview, it was agreed that high amounts of gas are needed in order to engage in a safe and successful beluga whale harvest nowadays. However, the high price of gas was mentioned by almost every participant as a major deterrent against the beluga whale harvest. On average, participants quoted anywhere from 40 to 50 gallons of gas required to go to the coast and back, with several participants saying they bring extra in case they get caught in bad conditions or are presented with other harvesting opportunities that require further travel. The consistently referenced price tag attached to this amount of gas is $500. Renie Arey, an Elder, compared current prices to those from when she remembers as the prime era of whale harvesting, when many families went to the coast.

> R.A. *“Yeah, well it was so much things that were all like... the people that used to go down there were all working at the time. And we'd just go down there a little while and come home and get a whale and whatnot. And that's when we were really busy in our own little world, just doing, you know. With the gas price coming up at that time too, things were just... you know... it was really... Gas is something that... dog team you didn't have to worry about gas or anything. But today, the gas and oil and the motors and everything you have to think about. But not like long ago where you just... when you traveled, you were putputting along, but the gas was cheap! You know, 45 gallon might have been about $30 or something like that... 45 gallon $15, $20 back then. So...”*
>
> E.W. *“And now how much would 45 gallons of gas cost?”*
>
> R.A. *“About, maybe $500.”*

Nellie Arey, an Elder who goes out on the land with family throughout the year, said that she recently spent $420 on 40 gallons of gas to go to Blow River and back. Several participants identified gas as the main (and sometimes only) reason behind their decision to no longer harvest whales. One adult said that, although they grew up on the land in the Delta and had experience hunting whales throughout the majority of their life, they hadn't harvested whales recently because of high gas prices.

> *"Never hunt whale for a couple years! It's too expensive for gas, huh? Today is really different today from long ago. Too expensive for gas to go out harvesting today."*

An Elder spoke about how gas prices, while a major deterring factor for the whale hunt due to high costs, were also becoming increasingly difficult for time spent out on the land in general. They remarked that, without employment, paying for gas was next to impossible.

> *"Gas is too expensive. You know, that's the main source of everything. If you're gonna go out on the land, you're gonna need gas, but how can you get gas with no jobs? See how hard it is for us?"*

Brian Elanik, a young harvester, not only identified high gas prices as a concern to harvesting activities, but also spoke about the high cost of equipment such as ammunition. He was upset that Aklavik's gas station had such high prices as he felt it was an injustice to the community and their traditional livelihoods. This issue, along with exorbitant prices for groceries, was also mentioned as a setback to planning harvesting trips on the land.

B.E. *"I'll never go to Shingle again."*

E.W. *"That is really messed up, actually. I've not heard it put that way before, but…"*

B.E. *"Yeah it's basically how companies just ripping all their people off, so. It's pretty ridiculous! Cause they'd actually make more money if they dropped the price of gas. The hunters, I mean like I said, I used to go to Inuvik just to buy my gas because it was so damn expensive. But, gas is number one issue, and the price of shells is another issue."*

People go down to the coast for varying times due on time availability but also based on their personal financial situation. Logically, the longer you plan your trip, the more gas, food and ammunition you have to bring with you. One theme that ran through the interviews was that, in order to go on the land, you needed to be prepared and well-stocked with items. Dean Arey, who brings his entire family to the coast for multiple weeks, shared with me the price tag attached to such a trip.

D.A. *"Yeah, it adds up huh? And everything was cheap back then. Nowadays, like... for us just to come down here, and for anybody, you're getting $1500, $2000 worth of groceries to stay down here. And then you get your gas, that's another probably... well I spent $2500 on gas just to come down. I mean, you know, that's expensive, not like long ago!"*

E.W. *"When did you notice the big change, big jump in gas prices happen? Or, was it just a steady climb?"*

D.A. *"It was just a steady climb. Like now you hardly see anybody come down and hardly anybody hunt whale anymore because it's so expensive. And only a few people hunt whale, and we partner up all the time."*

When asked if he thought people would hunt beluga if there wasn't such a high associated cost, Dean firmly believed the interest was still there, but money was a major issue to many.

> *"Yeah! They would! Like I said, costs to come down here in gas alone… we're paying $1.70/L. And to get groceries is another… just to come down is another thousand bucks in groceries. It's not cheap anymore, it's expensive just to come down here. The younger generations, I mean, you know they try, and some of them do try! But then it's... so expensive to come. It's cheaper probably to go south than to come here. To drive south. But then me and my family like to come down here. We got a house here."*
>
> - Dean Arey

An Elder who hunted whales with family throughout the course of their life described the shifting dynamics at Shingle Point and how it is no longer a place from which to easily harvest whales. Their comments present the difficulties of hunting from the ocean side, including the need to travel great distances, long tow times, and high gas use. They also elaborated on how, in the past, it was easy to hunt from the harbour side of Shingle Point. They recounted how, through communication over radio, the entire camp would purposely be quiet when whales were approaching, allowing the whales to swim into the harbour without disruption. Now, with the high levels of noise at Shingle Point, this rarely happens.

> *"Seems like… it's just too much traffic too. Like I told you before, earlier, when we were down there, growing up. When our Elders were down there, the Elders were down there, we used to be young. They used to tell us, ok kids gotta keep quiet. Help us watch a whale. We had to whale, we couldn't even run the boat. Because the whales were coming, they were watching. Even an Elder from the sea used to talk on CB in our language to my dad and them, and say okay, planning, "Yeah, they're coming in slow, they're coming in." So yeah! We had to have patience and we, you know, we watched, and soon as the whales went in, then my dad and Danny A. and Andy and them would talk to us. Say "Okay we're gonna lock them in, get ready!" Then they go out, right in the harbour, you just, you don't even have to… you know how muddy the ocean is, but in the harbour, you could just see the whales underneath! See when they're gonna come up right there. So easy! And they don't burn gas, you're right there. Right out at Shingle Point harbour. You don't have to go all the way out in the ocean."*

This quote highlights how hunting tactics have changed over the decades, with "too much traffic" creating too much noise for whales to come close to the camp. This change was repeated by many participants with memories of how things used to be and was a common complaint with regards to harvesting whales from Shingle Point. While Michelle Gruben was reflecting on Aklavik's reduced beluga whale harvest and how it has come to this, she described a contingency of factors, including high traffic at Shingle Point.

> *"I think, back in the day... I think when they used to do whale hunt, say, like, twenty years ago, it used to be... that one person was captain so you kind of all went with what the captain said. But then now, because the climate is changing, the weather is changing, you have a different pattern to follow, so you're kind of going on the spur of the moment, when it's good weather! So, it could be just two of them in a boat, or three of them in a boat. But uh... plus, Shingle is getting more modern than what it used to be traditionally. There's more quads out there, there's more modern equipment there than traditionally used to be. So, with all*

> *the noise, even our outboard are bigger and better than what they used to be long ago. So, all those things play a factor into the whale harvest. I mean, even when you first come to the HTC, you were talking about how you gave us a graph about how much whales were harvested at Shingle in the '80s, I think that was 30-something? That was amazing to see. Right now, for Aklavik August 2017, there's only one whale harvested. That's unbelievable. So last year, it was two or three? Year before that was two. But maybe we might get back up to those thirty numbers. Hopefully!"*
>
> - Michelle Gruben

Dorothy Ross recalled how conditions at Running River, where her previous camp was located before it got flooded out, were much better than those at Shingle Point for hunting whales. She described how there are too many four-wheelers driving around the clock, not only creating noise and scaring whales, but also kicking up dust and dirtying muktuk and mipku as they dry on stages. Billy Archie expressed frustration at how, at Shingle Point, if whales were nearby and he wanted to hunt, all too often, they would get scared away by other people at the camp making noise. His adaptation to this recent development is to no longer bother harvesting whales from Shingle Point, instead going to the 'East side' – at camps used by Inuvik residents.

> *"But the sad thing about it, when you look at last year, we went to a different location to harvest and it's way easier. And it's the whole thing when you compare REAL subsistence harvesting versus recreational. Guess what, everybody's going to Shingle Point for what? Summer games! And every time I'm out there, waiting for whales, guess what? Boat goes by. Guess what? Whales take off. And then, that's the whole thing, when I was growing up, we were quiet till everybody got their whale. And nowadays, you tell these people... "Well it's my right! Nevermind!""*
>
> - Billy Archie

When justifying his decision to hunt from Garry Island on the East side, he explained,

> B.A. *"Yeah. Well like I've said before, it's a place where there isn't much traffic over there. The whales aren't bothered by boats going past."*
>
> E.W. *"Hmm! And, at Shingle, when, you know, when you do see whales, does anybody try to get people to behave the way you used to behave? Like 'shh the whales are here'? Or is it just..."*

B.A. *“No.”*

E.W. *“Huh.”*

B.A. *“It's gone. It's really gone. It's sad. And it's one of the things that bugs the heck out of me, is that respect for people, it's just not there anymore. Just so rude.”*

E.W. *“It’s just a holiday?”*

D.R. *“It’s just like I used to be at Running River, that’s where we would go, and now that we’re over at Shingle, it’s not even worth whaling over at Shingle anymore. It’s just too…too much noise!”*

Initially, I found it shocking that residents from Aklavik would travel such a distance to the Inuvik side while also leaving behind traditional on-the-land camps, but Billy’s story was mirrored by other individuals who also found greater opportunity at ‘East side’ whaling camps such as Garry Island, and East Whitefish. Over the last five years, Gill Kogiak has chosen to hunt whales from East Whitefish and Garry Island, saying that it is much easier to hunt from the East side. Rather than having to travel for a long distance to find a whale and waste gas, on the East side he said you only have to travel for 15 minutes to the whale, then drag the whale for only 30 or 45 minutes. An Elder who spent their entire life going to the coast on the West side also made a relatively recent decision to no longer travel to Shingle Point but instead spend their summers at East Whitefish.

> *“Yep. And the reason I go around East Whitefish with my sisters is, you know, when you go and get a whale, it only takes like five, ten minutes before we start towing in and it's not too far! It's only five minutes out into the water, in the shallow part. And it's easy and it's close! You don't burn that much gas!”*

In addition to shorter tow times and easier hunting conditions environmentally, the Elder referenced how people used to be quiet at Shingle Point for the whale hunt, *“but nowadays, it’s not happening”.*

> *“Well, uh, we used to do the beluga hunting at Shingle. But then found out that, you know, that for some reason the belugas, you know, usually when you’re down*

> *there with your parents and Elders, we used to be quiet and wait until they come in the harbour. But nowadays, it's not happening, and when you go the Shingle, you know, you could go get a whale but you have to go straight out from the DEW line. And once you get your whale straight out from DEW line that's quite aways, it's a shallow part way out in the ocean. And to tow it back, you know, you need lots of gas and everything. That the reason why I haven't been hunting there. And now I go on the Inuvik side with my sister, we go to Tuk by her camp in Tuk."*

While many of the deterring factors listed at Shingle point are largely logistical and external (such as high costs for equipment, deep water, high winds and long tow times), some changes represent a deeper shift in values around the whale hunt. When all changes are considered, the combined social and environmental impacts affecting Aklavik community members culminate in a reduced desire and/or ability to engage in the beluga whale harvest. Despite this frequently occurring outcome, some individuals still do harvest whales regularly from Shingle Point, such as Dean Arey, who has landed a whale every year for the past four years. He says that hunting whales is one of his favourite things to do, and that he wants to pass on his experiences to his grandson so that he knows what Dean learned.

> *"I like to hunt belugas, that's one of my favourite times of the year in summer time, other than fishing, is going out in the ocean. And I'm teaching my grandson now. Like I took him out this year. I want him to learn what I grew up hunting and all that. I want to teach him what I learnt."*
>
> - Dean Arey

Shingle Point being the main coastal camp in this day and age has resulted in a 'push and pull' of dynamics, with some changes stemming from the widespread use of Shingle Point, and other, external circumstances causing the shift occurring at Shingle Point. I will explore some of the external components in more detail.

3.25 THE IMPORTANCE OF ELDERS

Elders are held in unequivocally high esteem in Inuvialuit culture, and this was demonstrated through countless conversations with participants, as well as through actions in everyday life at Shingle Point and in Aklavik. Not a single interview went by where the importance of Elders didn't shine through in comments and stories. It became evident that a strong set of values, foundational to Inuvialuit culture and identity, are attached to Elders in the community of Aklavik – they represent a variety of traditions, emotions, actions, and ways of life. One value with deep ties to the beluga whale harvest is the sharing culture, which guided the kin system in the past and still has compelling influence today. Judy Selamio, a lady who still lives by the values she was taught by her grandmother, explained to me why she shares her catch with others, especially Elders, in spite of how expensive hunting is nowadays. She highlighted how money was insignificant in daily life on the land in her youth but reflected on how dominant money is today in peoples' access to harvesting activities. She emphasized that her own needs are secondary to the values she was taught, especially those to respect and share with Elders. She lives her life with humility and gratitude towards the Elders who taught her everything she knows today.

> *"I like to share, me, my grandmother always taught me to share. No matter what! Today you have to have money to buy your own native food! I always tell my family and friends, if it wasn't for Elders today, you wouldn't be sitting here. I always give a little piece of fried meat or fish and when I visit tomorrow with my food, I am gonna go to seven Elders and give them a piece of dry fish and a piece of meat. That's the way my grandmother taught me, you share your food. When you share your food, you get more blessing from the land. She always say that. We never knew about money, us, growing up. We never knew about money! Today you have to have money to eat your own native food. It's just totally different story! But me, I share all the time. Anything I have, I have seven Elders I like to cook for them and feed them. 'And what about yourself?' It don't matter, what about myself. I got food for myself. That's the way my grandmother taught me, is share. And you make those Elders happy too, because if it wasn't for our Elders, we wouldn't be sitting here. I always tell them."*

- Judy Selamio

Brian Elanik, a young harvester, strongly adheres to sharing culture with his harvested country foods, distributing his catch to several people who are not able to hunt for themselves – namely Elders. When spending time with him in the community, I witnessed several instances of him bringing fresh-caught fish such as whitefish and coney from the Delta to a few Elders and saw the appreciation in their reactions. When explaining his motive to share with the community, he said,

E.W. *"Well I mean I've spoken to you, I know you hunt for food but you also hunt just because it makes you happy, hey?"*

B.E. *"Yeah. And I hunt for the community. It's all just one big loop."*

E.W. *"Yeah, of positive stuff, hey? Yeah."*

B.E. *"Yeah! I enjoy traveling, enjoy hunting. Getting the community stuff, and myself... but more for the community, yeah."*

E.W. *"Hmm. Doing good and getting good in return, hey?"*

B.E. *"Yeah."*

Brian also elaborated on why he takes more of an independent approach to his hunting, discussing how he does not agree with how harvests are distributed through Inuvialuit organizations. Instead, he shares his harvest with people he personally identified as "really need[ing] it".

> *"It's just me, I just like to hunt for the town. Like, last year they tried to give me 15 gallons [of gas] I think? For hunting? I said no, give it to somebody else. I'm not taking your gas, cause... when you hunt for the Inuvialuit they want part of your harvest to give to the community. But they actually give it to people who don't even need it, so that's pretty pointless. So, I just quit going there and give it to people that really need it! That's like the Elders, the people that can't hunt, or don't have their equipment to do it, no family to do it. It's just what I like to do, so I just do it."*

- Brian Elanik

Renie Arey reminisced about how in her younger days they would always bring country food back with them to share with Elders that didn't have a chance to go out harvesting themselves. As she is now an Elder herself, she explained how, when an animal was brought to her, it was something she was very thankful for, and that the gesture went a long way.

> *"I know this winter there's a lot of caribou, so families would give... how many families, they would share... just giving out caribou to them. That's a big help! You know, somebody else giving you caribou? Whole caribou? That's like... my God, something that came into my door and I was very thankful for."*

- Renie Arey

When asked if that sharing culture was still strong in present times, she replied that it was, but also highlighted some barriers to sharing that she has noticed among younger people.

R.A. *"So, after that's done, we come back to the Delta and put all our winter, whatever we get for winter, we… sometimes share with some Elders that never go out there, so they always be happy to get a little bit of something that they never have something fresh all winter or something like that."*

E.W. *"That's the sharing culture, hey? That's really stayed strong? Does it still… would you say the sharing culture is still strong? Or…"*

R.A. *"Yes, I believe. But today it's much more different for the younger ones. It's so expensive to go out, not like long ago when the gas was cheap. And things like that, but today, gas-wise and what-not… even a boat is expensive. So today, money's like THIS. Some peoples want money, but there's still some peoples that are willing to just give you so much for your… you know, give a share of what they learn from their grandparents."*

E.W. *"Right, so there's kind of a bit of a mix, I guess, of people who really need what they take, and other people who are still able to give out?"*

R.A. *"Mhmm, it's good to always share because, I learnt that from my grandmother. I was raised up by my grandmother and she said sharing is one thing that you have to do when growing up. She said, when you share with peoples, you get more back in return. So, I always have that in my mind. Share all the time. Especially to the Elders that can't go out there, things like that."*

Based on these perspectives and also on conversations with community members, the current situation in Aklavik seems to be in cultural and financial limbo. The sharing culture of generosity – where wealth is created by providing for people and seeing your charity bring well-being – is still prevalent in many peoples' psyches and daily actions, and is a source of pride in Inuvialuit identity. However, these values are compromised by financial demands and the ever-increasing influx of colonial, capitalist society into Aklavik livelihoods. With few jobs but many high living costs, some people regard land-based activities as a way to profit financially. One example of this, relating to the beluga hunt, is people selling 5-gallon pails of muktuk for $150 to $200. Opinions on this are mixed: people recognize it is a guaranteed way to access a highly valued country food, and those who can afford it will buy pails of muktuk to last them the winter. However, I heard from other participants that they considered $200 too expensive for a pail of muktuk and were disappointed that the sellers were using these sales to profit off of 'their own people'. Instead of financial profit, these participants suggested, the sellers should accept moral 'payment' by knowing that they are providing food to keep their people well-fed and happy.

Sharing culture extends beyond the physical sharing of food, but also translates into shared knowledge, shared tasks, and shared stories. Annie B. Gordon reminisced about times in her youth on the coast, and how much unity there was amongst families. Not only did she describe the sharing of food, but she also explained the importance of shared responsibilities, and all work was done together rather than for individual gain.

> A.B.G. *"We have to work together. Our Elders were just so organized about doing things like that. They never wasted anything! Never! Everybody, especially the widows and the single parents, if there's any, they always tried to help them. Lots of work, but that's what you do to get what you want for the winter! 'Cause if you don't do anything, you don't try to help, even you make bread, you make tea, coffee, you cook pot of soup, you boil the fish. Anything like that you put on the table and everybody eats together, nobody eat alone. They just spread out, tarps and things.*

> *They have big canvas tarps, they spread all that out and everybody put their foods out. Bannock and whatever they could cook. Everything was done together. Nobody did it for their self."*

E.W. *"So, have you seen that change then?"*

A.B.G. *"Yeah, so I always think now today, so different. You don't even know who get whales, you don't even know what's going on. Only Whitefish Station on the East side, they still do that, some people still do that. Yeah."*

E.W. *"So, you said Shingle was used mostly as fishing and caribou?"*

A.B.G. *"After that, and later on after we lose our Elders, nobody go to those places anymore, huh? So, they just go right to Shingle. And that's where they do all their whaling, and fishing and caribou."*

Michelle Gruben's memories supported Annie B.'s comments about how people now 'keep to themselves' more than ever before, and that she felt that the atmosphere at Shingle Point was changing.

> *"Like you know, when we talk on the radio, back in the day, they used to say 'good morning'! All day, like that. But the radio was just like a regular phone. But now, the radios are so quiet. Nobody is even talking. I think people are just kind of like… keeping to themselves. Maybe they're still… maybe they're still, you know, watching their neighbour. Not watching their neighbour! But still close as a family. Shingle family! But we're just not seeing it how it used to be long ago where they used to… But I guess when my father-in-law was alive, at the time, there used to be his dad, and you know, more people at the point. So, we'd all come together as a big family to eat."*
>
> - Michelle Gruben

Elders were mentioned so frequently in tandem with beluga harvesting that they almost became synonymous with 'long ago', when beluga whale harvesting was in its prime. However, when deliberating over the reduced beluga whale harvest and how it came to be, many participants revealed that they hadn't hunted since a significant Elder, or Elders, had passed on. Several people explained that Elders used to drive the hunt at whaling camps, directing the action through their experience and knowledge. One participant said that still happens with the remaining Elders, but because so many have been lost, it has diminished a lot in recent years.

Other participants, such as Jonas Meyook, described how Elders used to hold families together, but once the Elder passes on, for various reasons, those families start breaking apart and no longer traveling together.

> *"And if the Elders travel, like, they used to have a lot of families with them. Like people traveling with them all the time, family groups and that there. Like, you know, one Elder and all that, she could hold, one Elder could hold four, five families together. Like, you know, that's how much an Elder is so important. Like what we know is there, an Elder could hold family groups together lots and bring a lot of people down there, and that's when we found out about Elders. Like, they hold a lot of people together. They keep groups together. And once the Elders pass away, then, some people they don't care to go down because the Elder is not there, or they have too many memories and all that there. And after, they hardly travel anywhere."*
>
> \- Jonas Meyook

As described in the results of the first research objective, teamwork is one feature of the beluga whale harvest that greatly facilitates the process, from the hunt, to the butchering, to the sharing. The role of Elders holding families together directly influences the dynamics of the beluga whale hunt. A few participants commented that they no longer have a reliable team to go hunting with, and one young participant said that they don't have "the equipment and no crew to go with."

In addition to uniting families, Jonas Meyook also shared a story that demonstrates how integral story-telling was to Elders' experiences at Shingle Point, and how much the passing of some Elders affected others and their willingness to go to the coast. It demonstrates that the passing of Elders leaves a big hole in many peoples' lives, not only as the loss of a loved one, but also represents the loss of a way of life.

> *"Yep, there's a few Elders down there, but not as much as there used to be Elders. Cause there used to be a lot of Elders heading down that way. And the Elders moved down there, and a lot of Elders used to uh – what the Elders used to like it when, they used to always go gather and they'd go hunting say at Running*

> *River or at Shingle Point. And then they gather and then they tell stories about long ago and all that. And then that, what I found is uh, there's an Elder that went down to Shingle Point and she was the only Elder there, like all the Elders, most of the Elders passed away. And then she was looking for Elders to go and tell stories and talk about and that, and then there's hardly any Elders. And you could see her walking around, and moving to people and that. And there was too much Elders here, she said, "I don't think I'm gonna come back down here next year. There's no more Elders to go there, so we're not gonna, I don't think I'm heading back down here again." So she never went back down to Shingle for a while."*
>
> - Jonas Meyook

Sometimes, when Elders pass on, some people no longer have a purpose to harvest whales, as they have nobody to share the whale with. This is the situation as described by Elder Danny C. Gordon, who hunted whales along the Beaufort coast his entire life. He said, as he has gotten older, he personally is able to consume less muktuk as it sits heavily and isn't easy to digest if he isn't active. Danny therefore no longer wants to harvest a whale as he doesn't 'need ten pails' of muktuk but can instead generally rely on somebody to give them a pail.

> *"It's been four years we haven't harvested. The reason for that is, Sheba Selamio, and Elder, and George Selamio, well he's got a camp in there… Middle Camp. It never occupied anymore. We used to harvest one, and we get two pails, and we give the rest to them. So we don't need ten pails. So we just take one or two. So they're gone, they're both gone, so we haven't gone harvesting since. We don't need to! We, um, we can get a pail from somebody usually. No, we like it! Muktuk is good. I think, getting older, it only takes just a little bit. Too much fat isn't good. So we kind of avoid."*
>
> - Danny C. Gordon

Danny's comment brings forth another value central to Inuvialuit belief, which is to use as much of the animal as possible, not be greedy and overharvest, and to not be wasteful. However, as time passes and more Elders pass on, this value is slipping away. Annie B. Gordon described how Elders would use 'every part of the whale' traditionally, but now only certain parts of the whale are used and the rest goes to waste.

> *"You know, our Elders, they really use every part of the whale. Nothing is wasted. Even you, you know that when you go down. Nothing wasted, everything is used. Now today, they just grab certain muktuk parts and everything else they just drag in the – they just drag it out into the ocean and leave it like that and that carcass go ashore, and big waste."*
>
> - Annie B. Gordon

Brian Elanik expressed disappointment at the increase in wastefulness that he has observed in recent harvesting activities. When telling me about a caribou hunting site he came across in the fall of 2016, he was deeply upset the bulk of caribou carcasses left to rot.

B.E. *"They take too much from the land and waste so much of it, the land is not going to provide you with it."*

E.W. *"They waste too? There is wastage?"*

B.E. *"Oh yes. There's lots wasted. I mean while I was up there, there was caribou left on the ground. Whole caribou left there. There was actually three where we were! And by the time we got to them, it was two days, probably three days they had been there."*

Finally, it became quickly evident that an intrinsic aspect of living with Elders is learning from them. Almost all participants mentioned at least one Elder - whether it be a parent, grandparent, aunt, uncle, or friend - who taught provided to them the experiences that shaped their current role as a harvester on the land. One person described their childhood and how their father would teach them through active observation over many years.

> *"My dad took us out when we were young to hunt, but we just had to watch, we couldn't do anything when we were young. Just to watch. And that's what we do nowadays! That's what I did with my younger boys, take them out and let them watch, so they know. You know, just uh… basic training! See, you know, watch and observe, learn. And now they do the whaling for me, I don't have to do anything!"*

Annie B. Gordon pointedly stated that Elders purposely positioned themselves as teachers so that others could watch, learn and one day carry that knowledge themselves to pass on. Inuvialuit culture is traditionally an oral knowledge system, therefore frequent contact, observation and communication with Elders is of utmost importance to keep the knowledge flowing through the generations. However, because of the breakdown of knowledge transfer due to formal education, colonial society, and Elders passing on, many of these traditional practices are being lost.

> *"So, all the things that our Elders used to do in the past, all that they did, they did it so that whoever is around them could learn and carry on that. But like I say, so much of things today is not being done anymore. And we lost so much good traditional ways of preparing food, and how people used to live. What they did with the animal that they got, especially whale, because you don't get whale every day of your life. You have to prepare that really good."*
>
> - Annie B. Gordon

One young harvester who is an incredibly active and confident hunter for a great variety of species, shared with me the last time he tried hunting whales and why he was not successful. He admitted that, in order to successfully harvest a whale, he did not possess the experience needed, and his hunt ended by returning to shore empty-handed.

> *"A friend of mine maybe about 7… 7 to 10 years ago, a friend of mine and myself we went out hunting near the Bird Camp area. Yeah, and it was unsuccessful. Went all around Tent Island, Shallow Bay. Seen whales, just… we were too inexperienced to get one."*
>
> *"Oh, must've… how long would you say you took going around that area?"*
>
> *"That area we were hunting I think about 6 or 7 hours. Right until we start running low on gas and came home."*
>
> *"Mmm, yeah. Were the conditions okay?"*
>
> *"It was alright, yeah. Just not… yeah, we were inexperienced. Never really hunted beluga before in my life."*

As a respected Elder with vast knowledge and a sharp memory, Annie B. recognizes the value of her experiences, words, and wisdom. She was very adamant that she wanted her words to be taken down and recorded so that her unique knowledge and perspective of the world could continue beyond her years and hopefully be taught to the next generation.

> *"Why I say this to you guys is because I heard it from Elders, and they talk about things like that. And that's why I said they have so much valuable information that nobody picked up to share."*
>
> - Annie B. Gordon

3.26 CHANGING VALUES AFFECTING THE BELUGA WHALE HARVEST

A cornucopia of changing values, largely stemming from an ever-increasing influence from southern society, also emerged as major factors contributing to a decreasing beluga whale harvest in Aklavik. As centralized communities became the new normal in the Inuvialuit Settlement Region, more families moved from their camps on the land to benefit from territorial, federal and local services and businesses, thus establishing the identity of new generations as community members rather than hunter-gatherers. Accompanying sedentary community living is increased access and reliance on store-bought foods, which in turn has evolved to a shift in taste, especially for the younger generations. A few participants shared how they noticed people turning away from muktuk as a food source, saying it was 'too strong' or that 'they didn't have a taste for it'. One young participant who grew up with Elders commented how they enjoy aged muktuk but have a hard time sharing it with others due to its pungent flavour.

> *"Hmm, it's hard for me today because I don't really know many of the people that like it anymore. When I'm around people and offer it to them, they're like "Ughh, I don't know", and things like that. Maybe it's just because mine is all... I grew up with the Elders mostly, so I like the really aged, the really strong stuff that will do a number on your stomach."*

Avoiding muktuk as a food source has extended to some people avoiding it all together – meaning they refuse to work with a landed whale and help butcher it. Dorothy Ross, whose family is very involved in the whale hunt, personally doesn't like the taste of muktuk but will definitely join in to help prepare the whale. Beluga are oily and messy to prepare, with a lingering 'fishy' smell that will ruin clothes, and a few participants, such as Michelle Gruben, commented on how people no longer want to help for fear of soiling their clothing.

> *"You don't even… there are some families that go to Shingle that their kids, they don't even touch the fish! Like they're too precious, or they don't wanna get their clothes dirty. Or you know, that kind of thing. But we're there for a lifestyle. We're not there to doll up our face, or put… you know, that kind of thing?"*
>
> - Michelle Gruben

A more recent onset of technologies such as television, internet, cell phones and social media have created a new reality where Aklavik residents, especially youth, are much more dependent on accessing luxuries such as cellular service, internet access, and video games. Several participants identified this technological attachment as a deterrent to not only beluga whale harvesting, but also land-based activities in general, saying it takes up the younger generation's time.

> A.B.G. *"And our younger generation is not going to learn what we were taught, they got too much other things that distracts them, they have no time to learn because they have TV! They have games. And they have all that."*
>
> C.K. *"Too much distraction!"*
>
> A.B.G. *"Too much distraction is right! And they just don't have time to learn things like that. And it might come down to that time, to prepare our own food like that, which will be run by people from down south. And what few native people that will get to work with them, and it's going to be all for money, and our younger generation that never ever learnt anything like this may never have a chance to even put their hand on anything like that."*

However, due to the longer journey, complex hunting conditions and time commitment associated with the whale hunt and preparation, the beluga were identified as being a species that took people away from Aklavik for more extended periods of time. This can create serious complications for people who have permanent employment, such as Larry Sittichinli, whose last landed whale was 18 years ago (1999) at Running River. When listing the reasons behind his long absence from whale harvesting activities, he said that work was the main deterrent getting in the way of hunting beluga, but also identified not having easy access to a boat and high gas prices as restrictions.

As previously demonstrated when discussing Elders and the values associated with them, the beluga whale hunt thrives when people are quiet, patient, and spend longer periods of time on the land. However, rapid transportation and relatively instant gratification from technology and luxuries have switched peoples' tolerance for time on the land and how it is spent. When reflecting on the major changes that are impacting the beluga whale hunt in her mind, Judy Selamio identified electronics as an influence that pulls people away from the land by creating an attachment to life in Aklavik and creating an urgency to get back to the comforts of home.

> *"…But other than that, climate change and electronics took over so nobody have any interest on the land. You can't go anywhere without phone, or whatever this thing is, whatever. Long ago you just jump in a boat, don't know where you're going, nothing else! Don't have to worry about what time you're gonna be at home or what time you be in town. There's never a time! Time is too fast today. It's not slow like when we were growing up. It was very slow when we were growing up."*
>
> - Judy Selamio

In the present day, if people are checking for whales in early summer days, they most often travel rapidly back and forth, sometimes only going for a day, rather than spending an extended period of time at the coast. This is facilitated by high powered speed boats, which cut down the trip to the coast to mere hours, supporting the 'fast time' mentality as described by Judy Selamio and many others. Annie B. Gordon jokingly compared travel times in the past to peoples' patience today, saying,

> *"Goodness sakes! I heard somebody too was saying when they started sometimes it took them three days to get down to West Whitefish! Three days! Can't you just imagine that if it was us now, we would just be… "Oh, I shoulda got a chopper! I shoulda got a plane! (Laughter)"*
>
> - Annie B. Gordon

Desiree Arey, a youth who does travel to the coast regularly and engages in many seasonal harvesting activities, described how many of her peers get 'bushed' from being on the land, meaning that their tolerance for isolation and land-based activities runs thin, or they get homesick and want to return to Aklavik. Although she personally enjoys time on the land, she confessed that this sentiment is not shared by all youth, who would sooner stay close to their friends and home comforts rather than trap, fish or hunt. However, Desiree, among many other participants, recognized how the land holds a special significance to them because of the memories and experiences generated from quality time spent there. Countless participants emphasized how important that emotional attachment to the land is to support a future desire to engage in land-based activities.

The draw of community life is affecting the beluga whale hunt, as Danny C. Gordon shared. He explained that events in Aklavik taking place on the days surrounding Canada Day (July 1st) were a big draw to people and kept them in town, delaying their departure to the coast or to Shingle Point. He identified a change in attitudes as a main reason behind people missing the opportune window of time in which to more easily harvest whales – in late June.

E.W. *"So that's a change in attitudes."*

D.C.G. *"That's right. Exactly! People are changing! You see, what happens is, they want to stay in Aklavik for sports day. June, July 1st. And that's the trick! They want to have the fun first before they go down. It's too late then. For now, because the break up is two weeks earlier, the whales are coming earlier than 50 years ago. July... or June 50 years ago, would be frozen in June! Now we can go to Shingle Point June the 8th!"*

Renie Arey also said that peoples' attitudes and interest are changing with regards to the beluga whale hunt, saying that today it is totally different to what she remembers from the past. However, she did emphasize later that she has hope for the future and believe in the resilience of Inuvialuit culture and tradition, emphasizing the importance and getting youth to the coast to experience the beluga whale harvest for themselves and develop a connection.

> *"I see it slowly going down. Very few our age are willing to get that beluga. My kids all the time get beluga. But lot of them young ones nowadays go down there, do their fishing, they don't even hunt beluga or anything. It's totally different. Sure, if an Elder was there with a family, they'd get beluga and that, but… it's different! It's not like long ago when everybody was just like, all day we just wanted to get our share of the hunt. Just enjoy the meal and for the winter, prepare it and everything. But today, it's different!"*
>
> \- Renie Arey

Health problems – both physical and mental – affect people in Aklavik more than previously in living memory. However, both Renie Arey and Billy Archie described how people transformed when they were on the land, referring to it as rejuvenating, invigorating and even healing.

> *"Mmhmm, they never really learn if you don't have… to me, working with the Elders, their story-telling! They, when you work with them table to table like this, they tend to wander around. But if you bring them right out to where they were, then their mind gets really sharp and they'll just… they'll just get young again!"*
>
> \- Renie Arey

B.A. *"Yeah, and the trapping prices were good and everybody was… there was no obesity back then. There were no health issues. I mean, people weren't overweight, there was no diabetes. Only issue was TV. And then, when you start seeing yourself change from on-the-land to being isolated in the community, change of diet, change of lifestyle."*

E.W. *"So, yeah, I guess being in one place has really had an effect on people's…"*

B.A. *"Change of diet, change of lifestyle."*

E.W. *"Yeah, it goes all the way down, all these impacts affecting each other."*

The land as a healer came up in conversation with other community members, with some people sharing personal stories of how the land took them away from dark places. Others described how they might feel emotionally stable in town, but once they went on the land, they realized how much better they felt.

Despite misgivings and apprehension for the future of the beluga whale harvest, an incredible amount of resilience and confidence in the strength of Inuvialuit values was evident in interviews, conversations, and daily actions. For so many people in Aklavik, time on the land and harvesting species is held in the highest esteem and their connection to the land is irreplaceable. Michelle Gruben expressed gratitude for the way of life she is able to live, recognizing the blessing that the land brings through enriching food and experiences. The future is greeted with optimism and the certitude that adapting to the challenges Aklavik is faced with will overcome whatever difficulties may arise.

> *"I mean, that's where you come back to say... us we live a traditional lifestyle. It's something we depend on, something that we need. But people that come from... people in the south don't believe that there are still people that live off the land. They don't get it, they don't understand. Because the whole world is getting so modern, like, but us we're lucky! Like even you, coming from Winnipeg, you look at all that fish you ate off the land and all the berries. You would never have thought you'd do that when you're coming up here, but it's something we cherish. And it's something that we have to do! Like we want to survive as people, but times are changing and we have to adapt to those changes."*
>
> - Michelle Gruben

3.3 The future of the beluga whale hunt in Aklavik, NT

Research Objective 3:

Assess the implication of these changes for the future of the beluga hunt, and identify culturally appropriate action that could be taken to revive the harvest

The final stage of each interview was to address the third research objective of gaining participants' perspectives, expectations and hopes for the future of the beluga whale harvest. While participants often expressed helplessness in the face of change that was moving fast and outside of their control, they also demonstrated resilience and positivity that the hunt would continue so long as experienced teachers could share their knowledge with the upcoming generations. A recurring theme that demonstrated the value of experiential learning was the recognition that in order for the youth to appreciate and pursue the beluga hunt, they require the means to foster a connection to it by experiencing it. When reflecting on how youth have less interest in consuming beluga whale, Michelle Gruben discussed the importance of bringing children without 'harvesting families' to the coast to experience the hunt.

> *"There's opportunity for kids to do it, but I think you have to grab onto them when they're young. Cause you talk to kids nowadays, you say, "You should have some muktuk!" And they say "Naahhhh"! Like there is no interest for it. They'd rather go have french fries, or... they don't want the muktuk. [...] we're lucky to work with the families we live with. They harvest traditionally, so they harvest whale, caribou and whatever. But the younger generation after us, they don't, maybe their family doesn't live off the land, or harvest that much. You know, to get that experience personally."*
>
> \- Michelle Gruben

As each participant was asked what measures could be taken to create that connection between Aklavik residents and the beluga harvest, two major initiatives were proposed as potential solutions. The first was to organize a community hunt, where experienced whale harvesters could be in charge for a team of hunters working together to land whales. This would allow for less confident individuals to gain experience through watching more 'expert' harvesters, and would also overcome the barriers of not having a team to work with, not having equipment to use, or not having enough money to shoulder all of the associated costs individually. One young participant mentioned that not having a team to hunt whales with was a major reason why he did not try to hunt whales anymore, and that he had been hearing from his peers that they were interested in hunting whale. When asked what he felt would be the most effective way of getting people out and interested in the hunt, he responded,

> *"Hmm, I don't know! Yeah, I guess the community hunt thing, just people having access to the equipment to do this and the experiences is the real challenge."*

Organized community hunts would be open to anybody who is interested, but an expectation of sharing and distributing the whale products would be attached to involvement. In July 2018, a community hunt of sorts occurred by chance, when a pod of roughly 60 whales swam up within a couple miles of Aklavik by Bickish's up the Peel Channel. Through personal communication with community members after the event had happened, it was learned that a large number of people mobilized to work together to harvest seven whales from this rare opportunity. The muktuk was prepared by experienced knowledge-holders and was distributed, at no cost, widely among other people in Aklavik, demonstrating that the sharing culture regarding whales still guides the distribution when the harvest is plentiful. The most critical part of this experience was that many people were able to harvest whale, witness the beluga hunt, and participate in butchering and preparation for the first time. This hunt, unlike hunts at the coast, was accessible and safe, and allowed for a spark of interest to be ignited among many community members.

Coincidentally, the previous year of summer 2017 had a similar, albeit smaller scale opportunity to harvest whales in a chance circumstance. Margot McLeod and her family were traveling along the coast, searching for caribou and picking berries, when they came across two beluga whales – a mother and a calf – stranded in Little Moose Channel, a route frequently used by harvesters in the Mackenzie River Delta.

> *"Us we went into Little Moose when we got those two whales. We just cut across Fish River, we like taxied in because it was kind of shallow for us because I had my big blue boat, and my son had his boat, and his is a small boat. So, us, when we followed him... he was ahead of us and we stayed behind and we just followed. He just told us to watch for some stumps and we hit a couple of times but we made it and... when we got to those whales... he asked if I wanted seal. And I said no, and he said "No, they're not seals, they're whales!". So next thing, we're hunting whales and just having fun! (Laughter) So it was fun, it was. But that big one sunk so we had to wait till next day to go pick it up, and get an extra couple of hands. So, my daughter came with us and helped us out and cut it up."*

When telling her story about how the hunt unfolded and the aftermath, Margot took care to explain that, although they were not prepared to harvest whales (they didn't have a harpoon or whale hooks to bring the animals out of the water), they could not resist seizing such an opportunity, where the whales were easily accessible and in shallow, calm water. Margot also described that her son had wanted to go to Shingle Point to harvest his first whale that summer, but instead received this chance. In Inuvialuit tradition, a hunter's first harvested animal of every species is to be shared with the community rather than kept for themselves. One older participant explained the reasoning behind this traditional practice, saying that if you give your first animal away, you will always be successful in your future hunts for that animal.

This hunt was Margot's son's first whale harvest, and he abided by Inuvialuit tradition and distributed the uqruq, muktuk and other products to the community. Margot described how thankful the community was when muktuk was shared openly, and how good that action of sharing made her feel.

> M.M. *"About two o'clock in the afternoon, we start cutting it up, working with it. And we cut it up, and then […] posted "Come and grab muktuk, whoever wants muktuk come and grab fresh muktuk". So, oh boy! A lot of people came! So, it was really nice. We were pretty busy out here."*
>
> E.W. *"Yeah! And how were people?"*
>
> M.M. *"They were really thankful, they were really… they said they never had fresh muktuk for a long time, and, you know… not very often people give muktuk away they say! So, they were happy about it."*

Another suggestion that was popular among participants was that of an 'on-the-land' program, where people would be educated by experienced Elders and knowledge-holders at Shingle Point over a time span of several days specifically to learn about the beluga whale harvest through experience. On-the-land programs are common practice among Inuvialuit and Gwich'in in Aklavik, with funding stemming from government and non-governmental organizations alike. The goal of these programs is to reconnect people to their culture, well-being and each other through land-based education. Judy Selamio elaborated on why she feels on-the-land programs are critical to engage youth in proper Inuvialuit harvesting customs.

> *"Like, today's generation today, you harvest beluga whale, you just take the muktuk and don't care for the meat and throw the whole body in the ocean. So that's not the way to do it. Respect, learn them to teach and respect the animal and not to throw the things in the ocean and whatever! Burn it. Teach the young generation today, because us Elders today, we won't be here very long. So it's better to try and find moneys out there and do more on-the-land programs every summer and promote it! Because a lot of us eat this muktuk, but we can't harvest it!"*
>
> - Judy Selamio

Multiple participants expressed their support for the development and integration of a program to bring youth to the land, however, some caveats for greater success were added by people based on their experience with the beluga whale harvest. A couple of participants highlighted how proper compensation would be needed for the Elders and educators of such a program, because not only are they sharing their knowledge, but they also have great responsibility for everybody's wellbeing on the Beaufort coast. One participant shared their reasoning why the leaders should be compensated fairly.

> *"And if they're gonna be doing a program I think that they people that are doing the program should be compensated more than they are compensated now. Because they gotta remember, they're using their camp. They have kids that are learning and then they gotta feed them, and they gotta show them, it takes more than seven days."*

In addition to proper compensation for their efforts, Annie B. Gordon and Dorothy Ross both recognized how critical it is to plan the logistics such as insurance and safety for such a responsibility. They both recalled that, in their past experiences, insurance issues raised barriers to taking people on the land, especially youth, and that proper research would need to be done to avoid failure over logistical hurdles. Many participants, while they were supportive of an on-the-land program, were concerned over finding youth that would be interested to stay out for the duration of the program. Desiree Arey, a young harvester, described how many of her peers would get 'bushed' when on the land for an extended period of time. While she personally wouldn't be interested in the program, she had hope that other youth would attend, learn and enjoy themselves.

One major condition that would be necessary for the successful implementation of this program is the length of time required for it to actually be effective and result in proper education. Multiple participants took care to specify that, while many on-the-land programs are only a few days to a week in duration, the beluga program would have to be at least two weeks in order to allow for the entire process of landing a whale and preparing it the traditional way to play out without excessive time pressure. One older participant who harvested whales his entire life shared his reasoning behind the critical importance for a longer program – at least three weeks.

> *“’Cause I mean, look I'm telling you... one week... one kid, I mean the kids go out for one week? They're just getting the hang of what it is to be Inuvialuit and out on the land. And then they have to go home? And they say, "Oh I don't want to go again, too boring, it's only one week." You know? Like, my boy growing up, you know, […]! When he was young, he went down to Shingle Point with us and my dad was alive. He stayed out there right till the end, in September, first or sixth. When he was coming home, he didn't want to come home.”*

Jordan McLeod explained that fifteen to twenty days would be required for the camp, because the weather is a major factor in a successful or failed hunt. Renie envisions a month-long camp where whaling would be facilitated, but acknowledges that it is an activity that requires patience and a degree of luck, and therefore cannot be rushed. She sees this program as an opportunity to reconnect people with every aspect of being Inuvialuit and living on the coast – a holistic education rather than one just centered on the whale harvest.

> *“Well if you're gonna go out there for a good month, you have to be prepared to... for that whale to come through, be prepared for the fish to go through. Things like, go out on the land and show them, "This is how, this is where our grandparents used to pick these plants", and whatnot. You have to have a plan for day-to-day with kids or with these young peoples that are younger now. Show them how to prepare, get an Elder person to go out whaling with them, bring them back with it and... get maybe a few younger women to you know... younger man and younger woman to all work hand in hand together? That should be... get them back interested again to get to whaling camps.”*

An older participant mirrored Renie's comments, saying that, with this program, beluga could be the focus but it would be a chance to teach people other land-based skills.

> *"I mean, three weeks, you'd learn not only beluga harvesting but you'd learn that... you know... what else you could get off the land. Like you know in the fall time, we go down, we could have berries, they're ripe, you know while we're fishing and making dryfish and everything. The berries are growing. And once you get all that done, you go pick up your berries. You know, not only teach them about harvesting a whale and everything, but you know."*

Another suggestion that was shared by several participants is to include not just youth and Elders in the program, but to also consider the 'middle' generation of parents and older adults. This generation is often left behind in on-the-land programs, and one participant explained that in order for children to fully connect to the experiences on the land and to bring them home, they need to be able to share those experiences with their parents or kin. Dean Arey also acknowledged that the middle-aged population needed to be included in these programs, but emphasized that, if this program is to be done traditional in the Inuvialuit way, men will hunt the whales while women will lead the butchering and preparation of the whale as food.

> *"A lot of people, like if they have programs to take Elders and youth, take them out so they can learn, if they find money. I think that would be a good thing for the youth to see. And the middle age, huh! I think that would be good if they can find money for that to take them out. And they can have a whaling camp and, you know, that, where they can see it and take the youth out! And women, they don't go out, they stay at camp. Only the men always go out and hunt. Me, I learnt that from the Elders. The women, we don't take women out. Always men will go out.*

One participant identified bringing whole families out as beneficial logistically because parents can be responsible for their children, taking the onus of baby-sitting away from the Elders. They also described how significant it is to have families share lived experiences like what the program would offer – that knowledge starts in the home and will stay in the home if it is shared. They continued to explain that the program needs to be designed to be more sensitive to Inuvialuit culture, with respect and culturally significant parts of the whale highlighted to bring youth back to their roots.

CHAPTER 4 DISCUSSION

The results of this research offer new insights about the relationships between Aklavik hunters and beluga whales in the context of recent social and environmental changes. The findings show that although many Aklavik residents used to be prolific beluga hunters, the beluga harvest has since declined, notably beginning in the 1990's and continuing to present day (DFO 2000; FJMC 2018). This new reality can be attributed to a combination of factors and processes stemming from both social and environmental changes culminating in fewer people participating in the beluga hunt. Although this trend towards lower harvest numbers can be observed among other whaling communities such as Inuvik and Tuktoyaktuk, the decline is especially pronounced at Aklavik's western whaling camps (FJMC 2013; Harwood 2002). Results revealed, however, that despite reduced harvest numbers, the whale hunt continues to be culturally important to many people in Aklavik who have a desire to restore the hunt. The findings of this research help to explain the main causes behind the drop in beluga hunting by Aklavik hunters over the last three decades, the implications of this decline for people, and perspectives on the future of beluga hunting.

The finding that declines in beluga hunting can be attributed to both environmental and societal changes is central to this research, enforcing the holistic nature of Inuvialuit connection to the land and subsistence livelihoods (Hart and Amos 2004; Irniq 2008). Several participants linked various factors to one another when describing their difficulty with the beluga harvest, not placing one above the other in importance. If a person identified being unable to hunt whales due to inexperience, this was accredited to multiple factors, such as no mentors to learn from, inability to hunt due to financial demands, and/or lack of confidence due to changing weather conditions, which all can impact motivation and peoples’ values. This is consistent with what has been recorded elsewhere in the Arctic, where an array of factors were identified as drawing people away from engaging in land-based activities, and the subsequent effects on adaptive strategies and mental well-being were explored (Pearce et al. 2009; Cunsolo Willox et al. 2014).

When evaluating the results, certain ‘anchor points’ were identified as nuclei from which other factors of change emanate. Although they are presented as separate points of discussion, it must be noted that all changes affect one another through both space and time, and that by no means are they individual entities.

A dual effect resulting from the passing of Elders and the rising influence from southern society is changing how people view the beluga harvest and its associated values.

Elders’ memories and explanations of the beluga harvest in the past, shared during interviews, described how a specific set of Inuvialuit values guided life at whale camp and during the whale hunt. These core values included teamwork, reciprocity, story-sharing, knowledge sharing through stories, observation and hands-on learning, respect (for each other and for the animals), and patience (Hart and Amos 2004; Irniq 2008; Nagy 1994). Respectful ways of conduct at camp created opportunities for whales to approach the shore, teamwork was required to land and process the whale, reciprocity guided the distribution of the whale to those who assisted with the harvest and to those in need, and knowledge-sharing with patience promoted an environment where younger Inuvialuit learned to harvest beluga themselves. As Elders who grew up on the land pass on, so disappears the generation that exemplifies a deeper connection to Inuvialuit identity, with lived memories of subsistence before settlements and exposure to southern cultures (Inuuvik Community Corporation, Tuktuuyaqtuuq Community Corporation, and Aklarvik Community Corporation 2006).

The passing of Elders has often resulted in not only the loss of knowledgeable teachers, but also in the breakdown of family units, with implications for beluga hunting. Through this research, it became evident that Elders have a pivotal social position where they "hold families together" and also act as an anchor for other Elders – once they pass on, those they held together often drift apart and go their own ways. This means that some families no longer frequent the coast where people hunt whales, or do not engage in the same subsistence activities as they used to, furthering their divide from the beluga harvest. In conversations during my trips to Aklavik, people recalled how several Elders passed away in the 1990's, and some linked those comments to when they started noticing less involvement in the beluga whale harvest. These comments are supported by the harvest numbers from Fisheries Joint Management Committee (FJMC, 2018) that demonstrate a steep decline from 31 whales harvested in 1990, to only six in 1999.

It was frequently said that "Elders drive the hunt" for beluga, with their expertise guiding both the pursuit of the whale as well as the preparation, and that without their instruction, some people felt unable to successfully harvest. Even experienced hunters would not take full ownership for their knowledge or potential for leadership, and comment that they were 'still learning' from Elders, and would always take guidance from those Elders if they were present at the harvest. This mentality and justification of what constitutes as 'knowledge' and 'expertise' is shared among other Inuvialuit and Inuit, such as beluga harvesters in Ulukhaktok (Peter Collings, Pearce, and Kann 2018). The dependency of younger generations on the instruction of Elders in land-based activities is displayed at length in multiple quotes from Inuit in the 1976 Department of Indian and Northern Affairs *Inuit Land Use and Occupancy Project*. In comparison to other species harvested for subsistence, the beluga whale harvest has multiple factors that require confidence and expertise; their size and power are considerable, and the vulnerability of hunting from a boat amplifies the level of risk (Hart and Amos 2004). The point is particularly salient because the Aklavik guidelines for hunting beluga specifies that “each boat must carry at least one experienced hunter. The designation of experienced hunters shall be made at each camp” (p. 95, Community of Aklavik, Wildlife Management Advisory Council (NWT), and The Joint Secretariat 2008). The value of having an experienced hunter in the boat is immeasurable, as they not only help with the actual harvest, but also in determining whether conditions are safe to engage in the hunt at all. With fewer experienced beluga hunters in the community, there are fewer people who can organize and lead hunts, passing on knowledge to younger generations.

Not only is Inuvialuit knowledge being lost from the top down with the passing of Elders, but there is ever less Inuvialuit knowledge development from the bottom-up, with fewer youth participating in land-based activities (Freeman 1976; Pearce et al. 2011). Many Aklavik youth are spending most of their spare time engaged in community-based activities such as the Internet, television, social media, video games, and sports, while also being enrolled in formal education during the school year. World media, Euro-centric culture and technologies are permeating into the psyches of young people in Aklavik, shifting their values and aspirations away from a subsistence lifestyle. Most of these technologies require access to power and serviced locations, grounding people in town and creating more sedentary lifestyles, thereby keeping people in the settlement rather than on the land (Pearce et al. 2011). Interviews with younger participants show that some of the core Inuvialuit values do still exist among their generation; however, all participants agreed that they are fading and shifting as time passes, and that the ‘old ways’ are being lost. As youth become more estranged from being on the land, there is less opportunity for them to develop an emotional connection to their Inuvialuit identity and land-based ways of being. Many participants agreed that, in order to foster a generation of hunters, the connection first has to be made. This finding is consistent with what Inuit living elsewhere in the Arctic have expressed for generations since the onset of widespread contact with southern culture, and has been recorded by Freeman (1976), Condon et al. (1995), Pearce, Ford, Willox et al. (2015) and Hoover, Ostertag, Hornby et al. (2016). The situation can be likened to a positive feedback cycle over time; with each new generation, a stronger connection to Western culture emerges, and with each Elder that passes on, a vault of knowledge from a bygone era disappears. The loss of experienced Elder beluga hunters and the rise of younger generations less interested in beluga hunting, partially explains in the decline in the hunt.

Modern and equipment and technology has resounding implications on the accessibility of the beluga harvest and on Inuvialuit values surrounding the harvest.

The finding that the cost of mechanized equipment and supplies for hunting has limited who can participate in the beluga hunting is consistent with what we know about the complications surrounding rising costs of hunting elsewhere in the Arctic (Pearce et al. 2015; Tester 2010). Unlike the past when people traveled slowly and spent considerable amounts of time camping on the coast, fishing and hunting beluga, people today use powerful motor boats, can travel long distances, but often for short periods of time (day trips or weekend), and for a high cost (Andrachuk and Smit 2012; Condon, Collings, and Wenzel 1995) This affects the nature of the hunt, fostering the “grab and go” mentality, which is in sharp contrast with the patience and respect that characterized beluga whale hunts historically (Inuuvik Community Corporation, Tuktuuyaqtuuq Community Corporation, and Aklarvik Community Corporation 2006). In addition, boats and other hunting equipment are considered individual property, or they are sometimes shared among nuclear family and close friends. This opposes with the communal hunting attitude that was prevalent with schooners and larger whaling boats when Aklavik's beluga harvest was in its prime. There is a divide in who can access the beluga hunt, limiting it to those who have the financial resources to purchase and maintain a boat and acquire supplies for the trip. Considerations for reviving beluga hunting in Aklavik will need to address this financial barrier.

Reduced access to hunting beluga whales is driven partly by effects of a changing environment, specifically an increase in unpredictable storms and flooding along the Beaufort Sea coastline, as well as extensive erosion and shallow water.

Two factors of climate change are especially impacting Aklavik's beluga harvest. An increase in storms and storm surges along the Beaufort coast has been observed both by science and by Inuvialuit residents from communities in the Inuvialuit Settlement Region (Andrachuk and Smit 2012; Ramage et al. 2017; Pearce et al. 2010), creating a difficult environment in which to conduct the beluga whale harvest. Permafrost melting throughout the Mackenzie Delta and along the Yukon North Slope Coastline has contributed to a substantial increase in erosion, with increased suspended sediment in the water and altered water depth in channels and along the shoreline. This has resulted in preferred beluga harvesting locations, such as Niaqunnaq (West Whitefish) and Aqpaȓuatchiaq (Running River) no longer being accessible due to excessively shallow water and flooding. Storms have a dual effect, in addition to altering the coastline with storm surges (Andrachuk and Smit 2012; Bancroft et al. 2001), they provide an element of danger that is concerning for the beluga harvest.

Findings demonstrate that Elders of previous generations could predict weather based on certain signs, allowing people to travel and hunt with confidence. However, increasingly erratic weather patterns make these teachings no longer applicable, thus increasing vulnerability to extreme weather and sudden changes. Inuvialuit treat the ocean with more wariness than previously, constantly aware of the danger of storms when harvesting beluga whales or traveling. For some, this risk is enough to deter them from engaging in the beluga harvest.

Changing channels have been observed by Aklavik residents when traveling through the Mackenzie Delta and Estuary, with shallow water often impeding access to camps and altering routes to the coast. With ever-increasing erosion from slumping permafrost, this new reality has the potential to become a significant hurdle in future years. Extensive knowledge of the surrounding waterways is imperative to be shared among the community so all travelers have the ability to adapt to changing conditions.

The concept of climate change is widely recognized by Inuvialuit in Aklavik, as they observe extreme fluctuations and long-term trends of environmental change in their interaction with the natural world. However, the term of ‘climate change’ itself is a largely Western construct, stemming from science, policy and society. It is important to note that, although many Inuvialuit now talk about ‘climate change’ as a whole, attributing it to a large-scale, systemic mechanism of environmental change across the Arctic, there is distinction between ‘climate change’ as an overarching entity versus localized ‘changes to the environment’ or ‘changing land'. Due to the prolific number of natural scientists conducting research in the Inuvialuit Settlement Region, there is a heightened awareness of 'climate change' based on community interaction with these projects, but it is important to maintain perspective on the scales of applicability that distinguishes 'climate change' from a 'changing environment'.

This culmination of environmental changes has resulted in Shingle Point (Tapqaq) being the main coastal camp used by Aklavik residents during summer months for harvesting activities.

The combined effects from shallow water, flooding due to storm surges and erosion have washed away/cut off accessibility to traditional whaling camps such as West Whitefish (Niaqunnaq) and Running River (Aqpaȓuatchiaq). These camps were previously the major whaling stations used by Aklavik residents, situated in shallower and sheltered waters where more beluga congregated and were easier to catch. Shingle Point (Tapqaq), which is now the main coastal camp, is a spit of land with one sheltered and shallow 'harbour' side, and one turbulent and deep 'ocean' side.

Shingle Point is a traditional camp with strong emotional ties, however, its suitability as the main whaling camp is questionable. Many participants described how loud noises generated by ATVs, outboard motors, and camp life deter whales from coming into the harbour side of the point, which is the preferred area to harvest whales. There are previous reports of beluga whales being sensitive to noises and avoiding areas with high motor traffic (Huntington 1999). Inuvialuit know this about the whales and traditionally have required silence at camp for successful hunting (Hart and Amos 2004). Findings suggest that the respect for the hunt has declined, those who still want to hunt no longer have silence when whales are sighted. Some harvesters noted this difficulty as a main deterrent for whales presenting themselves in ideal hunting conditions and avoiding the harbour side. The distribution of whales is now typically in the open ocean, with deep water and sudden storms complicating the hunt, reducing the chances of success and resulting in failed pursuits, long tow times (>3 hours in some cases) and potential for sudden, dangerous winds. These conditions result in extremely high fuel costs and require intensive knowledge and confidence on the ocean. Many harvesters do not possess the means to land a beluga whale in such conditions, or no longer want to engage in the hunt because it is not worth the risk and cost for a small margin of success.

In the past, sea ice was beneficial in the beluga whale harvest, calming the waves and creating narrower spaces in which whales could be chased. However, findings demonstrate that the ice presence is decreasing earlier in the season, with belugas now sighted in mid-June of some years. This timing is not conducive to peoples' schedules in town; although some harvesters will travel to the coast to check for hunting opportunities throughout June, most people depart for the coast after Canada Day (July 1st) celebrations in Aklavik, when it is generally too late to hunt belugas using sea ice as an ally. Holidays and socializing often take priority over some coastal harvesting activities, even when at the coast. Findings show that Shingle Point has a growing 'vacation' atmosphere, with many people commenting on how there is now less drive to harvest food and more inclination to relax with family. The Shingle Point Games, ongoing for the last two decades in mid to late July (which is considered prime beluga harvesting season), have created a sense of community and fun at the coast. However, the games negatively impact beluga whale hunt due to a high number of people present, which increases noises from boat and ATV traffic, and shifts the mentality away from harvesting and instead to socializing.

Aklavik's beluga whale harvest possesses a rich knowledge base, cultural grounding in Inuvialuit identity, and represents an outlet for improved physical and mental well-being, and it is important to many Aklavik residents to continue into the future. In order to gain perspective into the unique and urgent situation at hand, we must consider the time scale from the emergence of centralized communities in the 1940's to the present day, and how dramatic change beyond comprehension has occurred in a single lifetime for many Inuvialuit in Aklavik. It is critical to contemplate this deeply in order to fully grasp the significance of the findings of this project so they can guide an appropriate response to this subject.

What are the implications of these changes for livelihoods? How are people adjusting to the current reality stemming from these effects?

Of all of the species harvested by Inuvialuit in Aklavik, *qilalukkat* most embody the ways of the Elders and 'long ago', with traditional Inuvialuit values such as teamwork, sharing and expert environmental knowledge all critical to hunting success. However, as livelihoods have changed in Aklavik over the years, those who still want to engage in the beluga harvest and/or consume products derived from beluga have had to adapt to more reliable methods. One such method is that people undertake a longer journey to Inuvik or Tuktoyaktuk whaling camps on the East side of the Mackenzie Estuary where the chances of a successful hunt are higher due to shallow water, and more emphasis put on the whale hunt. Although the costs for travel are higher than those to Shingle Point, potential costs associated with the actual harvest tend to be substantially less due to shorter chase and tow times, and there is a greater guarantee of a successful harvest.

Another adaptation that has developed in recent years is that the Inuvialuit Regional Corporation (IRC) has begun selling five-gallon pails of *muktuk* and *uqruq* for $200, sourced from the more plentiful harvests from Tuktoyaktuk and Inuvik's whaling camps. Previously $150, the IRC price rose in 2018, and the higher price has been criticized by some Inuvialuit as a means to profit rather than provide to its people. An additional concern with the IRC's five-gallon pails is that the purchaser does not know who made the *muktuk* and *uqruq*, which raises the fear of poorly prepared food and the potential for botulism. Despite these drawbacks, this is a viable option for those who cannot or will not engage in the beluga harvest, but desire *muktuk* for their yearly country food supply.

Although the consumption of beluga whale food products was often discussed with delight, it does not appear that *muktuk* and other beluga foods are generally considered as an essential food staple, such as caribou, where regularly people travel long distances by vehicle and boat in hopes of a successful hunt. Instead, beluga products are decadent treats or nostalgic reminders that people crave and consume more as an addition to their diet, or for fuel on cold winter days. However, youth generally did not seem as inclined to consume beluga products, likely because they have less exposure to it in their lifetimes. These findings therefore suggest that, although beluga remains an important addition to some peoples' diet, it is not as widely essential as caribou, fish, or moose, and that its consumption is dwindling as generations pass.

As more people move away from subsistence harvesting and consuming country food, there are some social implications to consider. More health problems are emerging from a reduced involvement in subsistence livelihoods, both physical and mental. Physical health problems are largely associated with inactivity, consuming less nutritional country food and more processed store-bought food, which has implications for development of diabetes, poor nutrition and obesity (Martens 2015; Rudolph and McLachlan 2013). Wild-caught, or country food, is recognized as being nutritionally dense, providing people with essential vitamins, minerals, and other nutrients (proteins, omega-3 fatty acids, riboflavin, iron and zinc, among others) simply not found in processed, store-bought food (Wesche and Chan 2010). There are wider implications for food insecurity and lack of food sovereignty, which Arctic Indigenous communities are especially susceptible to – 41% of the Canadian Inuit population has been identified as food insecure (Hoover et al. 2016). Stress is strongly associated to food insecurity, and a reduced involvement in Inuit subsistence harvest cycles has been reported in previous literature as a contributor to feeling trapped, losing motivation, and a disconnection from identity (Freeman 1976, Condon et al. 1995, Cunsolo Willox et al. 2014). Increasing recognition on the benefits of land-based activities on the mental well-being of individuals is being explored in both the research spectrum and on the policy and international levels (Cunsolo Willox et al. 2014). In 2010, the American Psychological Association Task Force on the Interface between Psychology and Global Climate Change called to action research initiatives examining psychological perspectives on the effects of climate change (Cunsolo Willox et al. 2014).

Most notably in summer 2018, some people in Aklavik revealed that the land acts as a powerful healer; drawing people away from the heaviness of life in town and providing an outlet to rejuvenate and restore their inner peace. A couple of participants elaborated on how they notice individuals transform when they are on the land – how difficult youth become more respectful, or how Elders become revitalized. Because it is such a team activity, beluga harvesting is especially grounding to those who may feel lonely or displaced – it requires joint cooperation throughout the process of harvesting, and the returns offer an opportunity to give back to the community and provide to those in need. Reconnecting the community to the beluga harvest could offer opportunities to increase mental and physical well-being.

Barriers to participating in beluga hunting represent strategic policy entry points to support beluga hunting in the future.

In the Inuvialuit Final Agreement (IFA) of 1984, it was outlined that one of the responsibilities of Inuvialuit is to "protect and preserve the Arctic wildlife, environment and biological productivity" (Committee for Original Peoples' Entitlement and Canada 1984) of the settlement region. This has been accomplished largely through co-management initiatives between different levels of government and local Hunters and Trappers Committees, with specific beluga co-management stemming from the Beaufort Sea Beluga Management Plan and the Fisheries Joint Management Committee (Berkes, Berkes, and Fast 2007). These initiatives are highly effective but attribute much of their success to long term hunter-based monitoring programs, beginning in 1973 by the Fisheries and Marine Service of the Government of Canada and continuing through the Fisheries Joint Management Committee and Fisheries and Oceans Canada through till present day (Harwood et al. 2002). If Aklavik does not continue its beluga whale harvest into the future, there will be implications for the community's influence on management decisions and contributions. Coming at a time globally where there is a joint push for more inclusion of Indigenous knowledge in research, literature and government, this is not an ideal situation for the Aklavik HTC, and it is likely in their vested interest to continue the community’s beluga harvest to ensure their voice, specific perspectives and knowledge can inform the public for years to come.

Considering that knowledge transmission in Inuvialuit culture is largely conducted through on-the-land education and practical, hands on training (Pearce et al. 2011), the beluga harvest is grounded by intergenerational teachings, but is also reactive to changing technologies, societies, and influences. There is a widely followed procedure when chasing and preparing whales that was consistently and repeatedly described among experienced beluga harvesters. Although harvest numbers are low and fewer Inuvialuit are engaged in the hunt at present compared to historically, that does not equate to knowledge being lost altogether in Aklavik. Many harvesters still maintain vast knowledge of the beluga hunt and it must somehow be passed on to younger generations if the harvest is to continue.

While this project will be shared with wider audiences through publication, this is not the most effective method to return tangible results to the community of Aklavik itself. Countless projects documenting Indigenous knowledge have been undertaken, however, they do not provide much value to the knowledge-holders themselves if they stay on a shelf in an archive, gathering dust (Simpson 1999). Even though I have chosen to follow the OCAP principles, where Aklavik HTC will have ownership, control, access and possession of the project’s data (First Nations Information Governance Committee 2007), the benefits are shallow and limited if there is no trusting relationship, and if no follow-up action is taken from the momentum of this research. Critiques of OCAP suggest that it facilitates researchers to engage in the bare minimum of reciprocity, and I recognize that by giving Aklavik HTC ownership, control, access and possession of the data, this does not ensure that it will benefit the community and participants as a whole (Morton Ninomiya and Pollock 2017). Firstly, the Aklavik HTC is run by a couple families and small-town politics are heavily at play in the benefits and opportunities available through the Aklavik HTC. Secondly, the project is incomplete if data is simply left with Aklavik HTC, as the third research objective actively looks to establishing a plan of action for the future, and it is my responsibility and moral obligation to help give back to the community as a whole. The findings of the third research objective suggest two culturally appropriate, active methods where this project's insights and the community's knowledge of the beluga whale harvest can be mobilized to benefit all Inuvialuit in Aklavik. There is a widespread call to research engaging with Indigenous communities to locate themselves within the research, recognizing their limitations through a critical lens, but also using the privilege of their position to be effective, reflexive and humble allies (Morton Ninomiya and Pollock 2017). The benefits of identifying local, real-world issues and connecting knowledge systems in the action taken to solve them is highlighted as critical to effectively honouring Indigenous knowledge systems (Bohensky and Maru 2011). It is hoped these methods will create opportunities for more harvesters to gain enough confidence and interest to continue the hunt on their own initiative into the future.

One suggestion focuses on creating an on-the-land program specifically geared towards the beluga whale harvest, while the other is to establish a community harvest for beluga whales. This course of action is congruent with other initiatives to engage Inuvialuit and Inuit with land-based activities, monitoring, cultural practices, and general well-being, and was explored extensively in Pearce et al. 2011, where land-based knowledge transmission among Inuit men in Ulukhaktok was assessed. Programs cited in this work stem from funding by the Canadian Rangers, Aurora College, Brighter Futures, the Aboriginal Healing Foundation and the hamlet of Ulukhaktok (Pearce et al. 2011). In Aklavik, when describing their ideas for successful implementation of these measures, people took care to emphasize that a longer time period was needed for this activity – a consensus of at least 10 days was agreed upon. This would allow for people to engage in the entire process of preparing the whale on the land in the traditional way, and offer an opportunity for Elders to restore Inuvialuit values of patience, reciprocity, and hard work. Findings also showed that it is important to consider all generations in the development of this program – including the parents and middle-aged population rather than just connecting youth and Elders. People felt that if the parents were included, then skills could be more successfully implemented in each household.

Both of these programs would distribute costs of equipment and transportation more widely and remove the onus from the individual to spend large amounts of money for just themselves and their next-of-kin. Finally, a couple participants mentioned it was important to consider all residents of Aklavik when hiring for the programs, and to not fall victim to nepotism or preferential treatment. They viewed this program as an opportunity to provide employment to those in need, and cautioned against hiring somebody based on their societal status rather than their knowledge of the beluga harvest. If conducted by taking these recommendations into consideration, this project can be used by the Aklavik HTC to identify funding opportunities and strategic policy entry points to benefit all Inuvialuit of Aklavik.

This research provides a snapshot in time, capturing the perspective of a traditional hunt at the edge of a precipice. On one hand, Aklavik is still rooted in subsistence livelihoods, with a relatively large population of active harvesters year-round. However, beluga as a harvested species can be likened to a ‘canary in a coalmine’, where a cocktail of complicating ingredients has pushed the viability of the hunt to a tipping point in the community. Although many of these ingredients impact subsistence livelihoods in general, the specific recipe for beluga whales has resulted in a substantially declined harvest and an uncertain future.

Despite the factors at play which dissuade Aklavik residents from harvesting beluga whale, it is critical to also acknowledge the resilience and adaptability of residents in the face of change. Throughout the course of listening to interviews, it became evident that people are adapting to changes effectively and utilizing whatever tools at hand – both tangible and intangible – to better their day-to-day situation. Emotional connection to the whale harvest is still prevalent among many, and there is a quiet strength in peoples' assurances that the whale harvest can rebound to previous days if more people are able to establish a connection to it. It is evident through integration with Aklavik's daily life that the beluga whale harvest still holds a powerful sway over many active hunters. This was reinforced during opportunities where the beluga harvest was facilitated by more conducive conditions to success and deterring factors such as accessibility, coastal storms, fuel costs and deep water were eliminated: In 2017, when a mother and calf swam into Little Moose River, and in 2018, when a pod of roughly 60 whales swam up Schooner Channel near Aklavik. Both of these occurrences were unusual, but created a buzz and mobilized hunters to capitalize on the events with successful harvests and created a chance for young harvesters to experience the whale hunt for the first time. It was humbling to listen to peoples' passion when recounting the stories and to see the emergence of strongly rooted Inuvialuit values of sharing, teamwork and reciprocity. In 2017, one of those whales was landed by a young hunter, was their first whale landed, and was shared openly among the community. In 2018, seven whales were landed from the pod that swam near Aklavik, and many community members got to work with beluga for the first time, with *muktuk* and *mipku* distributed across households Aklavik. Opportunities such as these whale harvests are critical in skills transmission from Elders to the younger generation, and also in establishing a connection to a subsistence activity that people may otherwise not have the opportunity to engage in. By carrying the momentum generated from these recent beluga hunts into policy and development of programs, it is possible to rejuvenate Aklavik's beluga harvest for years to come.

CHAPTER 5 CONCLUSION

The aim of this research is to improve understanding of human-beluga whale relations over time and the implications of change for the beluga whale harvest in Aklavik. This was accomplished through **(1)** documenting and describing the role and importance of subsistence hunting in the community of Aklavik, with a specific focus on human-beluga relations; **(2)** gaining community perspective on how these relations have changed over time, including the drivers of change (e.g. social, cultural, economic, political, environmental), and; **3)** assessing the implication of these changes for the future of the beluga hunt, and identifying culturally appropriate action that could be taken to revive the harvest. This chapter summarizes the key findings of the research, discusses the project's scholarly contributions and practical considerations, explores the project's limitations and finally highlights ideas for further research in relevant fields of study.

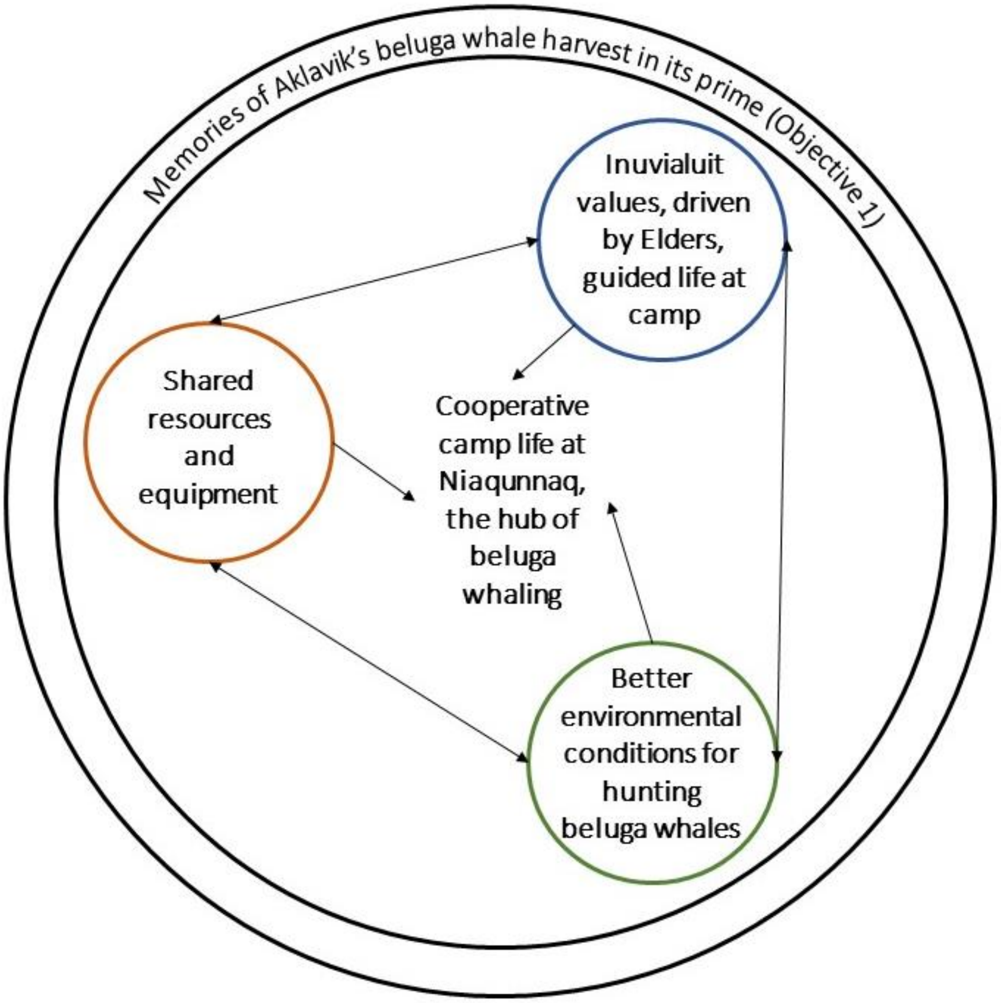

Memories of Aklavik's beluga whale harvest in its prime (Objective 1)
Inuvialuit values, driven by Elders, guided life at camp
Shared resources and equipment
Cooperative camp life at Niaqunnaq, the hub of beluga whaling
Better environmental conditions for hunting beluga whales

Figure 10: Anchor points of research objective 1

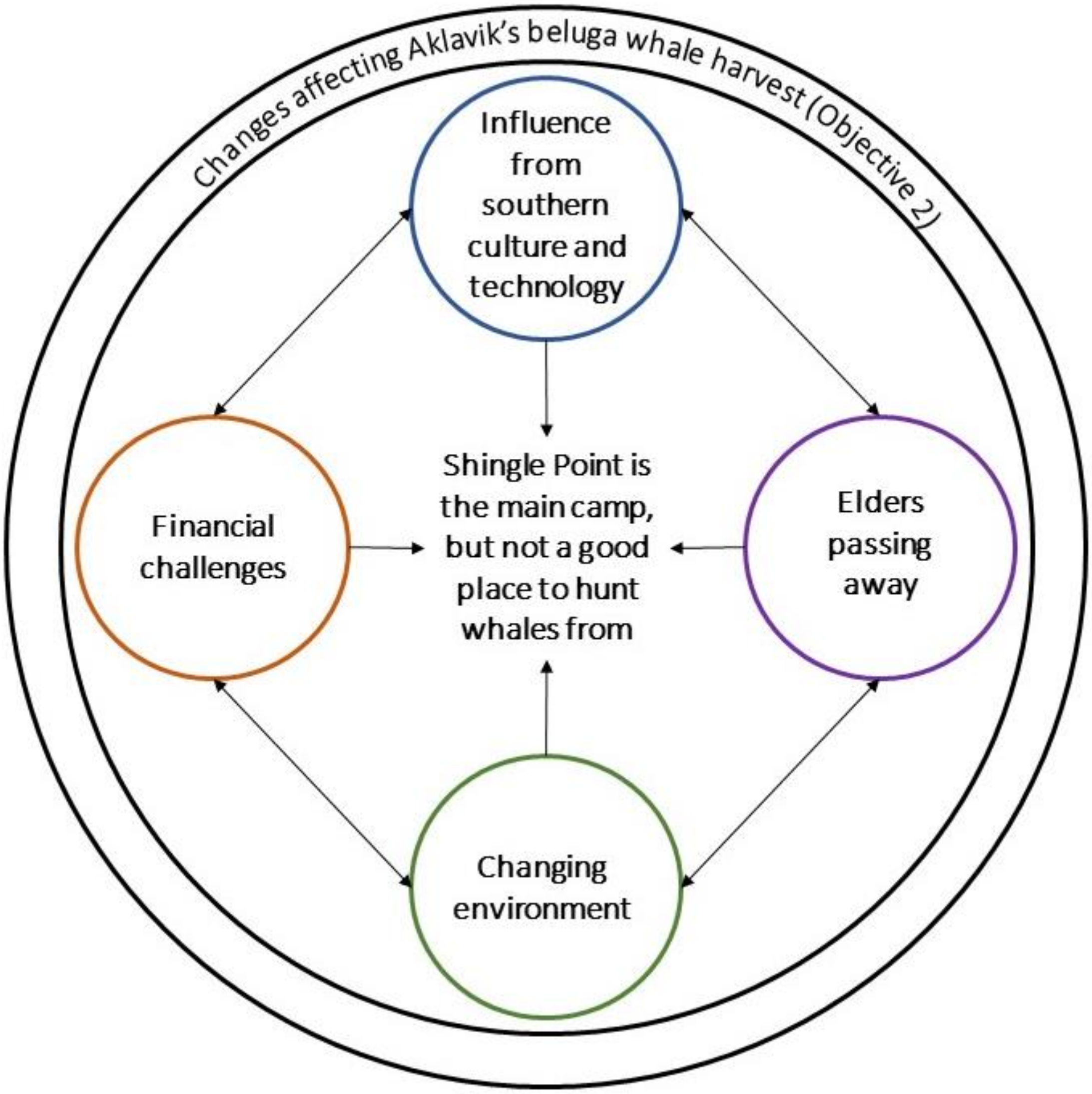

Changes affecting Aklavik's beluga whale harvest (Objective 2)
Influence from southern culture and technology
Financial challenges
Shingle Point is the main camp, but not a good place to hunt whales from
Elders passing away
Changing environment

Figure 11: Anchor points of research objective 2

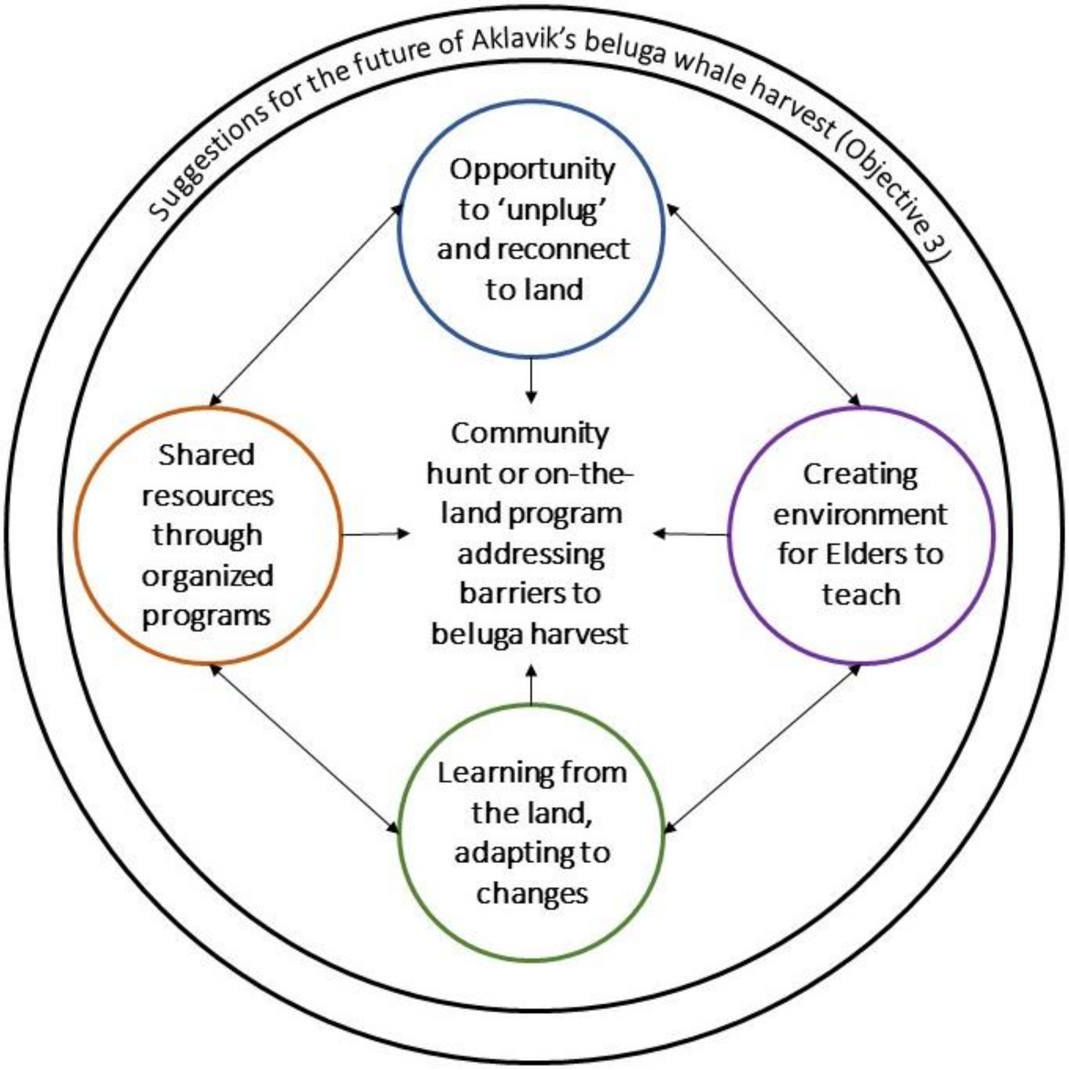

Suggestions for the future of Aklavik's beluga whale harvest (Objective 3)
Opportunity to 'unplug' and reconnect to land
Shared resources through organized programs
Community hunt or on-the-land program addressing barriers to beluga harvest
Creating environment for Elders to teach
Learning from the land, adapting to changes

Figure 12: Anchor points of research objective 3

5.1 Summary of results

The following three figures (Figure 10, 11 and 12) provide a visual summary of the anchor points of the three research objectives, listed above. Note the colour coding of themes that carry through temporally, with green representing the environment, blue and purple representing values and Elders, and orange representing logistics and finances.

1) *Participants' memories of the beluga whale harvest in Aklavik demonstrate that a specific set of values, behaviours, and techniques contributed to high harvest numbers in the past.*

The history of beluga whale harvesting among Inuvialuit in Aklavik is rich and has been ongoing for generations, with a strong culture tied to location, techniques and values. Historically, whales were primarily harvested at Niaqunnaq (West Whitefish Station), where water was shallow and camp life facilitated a successful harvest. Specific techniques for hunting and preparing whales were followed and passed down to younger generations via learned experience, oral history and Inuvialuit values. These values guided life at camp and centred around cooperation, patience, teamwork, respect, community and sharing. Elders identified all of these dynamics – social and environmental – as being critical to the past high harvest numbers and widespread involvement in the beluga whale harvest.

2) *Climate change is impacting peoples' interaction with accessing the coastline and limiting peoples' ability to successfully harvest beluga whales.*

Unidirectional and long-term warming of the Beaufort Sea and Mackenzie Delta environments has resulted in observed changes that directly impact Inuvialuit subsistence livelihoods. Specific climate-driven changes identified in the results include: increased erosion within the Delta and along the Beaufort Sea coastline; an increase in cyclogenesis in the Beaufort Sea, and an earlier spring breakup and longer open water season. These environmental drivers impact the beluga whale harvest by changing access to the Beaufort coast throughout the network of estuarine channels, reduced access to traditional and preferred whaling camps, an increased element of risk associated with ocean travel, and reduced ability to utilize sea-ice as an ally during the whale hunt.

3) *Economic barriers are negatively impacting peoples' ability to engage in the beluga harvest.*

Results indicate that, of all subsistence activities in Aklavik, the beluga whale harvest is among the costliest to engage in, requiring large amounts of gas for travel and tow times, ammunition and equipment for the hunt, access to a boat, the ability to buy provisions for a longer trip, and more time available to engage in a successful harvest. Due to high unemployment rates and exorbitant prices for fuel and equipment, coupled with increasingly unpredictable weather which can lead to complications, many residents of Aklavik do not possess the financial means to support their participation beluga whale harvest.

4) *Environmental and social changes have resulted in Shingle Point being Aklavik's main coastal camp, but its suitability as a whaling camp is being called into question.*

While Shingle Point is a traditional Inuvialuit camp that has been used throughout history for summer activities such as fishing, caribou hunting, whaling and berry picking, it was often the secondary camp for whaling, with Niaqunnaq (West Whitefish) historically the epicentre of

Aklavik whaling activities. Because Niaqunnaq and other camps such as Running River are no longer easily accessible due to shallow water and alteration of the coastline, Shingle Point is now the coastal hub of the summer months. Traditionally the beluga harvest at Shingle Point required silence and cooperation to allow whales to enter the shallower, calmer ‘harbour side’ and facilitate hunting conditions. However, a shifting social dynamic at Shingle Point has resulted in increased traffic, loud camp noises, and less overall regard for the whale harvest, thus limiting whale presence largely to the deep, exposed and unpredictable ‘ocean side’. Hunting whales from the ‘ocean side’ has often resulted in long chase and tow times, increased vulnerability to quickly changing weather patterns, and a higher level of risk with reduced chance for success.

5) *A changing social dynamic is occurring in Aklavik where residents are moving away from Inuvialuit values and towards Western culture, which in turn negatively impacts the beluga whale harvest.*

Results have demonstrated that Inuvialuit values are instrumental in successfully grounding and guiding the beluga whale harvest, with values such as respect, sharing, patience and teamwork central to this subsistence activity. Elders embody and practice many of these values, and through their teachings and experience, they have the ability to pass on this intergenerational knowledge to future generations. However, there are deep implications behind the passing of Elders concerning the beluga harvest. Not only are less Elders present to share their knowledge with younger generations, but Elders also play a pivotal role in family units, often said to “keep families together” and drive the beluga whale harvest at the coast. In conjunction with the passing of Elders, the omnipresence of Western culture and values is ever-increasing, shifting peoples’ priorities away from the harvest and consumption of beluga whales, and more towards southern influences such as education, technology, social media and store-bought food.

6) *The future of the beluga harvest is uncertain, but two proposed courses of action could contribute to a rejuvenation of the whale hunt.*

The consensus on the future of beluga harvesting among participants in Aklavik is divided, with some people stating with certainty that the harvest will continue, and others resignedly admitting that they could see the harvest fading away. However, two courses of action were suggested that could help revive the beluga whale harvest by allowing more people to connect with the coast, discover the community aspect of the hunt, and create bonds with experienced harvesters. These two routes include either a community hunt where costs would be offset through shared resources and a group outing, or through an on-the-land program, which would provide an organized land-based education opportunity guided by Elders and experienced harvesters.

5.2 Scholarly contributions

The basis of this project is interdisciplinary; it is academic in nature and follows protocols for graduate studies, publication and ethnographic research, but it is also largely guided by considerations for Indigenous research methods and Inuvialuit forms of inquiry and knowledge-sharing. As a city-born, academic settler engaging with Inuvialuit people and culture in a meaningful project representing their interests, this path of navigating between two worldviews is one that attempts to ensure the project’s integrity, success and mutual benefit. This research incorporates theoretical approaches such as “Two-eyed seeing” (Lambert 2014) and the “ethical space of engagement” (Ermine 2007), while also being directed by Inuit Tapiriit Kanatami (2007) on reciprocal research with Arctic Indigenous communities. By seeking guidance from

Indigenous scholars such as Kovach, Absolon, Smith and Lambert, from knowledge-keepers in the Turtle Lodge in Sagkeeng First Nation and from Norway House Cree Nation, and of course from Aklavik residents themselves, this project attempted to diminish power dynamics between the researcher and the community. A significant gap of knowledge that was noted while seeking inspiration for culturally appropriate methodologies to engage with Inuvialuit is that there is a paucity of methodological publications by Inuit. Other than the guide to research by Inuit Tapiriit Kanatami, there were no Arctic-specific bodies of knowledge to consult in publication. Although I recognize my obvious epistemological limitations as a settler and non-Inuvialuit, I hope that this research can provide inspiration and direction for other non-Indigenous academics hoping to engage in a reciprocal and humble way with Indigenous communities.

This research also provides significant contribution to the bodies of scholarship concerning human effects stemming from climate change and ongoing social changes in the Canadian Arctic. In this field, scholars such as Pearce, Ford, Smit, Furgal, Berkes, Armitage, Collings, Condon and Cunsolo Willox have already engaged in significant community-based research initiatives on varying scales. Collings (2011) address the paucity of publication concerning how specific processes of change in the Arctic – both environmental and social – interact with one another to create new realities for Arctic residents. This project advances research initiatives looking to address that gap of knowledge by adopting a holistic, big-picture view on a specific topic of concern from Aklavik.

5.3 Practical contributions

Considering this research was community-driven and community-based, the most evident practical contributions of this research are intended for Aklavik residents themselves. This research follows the OCAP principles of data management with Indigenous communities (First Nations Information Governance Committee 2007) and will therefore be owned, controlled, accessible to and in possession of the Aklavik HTC after this project's completion. Although OCAP is a good framework from which to begin ethical and responsible engagement with Indigenous communities, it is by no means the end-point to researcher responsibility (Morton Ninomiya and Pollock 2017). It is hoped that data and insights from this collaboration can guide future research or initiatives by the Aklavik HTC, especially considering the research topic was proposed by representatives from the Aklavik HTC at the Beluga Summit in Inuvik in 2016. Specific effort was made to identify and propose future opportunities for the revival of the community's beluga whale harvest through the project's third research objective. Two community-driven concepts of a community hunt or an on-the-land program emerged from the project's results, and it is hoped that this project can aid in the development and support of such initiatives.

Two local research assistants were involved in the interview process and, through their experience and insights gained throughout the process, could help advise whatever action is deemed as appropriate by the Aklavik HTC. Simpson (1999) and Nadasdy (1998) both critique research focussed on Indigenous knowledge, or 'traditional knowledge' as being stuck in theoretical and cerebral conversations, 'collecting dust on shelves', but rarely amounting to any concrete or beneficial action for Indigenous peoples who shared their knowledge in the first place. This project hopes to address and overcome that downfall of Indigenous knowledge studies by empowering the community of Aklavik to utilize the project in any way they deem as beneficial.

On a more regional scale, this research has the potential to contribute to a greater understanding of the reasons behind Aklavik's dramatic decline in annual beluga harvest over the decades, and could help in communication with other Hunters and Trappers Committees and co-management organizations across the Inuvialuit Settlement Region (ISR). The beluga whale harvest is a culturally significant activity for all Inuvialuit communities in the ISR, and although this project represents Aklavik's specific perspective, it does have broader implications regionally, as many drivers of change (especially environmental change) have been observed across the ISR and are affecting other communities' beluga whale harvests (Waugh 2018).

5.4 Limitations and reflections on how to improve this research

Seeing as this project was proposed and supported by the Aklavik HTC, community engagement was tied largely to the Aklavik HTC. This included selection of local research assistants, identifying participants, organizing the community meeting, and other means of outreach. Although seeking local direction was imperative to the project's success, and vastly aided the process and relevance of the project to its research aim and objectives, it is also important to acknowledge that the Aklavik HTC plays a certain role in the community and has a specific role in local politics. Although the two local research assistants and personal connections were also instrumental in selecting suitable interview participants, there is likely a certain level of bias in the selection of participants due to the Aklavik HTC's role in the project.

As my relationship with community members in Aklavik developed, our conversations shifted from neutral and unfamiliar to more reflective and personal. As our familiarity grew, so did the atmosphere of trust and openness, and I can't stress enough the critical importance of humanizing research and building friendships and reciprocity. Many Indigenous authors such as Absolon, Kovach, Lambert, Simpson and Smith emphasize researcher responsibility to build and nurture relationships, and it became evident that my return to Aklavik in 2018 broke down certain walls some people may have had, opening doors for more candid conversations. The purpose of my visit in 2018 was grounded in respect for the stories and perspectives shared with me, and the power dynamics of researcher versus subject were flipped (with me now seeking guidance from participants). Although revisiting Aklavik was crucial and this visit was very positive, just under three weeks to conduct this activity was not enough time to truly engage with the participants and community as a whole. After spending two months in Aklavik during summer 2017, having only one opportunity to speak to participants, especially after engaging in friendly and open conversations, felt inadequate and impersonal.

Such limitations to the project can be linked to fulfilling academic requirements in a reasonable timeline, availability of funding for engagement, and expectations for research. As this project became more tied to Aklavik residents and interview participants, it became increasingly obvious that, in order to complete the most successful project possible, high levels of community engagement would be preferred. However, the constraints listed above, paired with my own personal restrictions and the geographic distance between Winnipeg and Aklavik culminated in restricted time windows under which to live in the community and directly work with participants and contributors. For example, in summer 2018, had the research window been slightly longer/later, direct observational experience would have been acquired through being present at the Schooner Channel whale harvest of seven belugas. Although the actual research windows were highly productive and successful in their own right, this project's collaborative success and moral standing would have been stronger had I spent more time in Aklavik. Suggestions to overcome this barrier would be to plan a long time window (> two months) from which to work and write from Aklavik after the main research engagement, thus increasing the potential for community input, cultural grounding, and relationship-building.

5.5 Future research

On a broad scale, the results of this research can liken Aklavik as a 'canary in the coalmine' for the Inuvialuit Settlement Region, where a specific combination of drivers of change and their subsequent interaction have resulted in a sharp drop in a major harvested species – the beluga whale. However, many influencers of change are not limited to only Aklavik, with similar environmental and social scenarios evident in other communities in the ISR. Although this project takes an in-depth look into Aklavik's perspective, it is evidently, limited in geography and social experience to Aklavik. Traveling along that same vein of thought, similar projects could be conducted with other communities in the Inuvialuit Settlement Region to capture their unique perspective of the history of the whale harvest, the current state of affairs, and their insight for the future of their harvest. Such a research initiative was suggested in response to this project by an Inuvialuit representative from another community at the 2018 Fisheries Joint Management Committee Annual Meeting in Winnipeg, MB.

Focusing on Aklavik specifically, this project could be expanded to include perspectives from individuals who specifically do not harvest beluga whales, and had little to no exposure to it throughout their lives. Because this project wanted to capture opinions on multiple aspects of the beluga whale harvest, participants were selected based on their lived experience with the beluga hunt. However, an interesting future research opportunity would be to understand why individuals from Aklavik never harvested whales – whether it was intentional or imposed. This would complement the results of this project excellently by involving more of the community and offering a more complete understanding of the dynamics behind *not* harvesting whales.

Finally, should either suggestion of a community hunt or an on-the-land program materialize, it would be incredibly important for an individual to be present for the duration of the program to learn through observation, experience and conversation on what effects such a program is having on Aklavik’s beluga whale harvest. Local involvement and project design would be imperative for this stage, as an outside researcher would have very little basis upon which to compare peoples’ reaction to the program to how those individuals were prior to the program’s implementation.

REFERENCES

Absolon, Kathleen E (Minogiizhigokwe). 2011. *Kaandossiwin: How We Come to Know.* Fernwood Publishing, Blackwood, Nova Scotia. 176 pgs.

Andrachuk, Mark, and Barry Smit. 2012. “Community-Based Vulnerability Assessment of Tuktoyaktuk, NWT, Canada to Environmental and Socio-Economic Changes.” *Regional Environmental Change* 12 (4): 867–85. doi:10.1007/s10113-012-0299-0.

Aporta, Claudio, Ingrid Kritsch, Alestine Andre, Kristi Benson, Sharon Snowshoe, William Firth, and Del Carry. 2018. “The Gwich’in Atlas: Place Names, Maps and Narratives,” 229–44.

Bancroft, D., S. Solomon, H. Ritchie, S. Ricketts, V. Khanna, H. Melling, D. Cobb, and M. Tarbotton. 2001. “Report on a Workshop on Western Arctic Coastal Erosion and Surge Protection.” Sidney, B.C.

Berkes, Fikret, and Derek Armitage. 2010. “Co-Management Institutions, Knowledge, and Learning: Adapting to Change in the Arctic” 34 (1): 109–31.

Berkes, Fikret, Mina Kislalioglu Berkes, and Helen Fast. 2007. “Collaborative Integrated Management in Canada’s North: The Role of Local and Traditional Knowledge and Community-Based Monitoring.” *Coastal Management* 35 (1): 143–62. doi:10.1080/08920750600970487.

Berkes, Fikret, Jack Mathias, Mina Kislalioglu, and Helen Fast. 2001. “The Canadian Arctic and the Oceans Act: The Development of Participatory Environmental Research and

Management.” *Ocean and Coastal Management* 44 (7–8): 451–69. doi:10.1016/S0964-5691(01)00060-6.

Bernard, H Russell. 2006. *Reserach Methods in Anthropology - Qualitative and Quantitative Approaches*. *AltaMira Press*. Fourth Edi. Oxford, UK: Altamira Press. doi:10.1525/aa.2000.102.1.183.

Bohensky, Erin L., and Yiheyis Maru. 2011. “Indigenous Knowledge, Science, and Resilience: What Have We Learned from a Decade of International Literature on ‘Integration’?” *Ecology and Society* 16 (4): art6. doi:10.5751/ES-04342-160406.

Breton-Honeyman, Kaitlin, Chris M. Furgal, and Michael O. Hammill. 2016. “Systematic Review and Critique of the Contributions of Traditional Ecological Knowledge of Beluga Whales in the Marine Mammal Literature.” *Arctic* 69 (1): 37–46. doi:10.14430/arctic4543.

Cameron, Emilie S. 2012. “Securing Indigenous Politics: A Critique of the Vulnerability and Adaptation Approach to the Human Dimensions of Climate Change in the Canadian Arctic.” *Global Environmental Change* 22 (1). Elsevier Ltd: 103–14. doi:10.1016/j.gloenvcha.2011.11.004.

Canadian Institutes of Health Research Natural Sciences and Engineering Research Council of Canada and Social Sciences and Humanities Research Council of Canada. 2014. “Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans.” *Encyclopedia of Clinical Pharmacy*. doi:ISBN 978-1-100-17237-81.

Castleden, Heather, Vanessa Sloan Morgan, and Christopher Lamb. 2012. “‘I Spent the First Year Drinking Tea’: Exploring Canadian University Researchers’ Perspectives on

Community-Based Participatory Research Involving Indigenous Peoples.” *Canadian Geographer* 56 (2): 160–79. doi:10.1111/j.1541-0064.2012.00432.x.

Champalle, Clara, James D. Ford, and Mya Sherman. 2015. “Prioritizing Climate Change Adaptations in Canadian Arctic Communities.” *Sustainability* 7: 9268–92. doi:10.3390/su7079268.

Chapin, F. Stuart, Martin Sommerkorn, Martin D. Robards, and Kevin Hillmer-Pegram. 2015. “Ecosystem Stewardship: A Resilience Framework for Arctic Conservation.” *Global Environmental Change*. doi:10.1016/j.gloenvcha.2015.07.003.

Collings, P. 2011. “Economic Strategies, Community, and Food Networks in Ulukhaktok, Northwest Territories, Canada.” *Arctic* 64 (2): 207–19. doi:10.14430/arctic4100.

Collings, Peter, Tristan Pearce, and Joseph Kann. 2018. ““We Don’t Know Anything about Whales”: Ecological Knowledge and Ways of Knowing in Ulukhaktok, Northwest Territories, Canada.” *Arctic Science* 241 (Beluga Summit Special Issue): 223–41.

Collings, Peter, George Wenzel, and Richard G Condon. 1998. “Modern Food Sharing Networks and Community Integration in the Central Arctic Canadian.” *Arctic* 51 (4): 301–14.

Committee for Original Peoples’ Entitlement, and Canada. 1984. “The Western Arctic Claim: The Inuvialuit Final Agreement,” 114p.

Community of Aklavik, Wildlife Management Advisory Council (NWT), and The Joint Secretariat. 2008. “Aklavik Inuvialuit Community Conservation Plan: A Plan for the Conservation and Management of Natural Resources and Lands within the Inuvialuit Settlement Region in the Vicinity of Aklavik, Northwest Territories,” no. June: 153.

http://www.screeningcommittee.ca/pdf/ccp/Aklavik_CCP.pdf.

Condon, Richard G, Peter Collings, and George Wenzel. 1995. “The Best Part of Life : Subsistence Hunting, Ethnicity, and Economic Adaptation among Young Adult Inuit Males.” *Arctic* 48 (1): 31–46.

Cunsolo Willox, Ashlee, Eleanor Stephenson, Jim Allen, François Bourque, Alexander Drossos, Sigmund Elgarøy, Michael J. Kral, et al. 2014. “Examining Relationships between Climate Change and Mental Health in the Circumpolar North.” *Regional Environmental Change* 15 (1): 169–82. doi:10.1007/s10113-014-0630-z.

DFO. 2000. “Eastern Beaufort Sea Beluga Whales.” *Fisheries and Oceans Canada Science Stock Status Report*, no. E5-38: 14. doi:Science Stock Status REport E5-38.

Ermine, Willie. 2007. “The Ethical Space of Engagement.” *Indigenous Law Journal* 6 (1): 193–203.

First Nations Information Governance Committee. 2007. “OCAP: Ownership, Control, Access and Possession.” *Access*, 23.

Fisheries Joint Management Committee. 2013. “Beaufort Sea Beluga Management Plan.” *Fisheries Joint Management Committee*, 44. http://fishfp.sasktelwebhosting.com/publications/Beluga Management Plan (2001)as printed with covers.pdf.

Ford, James D., and Chris Furgal. 2009. “Foreword to the Special Issue: Climate Change Impacts, Adaptation and Vulnerability in the Arctic.” *Polar Research*. doi:10.1111/j.1751-8369.2009.00103.x.

Graneheim, Ulla H., Britt Marie Lindgren, and Berit Lundman. 2017. "Methodological Challenges in Qualitative Content Analysis: A Discussion Paper." *Nurse Education Today* 56 (June). Elsevier: 29–34. doi:10.1016/j.nedt.2017.06.002.

Harder, Miriam T, and George W Wenzel. 2012. "Inuit Subsistence, Social Economy and Food Security in Clyde River, Nunavut." *Source: Arctic* 65 (3): 305–18. http://www.jstor.org/stable/41758937.

Hart, Elisa J., and Beverly Amos. 2004. "Tariurmiutuakun Qanuq Atuutiviksaitlu Ilitchuriyaqput Ingilraan Inuvialuit Qulianginnin:Learning Resources, Marine Through, Their Use History, Inuvialuit Oral History," 1–192.

Harwood, Lois A., John Iacozza, James C. Auld, Pamela Norton, and Lisa Loseto. 2014. "Belugas in the Mackenzie River Estuary, NT, Canada: Habitat Use and Hot Spots in the Tarium Niryutait Marine Protected Area." *Ocean and Coastal Management* 100: 128–38. doi:10.1016/j.ocecoaman.2014.08.004.

Harwood, Lois A., Pamela Norton, Billy Day, and Patricia A. Hall. 2002. "The Harvest of Beluga Whales in Canada's Western Arctic: Hunter-Based Monitoring of the Size and Composition of the Catch." *Arctic* 55 (1): 10–20. doi:10.1016/0044-8486(86)90370-4.

Harwood, Lois A., and Thomas G. Smith. 2002. "Whales of the Inuvialuit Settlement Region in Canada's Western Arctic: An Overview and Outlook." *Arctic* 55 (SUPPL. 1): 77–93. doi:10.1016/j.ecolecon.2004.01.017.

Hoover, Carie, Megan Bailey, Jeff Higdon, Steven H. Ferguson, and Rashid Sumaila. 2013. "Estimating the Economic Value of Narwhal and Beluga Hunts in Hudson Bay, Nunavut."

Arctic 66 (1): 1–16.

Hoover, Carie, Sonja Ostertag, Claire Hornby, Colleen Parker, Kayla Hansen-Craik, Lisa Loseto, and Tristan Pearce. 2016. “The Continued Importance of Hunting for Future Inuit Food Security.” *Solutions* 7 (4): 40–51.

Hornby, Claire A., Carie Hoover, John Iacozza, David G. Barber, and Lisa L. Loseto. 2016. “Spring Conditions and Habitat Use of Beluga Whales (Delphinapterus Leucas) during Arrival to the Mackenzie River Estuary.” *Polar Biology* 39 (12). Springer Berlin Heidelberg: 1–16. doi:10.1007/s00300-016-1899-9.

Huntington, Henry P. 1999. “Traditional Knowledge of the Ecology of Beluga Whales (Delphinapterus Leucas) in the Eastern Chukchi and Northern Bering Seas , Alaska.” *Arctic* 52 (1): 49–61.

Idrobo, Carlos Julián, and Fikret Berkes. 2012. “Pangnirtung Inuit and the Greenland Shark: Co-Producing Knowledge of a Little Discussed Species.” *Human Ecology* 40: 405–14. doi:10.1007/s10745-012-9490-7.

Inuit Tapiriit Kanatami. 2007. “A GUIDE FOR RESEARCHERS NEGOTIATING RESEARCH RELATIONSHIPS WITH INUIT COMMUNITIES.” *Nunavut Research Institute*.

Inuuvik Community Corporation, Tuktuuyaqtuuq Community Corporation, and Aklarvik Community Corporation. 2006. “Inuvialuit Settlement Region Traditional Knowledge Report,” no. August: 200.

Irniq, Peter. 2008. “Healthy Community.” *Arctic* 61 (SUPPL. 1): 1–3.

Irwin, Colin. 1988. “Lords of the Arctic: Wards of the State.”

Kokelj, Steven V., Trevor C. Lantz, Jon Tunnicliffe, Rebecca Segal, and Denis Lacelle. 2017. “Climate-Driven Thaw of Permafrost Preserved Glacial Landscapes, Northwestern Canada.” *Geology* 45 (4): 371–74. doi:10.1130/G38626.1.

Kovach, Margaret. 2005. “Emerging from the Margins: Indigenous Methodologies.” In *Research as Resistance: Critical, Indigenous, and Anti-Oppressive Approaches*, 19–36.

Laidre, Kristin L, Ian Stirling, Lloyd F Lowry, Øystein Wiig, Mads Peter Heide-Jørgensen, and Steven H Ferguson. 2008. “Quantifying the Sensitivity of Arctic Marine Mammals to Climate-Induced Habitat Change.” *Ecological Applications* 18 (2): 97–125.

Loseto, L. L., C. Hoover, S. Ostertag, D. Whalen, T. Pearce, J. Paulic, J. Iacozza, and S. MacPhee. 2018. “Beluga Whales (Delphinapterus Leucas), Environmental Change and Marine Protected Areas in the Western Canadian Arctic.” *Estuarine, Coastal and Shelf Science* 212 (May). Elsevier: 128–37. doi:10.1016/j.ecss.2018.05.026.

Manson, G. K., S. M. Solomon, D. L. Forbes, D. E. Atkinson, and M. Craymer. 2005. “Spatial Variability of Factors Influencing Coastal Change in the Western Canadian Arctic.” *Geo-Marine Letters* 25 (2–3): 138–45. doi:10.1007/s00367-004-0195-9.

Martens, Tabitha. 2015. “Good News in Food: Understanding the Value and Promise of Indigenous Food Sovereignty in Western Canada,” 1–120. http://mspace.lib.umanitoba.ca/handle/1993/30825.

Minkler, Meredith. 2005. “Community-Based Research Partnerships: Challenges and Opportunities.” *Journal of Urban Health* 82 (SUPPL. 2): 3–12. doi:10.1093/jurban/jti034.

Moore, Sue E, Henry P Huntington, Sue E Moore1 ’, and Henry P Huntington2. 2008. “Arctic

Marine Mammals and Climate Change: Impacts and Resilience." *Source: Ecological Applications Ecological Applications* 18 (182): 157–65. http://www.jstor.org/stable/40062163.

Morton Ninomiya, Melody E., and Nathaniel J. Pollock. 2017. "Reconciling Community-Based Indigenous Research and Academic Practices: Knowing Principles Is Not Always Enough." *Social Science and Medicine* 172. Elsevier Ltd: 28–36. doi:10.1016/j.socscimed.2016.11.007.

Nadasdy, Paul. 1999. "The Politics of TEK: Power and the 'Integration' of Knowledge." *Arctic Anthropology* 36 (1–2): 1–18.

Nagy, Murieue Ida. 1994. "Yukon North Slope Inuvialuit Oral History," no. 1.

Narey, Daniel C. 2017a. "Philosophical Critiques of Qualitative Research Methodology in Education:A Synthesis of Analytic-Pragmatist and Feminist-Poststructuralist Perspectives." *Philosophy of Education Yearbook*, 335–43. https://login.pallas2.tcl.sc.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eue&AN=130776021&site=ehost-live.

———. 2017b. "Philosophical Critiques of Qualitative Research Methodology in Education:A Synthesis of Analytic-Pragmatist and Feminist-Poststructuralist Perspectives." *Philosophy of Education Yearbook*, 335–43.

Pearce, Tristan, James D. Ford, Gita J. Laidler, Barry Smit, Frank Duerden, Mishak Allarut, Mark Andrachuk, et al. 2009. "Community Collaboration and Climate Change Research in the Canadian Arctic." *Polar Research* 28: 10–27. doi:10.1111/j.1751-8369.2008.00094.x.

Pearce, Tristan, James Ford, Ashlee Cunsolo Willox, and Barry Smit. 2015. “Inuit Traditional Ecological Knowledge (TEK), Subsistence Hunting and Adaptation to Climate Change in the Canadian Arctic.” *Arctic* 68 (2): 233–45. doi:10.14430/arctic4475.

Pearce, Tristan, Barry Smit, Frank Duerden, James D Ford, Annie Goose, and Fred Kataoyak. 2010. “Inuit Vulnerability and Adaptive Capacity to Climate Change in Ulukhaktok, Northwest Territories, Canada.” *Polar Record* 46 (237). Cambridge University Press: 157–77. doi:10.1017/S0032247409008602.

Pearce, Tristan, Harold Wright, Roland Notaina, Adam Kudlak, Barry Smit, James Ford, and Christopher Furgal. 2011. “Transmission of Environmental Knowledge and Land Skills among Inuit Men in Ulukhaktok, Northwest Territories, Canada.” *Human Ecology* 39 (3): 271–88. doi:10.1007/s10745-011-9403-1.

Ramage, Justine L., Anna M. Irrgang, Ulrike Herzschuh, Anne Morgenstern, Nicole Couture, and Hugues Lantuit. 2017. “Terrain Controls on the Occurrence of Coastal Retrogressive Thaw Slumps along the Yukon Coast, Canada.” *Journal of Geophysical Research: Earth Surface* 122 (9): 1619–34. doi:10.1002/2017JF004231.

Rawluk, Andrea. 2012. “Intergenerational Resilience in Aklavik, NT – Exploring Conceptualizations, Variables, and Change across Generations.” University of Alberta.

Rudolph, Karlah Rae, and Stephane M. McLachlan. 2013. “Seeking Indigenous Food Sovereignty: Origins of and Responses to the Food Crisis in Northern Manitoba, Canada.” *Local Environment* 18 (9): 1079–98. doi:10.1080/13549839.2012.754741.

Simpson, Leanne R. 1999. “The Construction of Traditional Ecological Knowledge: Issues, Implications and Insights." *Library of The University of Manitoba*, no. March: 116.

Smith, Linda Tuhiwai. 2012. *Decolonizing Methodologies: Research and Indigenous Peoples. Otago University Press*. Second. London, New Jersey: Zed Books Ltd.

Solomon, Steven M, Gavin Manson, Donald Forbes, Steven Kokelj, Michael Pisaric, Trevor Lantz, Elisa J Hart, and Humfrey Melling. 2009. "Storm Surges in the Canadian Beaufort Sea." *North Star*.

Stevenson, Marc G. 1996. "Indigenous Knowledge in Environmental Assessment." *Arctic* 49 (3): 278–91. http://www.jstor.org/stable/40512004.

Tester, Frank James. 2009. "Iglutaasaavut (Our New Homes): Neither ' New ' nor ' Ours. ' Housing Challenges of the Nunavut Territorial Government." *Journal of Canadian Studies* 43 (2): 137–58. doi:10.1353/jcs.0.0088.

———. 2010. "Mad Dogs and (Mostly) Englishmen: Colonial Relations, Commodities, and the Fate of Inuit Sled Dogs." *Inuit/Studies* 34 (2): 129–47. doi:10.7202/1004073ar.

Tester, Frank James, and Peter Irniq. 2008. "Inuit Qaujimajatuqangit : Social History , Politics and the Practice of Resistance." *Arctic* 61 (1): 48–61.

Usher, Peter J. 2000. "Traditional Ecological Knowledge in Environmental Assessment and Management." *Arctic* 53 (2): 183–93. doi:10.14430/arctic849.

———. 2002. "Inuvialuit Use of the Beaufort Sea and Its Resources, 1960-2000." *Arctic* 55 (SUPPL. 1): 18–28. doi:10.2307/40512417.

Waugh, Devin. 2018. "Inuvialuit Traditional Ecological Knowledge (TEK) of Beluga Whale (

Delphinaterus Leucas) in a Changing Climate in Tuktoyaktuk , NT By.”

Waugh, Devin, Tristan Pearce, Sonja K Ostertag, Verna Pokiak, Peter Collings, and Lisa L Loseto. 2018. “Inuvialuit Traditional Ecological Knowledge of Beluga Whale (Delphinapterus Leucas) under Changing Climatic Conditions in Tuktoyaktuk , NT.” *Arctic Science* 258 (Beluga Summit Special Issue): 242–58.

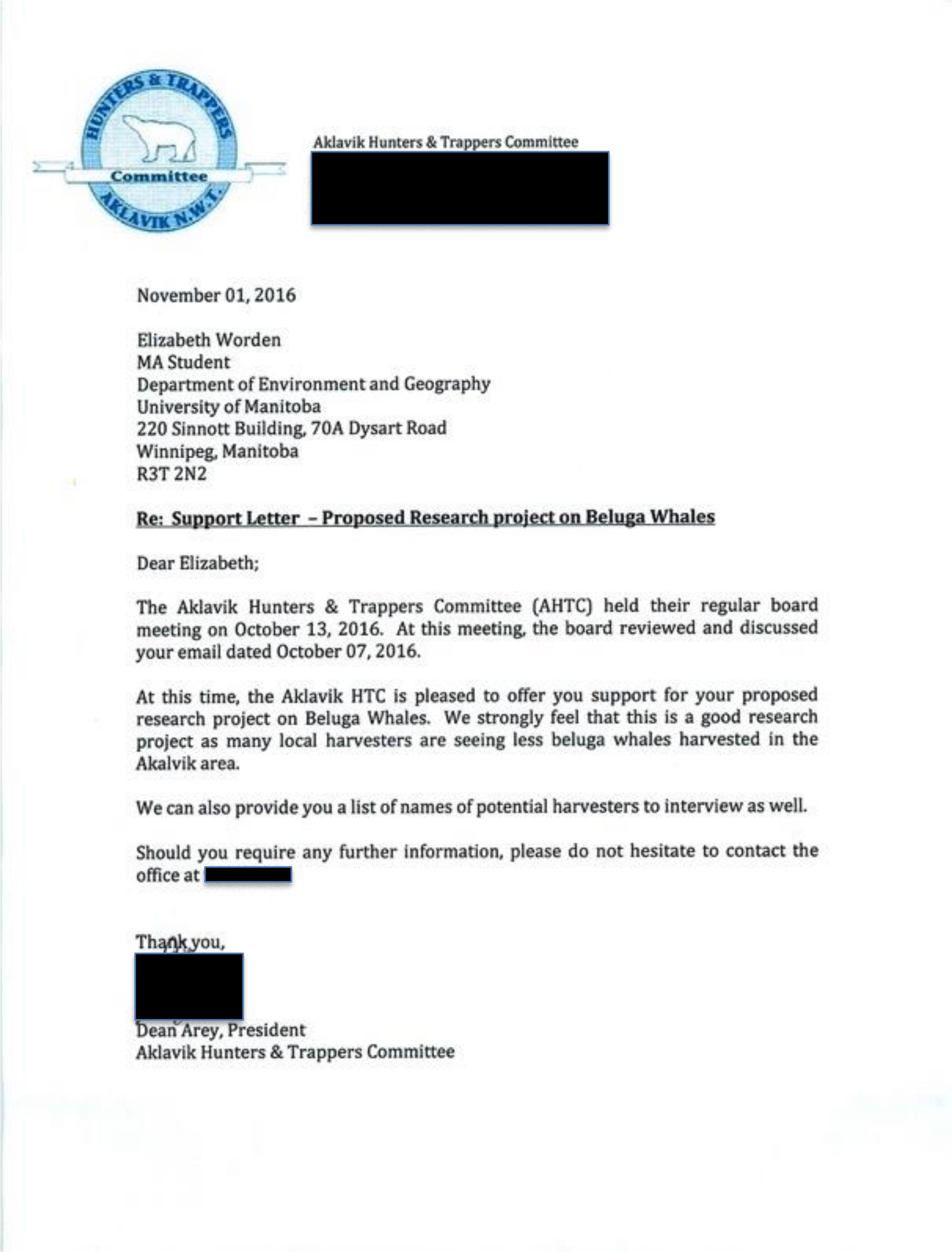
Wenzel, George W. 1999. “Traditional Ecological Knowledge and Inuit: Reflections on TEK Research and Ethics.” *Arctic* 52 (2): 113–24.

Wesche, Sonia D., and Hing Man Chan. 2010. “Adapting to the Impacts of Climate Change on Food Security among Inuit in the Western Canadian Arctic.” *EcoHealth* 7 (3): 361–73. doi:10.1007/s10393-010-0344-8.

Wildlife Management Advisory Council (North Slope), and Aklavik Hunters and Trappers Committee. 2018. “Yukon North Slope Inuvialuit Traditional Use Study.”

Wolforth, John. 1971. The Evolution and Economy of the Delta Community. Indian Affairs and Northern Development Canada.

APPENDIX I: LETTER OF SUPPORT FROM AKLAVIK HUNTERS AND TRAPPERS COMMITTEE



Aklavik Hunters & Trappers Committee
[redacted]

November 01, 2016

Elizabeth Worden
MA Student
Department of Environment and Geography
University of Manitoba
220 Sinnott Building, 70A Dysart Road
Winnipeg, Manitoba
R3T 2N2

Re: Support Letter – Proposed Research project on Beluga Whales

Dear Elizabeth;

The Aklavik Hunters & Trappers Committee (AHTC) held their regular board meeting on October 13, 2016. At this meeting, the board reviewed and discussed your email dated October 07, 2016.

At this time, the Aklavik HTC is pleased to offer you support for your proposed research project on Beluga Whales. We strongly feel that this is a good research project as many local harvesters are seeing less beluga whales harvested in the Akalvik area.

We can also provide you a list of names of potential harvesters to interview as well.

Should you require any further information, please do not hesitate to contact the office at [redacted]

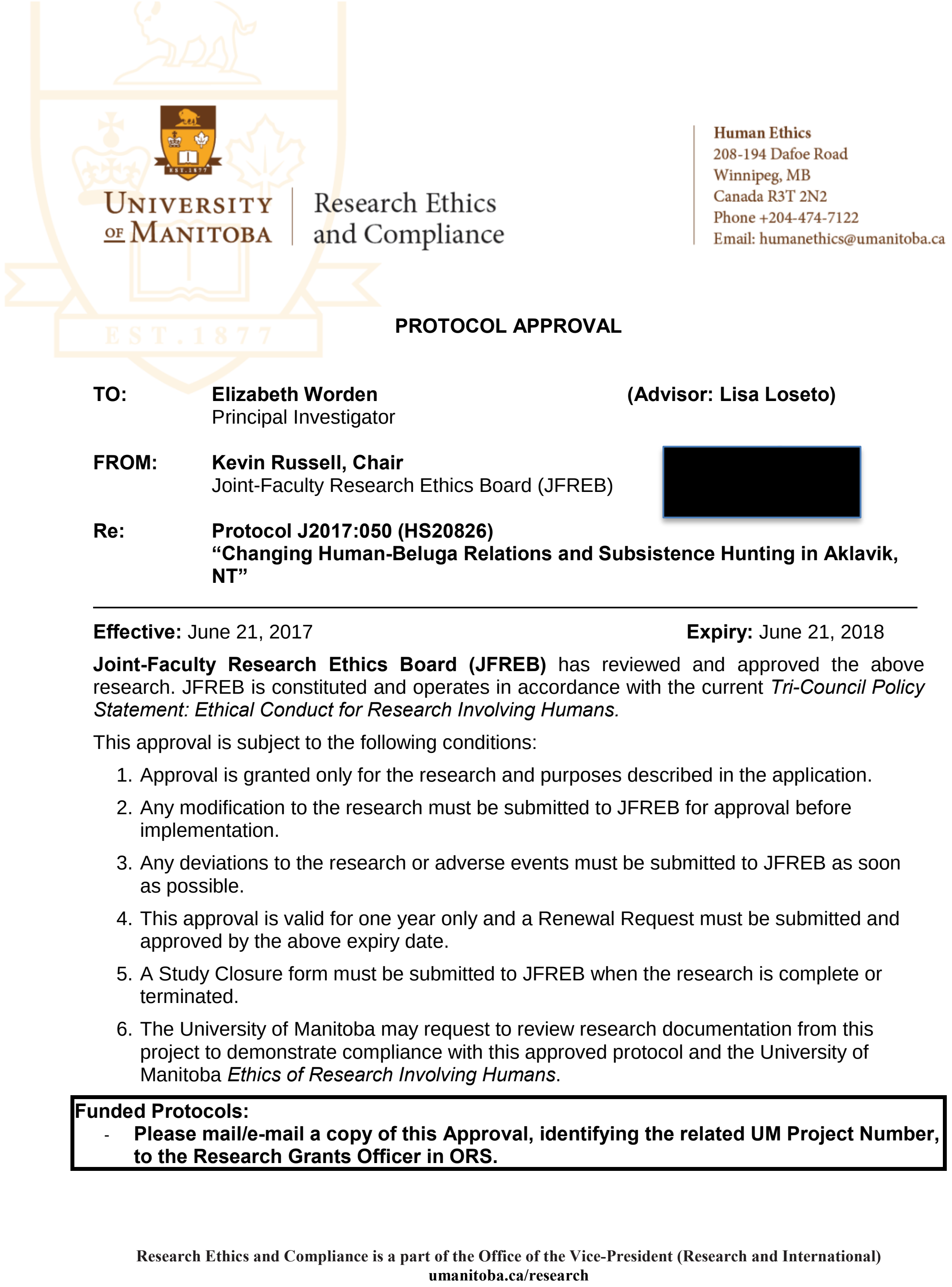
Thank you,

[redacted]

Dean Arey, President
Aklavik Hunters & Trappers Committee

APPENDIX II: ETHICS APPROVAL AND RENEWAL APPROVAL

(UNIVERSITY OF MANITOBA JOINT FACULTY ETHICS RESEARCH BOARD)



University of Manitoba | Research Ethics and Compliance

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PROTOCOL APPROVAL

TO: **Elizabeth Worden** **(Advisor: Lisa Loseto)**
Principal Investigator

FROM: **Kevin Russell, Chair**
Joint-Faculty Research Ethics Board (JFREB)

[redacted]

Re: **Protocol J2017:050 (HS20826)**
"Changing Human-Beluga Relations and Subsistence Hunting in Aklavik, NT"

Effective: June 21, 2017 **Expiry:** June 21, 2018

Joint-Faculty Research Ethics Board (JFREB) has reviewed and approved the above research. JFREB is constituted and operates in accordance with the current *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans.*

This approval is subject to the following conditions:

1. Approval is granted only for the research and purposes described in the application.
2. Any modification to the research must be submitted to JFREB for approval before implementation.
3. Any deviations to the research or adverse events must be submitted to JFREB as soon as possible.
4. This approval is valid for one year only and a Renewal Request must be submitted and approved by the above expiry date.
5. A Study Closure form must be submitted to JFREB when the research is complete or terminated.
6. The University of Manitoba may request to review research documentation from this project to demonstrate compliance with this approved protocol and the University of Manitoba *Ethics of Research Involving Humans*.

Funded Protocols:
- **Please mail/e-mail a copy of this Approval, identifying the related UM Project Number, to the Research Grants Officer in ORS.**

Research Ethics and Compliance is a part of the Office of the Vice-President (Research and International)
umanitoba.ca/research

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RENEWAL APPROVAL

Date: June 8, 2018 **New Expiry: June 21, 2019**

TO: **Elizabeth Worden** **(Advisor: Lisa Loseto)**
Principal Investigator

FROM: **Kevin Russell, Chair**
Joint-Faculty Research Ethics Board (JFREB)

[redacted]

Re: **Protocol #J2017:050 (HS20826)**
Changing Human-Beluga Relations and Subsistence Hunting in Aklavik, NT

Joint-Faculty Research Ethics Board (JFREB) has reviewed and renewed the above research. JFREB is constituted and operates in accordance with the current *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans.*

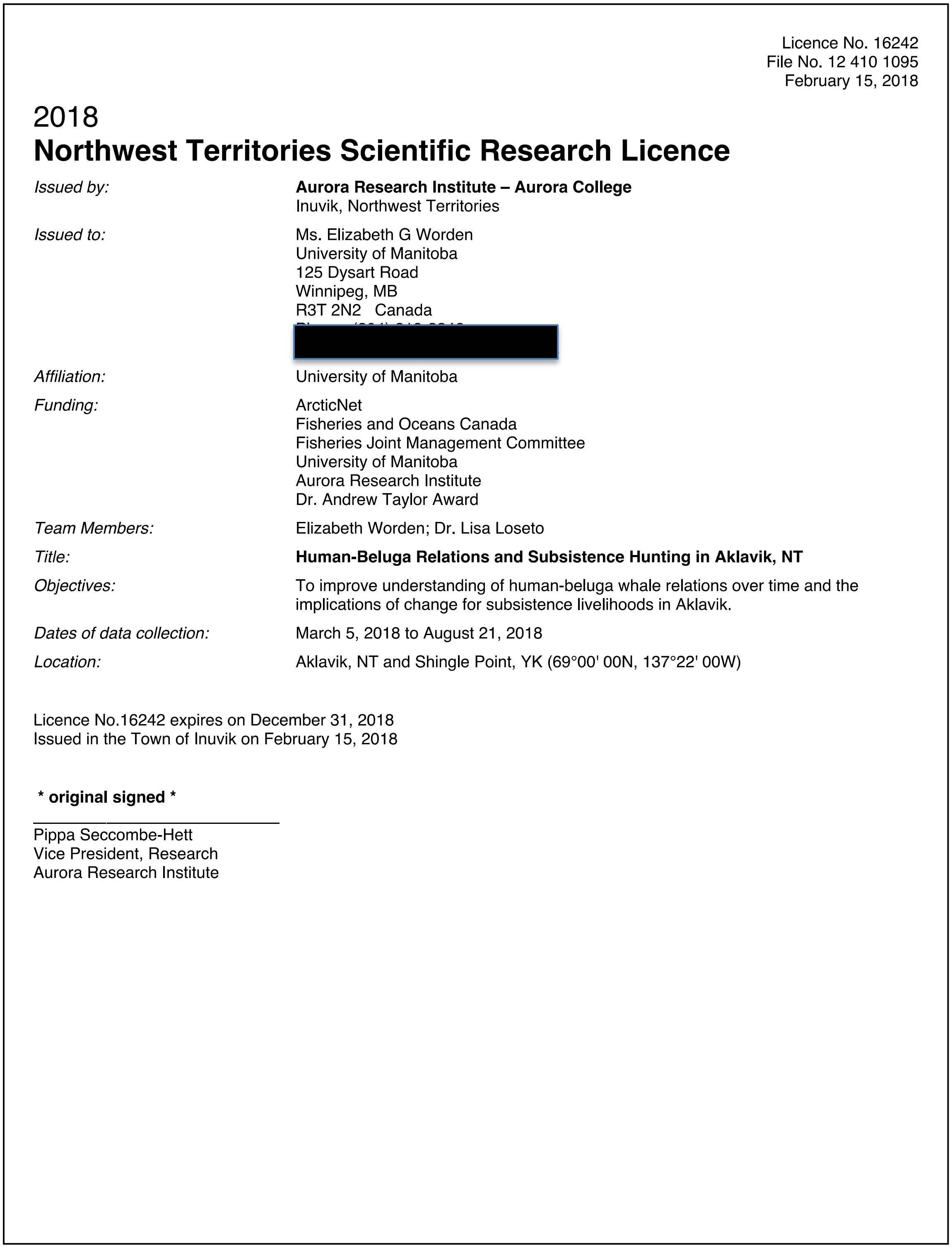
This approval is subject to the following conditions:

1. Any modification to the research must be submitted to JFREB for approval before implementation.
2. Any deviations to the research or adverse events must be submitted to JFREB as soon as possible.
3. This renewal is valid for one year only and a Renewal Request must be submitted and approved by the above expiry date.
4. A Study Closure form must be submitted to JFREB when the research is complete or terminated.

Funded Protocols:

- **Please mail/e-mail a copy of this Renewal Approval, identifying the related UM Project Number, to the Research Grants Officer in ORS.**

APPENDIX III: AURORA RESEARCH INSTITUTE SCIENTIFIC RESEARCH LICENSE



Licence No. 16242
File No. 12 410 1095
February 15, 2018

2018
Northwest Territories Scientific Research Licence

Issued by: **Aurora Research Institute – Aurora College**
Inuvik, Northwest Territories

Issued to:
Ms. Elizabeth G Worden
University of Manitoba
125 Dysart Road
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[redacted]

Affiliation: University of Manitoba

Funding:
ArcticNet
Fisheries and Oceans Canada
Fisheries Joint Management Committee
University of Manitoba
Aurora Research Institute
Dr. Andrew Taylor Award

Team Members: Elizabeth Worden; Dr. Lisa Loseto

Title: **Human-Beluga Relations and Subsistence Hunting in Aklavik, NT**

Objectives: To improve understanding of human-beluga whale relations over time and the implications of change for subsistence livelihoods in Aklavik.

Dates of data collection: March 5, 2018 to August 21, 2018

Location: Aklavik, NT and Shingle Point, YK (69°00' 00N, 137°22' 00W)

Licence No.16242 expires on December 31, 2018
Issued in the Town of Inuvik on February 15, 2018

*** original signed ***

Pippa Seccombe-Hett
Vice President, Research
Aurora Research Institute

APPENDIX IV: INTERVIEW CONSENT FORM

University of Manitoba
Fisheries and Oceans Canada
FJMC
FISHERIES JOINT MANAGEMENT COMMITTEE
AURORA RESEARCH INSTITUTE
AURORA COLLEGE
CEOS
Centre for Earth Observation Science

Research Project Title:
Human-Beluga Relations and Subsistence Hunting in Aklavik, NT

Principal Investigator and contact information:
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Advisor to Principal Investigator and contact information:
Dr. Lisa Loseto
Fisheries and Oceans Canada
501 university Crescent, Winnipeg, MB
R3T2N6
Email: [redacted]
Phone: [redacted]

This consent form, a copy of which will be left with you for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

1. Project background:
Harvesting of beluga is a major activity in the Inuvialuit Settlement Region, however, a big drop in Aklavik's beluga whale harvest has been noticed by community members and scientists. At the 2016 Beluga Summit in Inuvik, a group of knowledge holders from Aklavik shared reasons why fewer beluga whales were being harvested. Aklavik representatives agreed that a research project should be planned to identify these dynamics.

The aim of this research is to gain more understanding of the importance of the beluga hunt in Aklavik, identify the changes affecting the hunt, and explore what they mean to the community's well-being and subsistence lifestyle. This will be done through open-ended, semi-structured interviews with 30 community members.

This project will be conducted with community members in Aklavik for the summer months of 2017, when the researcher will be staying in Aklavik and at Shingle Point. Community members and the Aklavik Hunters and Trappers Committee (AHTC) will be involved for the whole research process, providing feedback and guidance. We hope that a better understanding of the changes affecting the beluga hunt will help identify opportunities to support it into the future.

2. What is involved: If you agree to participate in the interview, a university student and/or a local research assistant will ask you questions about your involvement in subsistence hunting, with a focus on beluga whales. This open-ended interview will last roughly an hour. Feedback and suggestions are encouraged. Answers to each question will be written down during the interview. The audio of the interview may be recorded, with your permission. Honoraria of $100 gift cards to the grocery store will be distributed before your interview.

3. Withdrawing from the study: Your participation in this study is voluntary. It is your choice to be part of the study or not. If you decide to be part of the project, you may withdraw (stop), at any time, even after signing the consent form, partway through the interview, or after the interview. If you do not want to answer some of the questions during the interview you do not have to, but you can still be in the study. If you stop, any data you have provided will be destroyed unless you say otherwise. There will be no penalty for stopping, and you will still receive your gift card.

During March 2018, the researcher will be in Aklavik to share early results with the community, and will be available to talk in person in Aklavik if you have any questions. By April 2018, once all of the information has been analyzed and shared at the community meeting in Aklavik, you will no longer be able to withdraw from the study.

Please feel free to contact the researcher or research assistant by phone or email. The researcher will share progress with you and will ask for feedback to make sure that your words are being presented in a way you agree with.

4. What are the risks and benefits? This study does not involve any physical or emotional risks other than what you could have in your regular travels and camping activities. The information you share will show your perspective on the importance of subsistence hunting, what is affecting beluga hunting, and what you can see happening to the hunt in the future. This information may be published in late 2018 so you can choose not to share some information with the researcher or research assistant.

Photographs taken throughout the course of the study may be used in the final products. If you do not wish to be photographed, please say so on this consent form. If you are photographed, you will be given a photo release form and your picture may appear in a publication.

Once the study is complete in September 2018, a copy of your personal interview records can be returned to you. Once you have these interview records, you are responsible for how they are kept and shared, and the researcher no longer has responsibility of that data. When the project is complete, the AHTC will have control over the data and how it is used in the future. Data will be stored long-term at the Inuvialuit Cultural Resource Centre in Inuvik, NT. The Fisheries Joint Secretariat will have access to the project data to use in the Beaufort Regional Strategic Environmental Assessment, which focuses on community knowledge of the Inuvialuit Settlement Region.

If you want, you can choose that your information stays anonymous. If you choose this option, your records will be coded with a number that only the researcher and research assistant can identify. Your name will never be attached to the project if you want to be anonymous. Until the project is finished, all records will be stored in a locked cabinet.

All research assistants will sign confidentiality agreements, to protect your privacy.

Your thoughts and words will provide very important information to help understand why Aklavik is experiencing such a big drop in its beluga harvest. People are concerned by environmental and social change and this study can benefit Aklavik, allowing its voice to be heard by many. You will also receive honoraria in the form of a $100 CAD gift card for the local grocery store.

5. Returning results: There will be a follow-up with all participants in Summer 2017 to make sure that the researcher interpreted the interview properly. The researcher will communicate with the AHTC so that updates can be shared to each participant. If you have any concerns or questions, please do not hesitate to contact the researcher, using the information provided at the top of this form.

The researcher will be visiting Aklavik in Spring 2018 to share early results at a community meeting. Later in 2018, the researcher will send a final summary and booklets in the mail to AHTC. Results will be shared with the community *before* being published in scientific reports and at conferences. If you see any of your information presented in a way that is different from what you said or meant, please contact me and have me review it.

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and /or refrain from answering any questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

The University of Manitoba may look at your research records to see that the research is being done in a safe and proper way.

This research has been approved by the Joint-Faculty Research Ethics Boards. If you have any concerns or complaints about this project you may contact any of the above-named persons or the Human Ethics Coordinator (HEC) at 204-474-7122. A copy of this consent form has been given to you to keep for your records and reference.

I wish to be anonymous for the purposes of this study

YES ☐ **NO** ☐

I give permission to be photographed for the purposes of this study

YES ☐ **NO** ☐

I give permission for this interview to be recorded

YES ☐ **NO** ☐

Participant's Signature ________________________________ Date ________________

Researcher and/or Delegate's Signature ____________________ Date ________________

Email or land address where communication, a summary of findings and written reports (at your request) should be sent:

____

APPENDIX V: INTERVIEW GUIDE

INTERVIEW GUIDE

Changing Human-Beluga Relations and Subsistence Hunting in Aklavik, NT, Canada

Elizabeth Worden

MA Candidate in Geography, University of Manitoba

This interview guide outlines the scope and nature of the questions that will be asked to participants in semi-structured interviews during summer 2017 in Aklavik, Northwest Territories. These questions will explore participants' exposure to, interest in, and knowledge of subsistence hunting practices in their community, with a special focus on beluga whales.

Due to the interviews being semi-structured, it is expected that responses will be open-ended, and probing questions may be used to elaborate or highlight certain points of interest. This interview guide highlights the variety of probing questions that may be used to elaborate on each main question.

The interview is expected to take an hour. Participants will be given honoraria in the form of a $100 gift card to the local grocery store (North Mart or Stanton's – to be determined) before the interview.

Questions about Involvement in Subsistence Hunting:

1. Did you hunt this year? (What did you hunt? Where and when were these hunts? Can you show me on a map where you hunted? Why were you hunting?)
2. How often would you hunt this species in a season? (How long is the species' season to be hunted? How many would you say you take?)
3. How far do you have to go to get this species? (How is the hunting success for this species? Where/when do you process the catch?)
4. Who do you go hunting with? (Who showed you how to hunt? How many people do you need on a hunting trip?)
5. How often do you eat country foods? (What are the country foods you most commonly eat? How do you get them?)

Questions about Beluga Hunting:

6. Have you ever hunted beluga? If so, when was the last time you hunted one? (Who taught you how to hunt? Why do you hunt beluga?)
7. Has anyone in your family hunted beluga? Who taught them how to hunt beluga?
8. Have you eaten muktuk before? If so, how did you get it? (Have you prepared muktuk, and how? Do you share it with anybody?)

9. When is best to hunt beluga in the season? (What time is best to hunt beluga in the day? For how long are beluga sighted around Shingle Point?)
10. Describe some of the problems or dangers involved in hunting beluga. What are the main reasons people don't hunt beluga?

Questions about Changes in Aklavik and at Shingle Point

11. Have you noticed a change in attitudes and daily life at Shingle Point during the summer? (If so, how is it different from what you remember from earlier? What has stayed the same?)
12. Do you think these changes are affecting the beluga hunt? Why or why not?
13. In your memory, have the seasons and environment changed at Shingle Point? How have these changes affected the beluga hunt?
14. How do you see the future of beluga hunting in Aklavik? (Is it important to you? What kind of knowledge and experience is needed to keep the beluga hunt going strong? How would youth gain that experience?)

APPENDIX VI: COMMUNITY INFORMATION POSTER FOR AKLAVIK

Do you harvest beluga?

Does your family have a history of harvesting beluga?

Do you harvest other animals?

I am Elizabeth Worden and I will be in Aklavik and at Shingle Point from June-August 2017 to interview people who want to participate in a Masters study on the Aklavik beluga harvest.

The project, supported by Aklavik Hunters and Trappers Committee, will look at changes that have affected Aklavik's beluga harvest numbers and what those changes mean to people and the future.

If you want to be interviewed or have questions, I would love to talk to you!

Phone number: [redacted] **(call or text)**
Email: [redacted]

This project has been approved by the Aurora Research Institute, University of Manitoba's Joint-Faculty Research Ethics Board, and the Aklavik HTC.