

# **Inuit Safety Culture and its Potential Influence on Management Practices in Auyuittuq National Park, Nunavut**

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A thesis submitted to the Faculty of Graduate Studies in partial fulfillment of the  
requirements for the degree of

**Master of Natural Resources Management**

Natural Resources Institute  
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**By**

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## **Abstract**

This thesis explores how Inuit knowledge of safety, otherwise referred to as Inuit safety culture, can guide safe land use practices in and around Auyuittuq National Park. This research was based in Qikiqtarjuaq, Nunavut, an Inuit community north of Auyuittuq National Park on Baffin Island. This work follows a participatory, micro-ethnographic approach achieved by working within the context of the longer term Parks Canada Inuit Knowledge Project. Specifically, participant observation, 25 semi-structured interviews, multiple focus group meetings, and a document review of Parks Canada documents were conducted over the span of three visits to Qikiqtarjuaq from spring 2007 to summer 2008. The thesis documents how the people of Qikiqtarjuaq understand and respond to safety issues. Their safety culture is described with the use of five themes that begin to illustrate a holistic way of life. Specifically, the knowledge required to be safe is tied to the past, developed through experience, maintained through relationships, specialized to the arctic environment, and connected to Inuit identity. The Inuit safety culture is also a dynamic system that is constantly in flux. In particular, Qikiqtarjuarmiut safety culture is being influenced by drastic environmental change and changes to the processes in which community youth learn how to be safe. Finally, how Inuit safety culture may be incorporated into the management of Auyuittuq National Park is discussed with specific recommendations provided. The people of Qikiqtarjuaq want to ensure that visitors are provided with the necessary information, equipment, and support to ensure that everybody has a safe and positive trip to their homeland. However, to truly incorporate Inuit safety culture in the management of Auyuittuq National Park, a greater means of communicating and collaborating with Inuit experts must be developed.

Local experts must be provided with the power and capacity to ensure that the management of Auyuittuq National Park reflects their knowledge, acknowledges their authority, and promotes the safety of all those who travel in the area.

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## **Chapter I: A Research Project to Explore Inuit Safety Culture in and around Auyuittuq National Park**

Parks Canada's official mandate is to protect areas that best represent the natural and cultural heritage of Canada while also providing opportunities for public education and enjoyment (Parks Canada, 2002). In order to truly achieve this mandate and to develop their knowledge of each park, the institution must collaborate with all stakeholders and, in particular, local Aboriginal groups who have detailed knowledge of their areas of use, retain long-term relationships with this landscape, and maintain rights in protected areas (Kulchyski, 1994; M'Lot, 2002). Although state natural resource management systems, including Parks Canada, have historically excluded Aboriginal peoples' knowledge, national park management in Canada is becoming more aware of the importance of this knowledge for sustainable management (Hodgins & Cannon, 1998; McNamee, 1993).

In Nunavut, both the Nunavut Land Claims Agreement (NLCA) (1993) and the Inuit Impact and Benefit Agreement (IIBA) (1999) deal with the responsibility of Parks Canada to the neighbouring communities of three Nunavut National Parks, including

Auyuittuq National Park (Indian and Northern Affairs Canada [INAC], 1993; Parks Canada and Qikiqtani Inuit Association, 1999). In addition, the IIBA outlines a formal structure that ensures participation of local representatives in the management of National Parks. Included in this is the requirement that Inuit knowledge must be protected and promoted through the management of Nunavut National Parks (Parks Canada and Qikiqtani Inuit Association, 1999). The emphasis on Inuit knowledge in National Parks must also include the way safety issues are managed. From Parks Canada's perspective, the safety issues of concern in Auyuittuq National Park include the dangers associated with human-animal interactions, rapidly changing environmental conditions, rockslides and avalanches, environmental contamination due to pollutants, variable glacier streams, and the lack of available emergency services (Parks Canada, Nunavut Field Unit, 2008). However, understandings and responses to safety and risk are inherently contextualized within a socioeconomic, cultural, and institutional framework (Boholm, 2003). The values, beliefs, and norms that guide the way a certain group of people understand and respond to safety issues can be understood as their 'safety culture' (Reason, 1998). Inuit therefore have a distinct safety culture when travelling in their environment. This safety culture has facilitated community survival in the arctic and continues to guide systems of governance and decision-making in land-based activities, sharing of information and resources, and flexibility in adapting travel plans based on changing environmental conditions (Krupnik & Jolly, 2002). It also remains a critical resource, particularly in the face of increasing social and environmental change (Krupnik & Jolly, 2002). To implement their mandate and the IIBA, Parks Canada must work at incorporating Inuit safety culture into their management framework.

## ***1.1 Research Purpose and Objectives***

The purpose of this research was to explore how Inuit safety culture can guide safe land use practices in Auyuittuq National Park by investigating the knowledge and practices of the Inuit of Qikiqtarjuaq. Specific research objectives included; 1) documenting Inuit safety culture; 2) examining the social and environmental changes that may be challenging or facilitating Inuit safety adaptations; and 3) looking at ways that Inuit safety culture can enhance the current park safety management framework.

## ***1.2 Research Methodology and Methods***

Primarily through the involvement of a community Working Group that was created as part of Parks Canada's four year Inuit Knowledge Project, this research was developed from and guided by local priorities. Field research relied on a participatory, micro-ethnographic approach and applied methods including participant observation, semi-structured interviews, and group meetings in the form of Working Group meetings, focus groups, and on-the-ice workshops. A document review was also used to analyze Parks Canada documents to further understand local safety issues as well as current safety measures in Auyuittuq National Park.

## ***1.3 Study Area***

Qikiqtarjuaq, which means "big island" and is formally called Broughton Island, is a community of around 500 people, 95 percent of whom are Inuit. The community is located on an island off the east coast of Baffin Island in the Davis Strait. The area is home to polar bears, walrus, seals, and other marine mammals and is also known for its abundance in icebergs. For around 8 months of the year, this landscape is characterized

by snow-covered land and sea ice. The frozen ocean provides a relatively smooth surface where local people create a network of routes extending up and down the coast line and in land through frozen fiords, rivers, and lakes.

The development of the town-site of Qikiqtarjuaq began in the mid 1950s with the construction of a DEW line site. The Distant Early Warning line was a series of arctic military radar stations built during the Cold War. This construction brought Inuit to the settlement for employment purposes and, later, to be close to a store, school, and church. However, this settlement became permanent when the government enforced the relocation of the remaining residents from the nearby communities of Kivitoo and Padloping Island. In 1979, Qikiqtarjuaq obtained hamlet status. Hunting and fishing activities continue to play an important role in the economy and the culture of the community. Consequently, the sea ice around Qikiqtarjuaq is an important travel and hunting platform for the community. Through extensive travel, elders and hunters in Qikiqtarjuaq have developed detailed knowledge of the processes and conditions of their arctic environment.

In 1976, Auyuittuq National Park Reserve, meaning the “land that never melts” was established. The park covers an area of 13 089 km<sup>2</sup>. Although the concept of a park was a foreign one to local Inuit, land use within the area, such as the right to harvest traditional resources, were maintained (INAC, 1993). Accordingly, the Inuit of Qikiqtarjuaq and Pangnirtung continue to use the area for hunting and fishing, as a travel route, and to promote local tourism activities. The park also provides some employment opportunities to the community of Qikiqtarjuaq. Other economic benefits are derived from visitors staying in the community or in need of outfitting services to access the park.

Auyuittuq National Park is the most known and visited park in Nunavut, with 400 to 600 visitors a year (Parks Canada, Nunavut Field Unit, 2008). Auyuittuq is accessed either from the north, from the community of Qikiqtarjuaq, or more frequently, from the southern community of Pangnirtung. Visitors primarily visit the park during either the months of April and May for skiing or in July and August for climbing and hiking.

#### ***1.4 Contributions to Knowledge***

Locally, this research has contributed to the enhancement of community involvement in park management, and may facilitate improvements in safety measures in Auyuittuq National Park. In addition, community research outcomes emphasize the documentation of local practices, knowledge, and language that have been challenged by social changes and environmental changes, but remain crucial to safety. As an academic contribution, the results of this research add to the dialogue about safety issues in a northern Inuit community while also addressing the collection and use of Inuit knowledge in resource management.

#### ***1.5 Organization of thesis***

Chapter II begins with a discussion on the literature regarding safety culture. The topics of Inuit knowledge and Inuit safety culture are then introduced. This involves a discussion on the influences of change and adaptation processes, including the use of Inuit knowledge in formal management systems, which are altering safety issues and practices in Inuit communities. In Chapter III, the participatory, micro-ethnographic methodology and the methods that were used in this research are described. In addition, each research objective is explained and linked to particular research methods. Chapters

IV, V, and VI correspond directly with the three research objectives. Chapter IV presents Qikiqtarjarmiut safety culture, Chapter V examines the social and environmental changes that may be challenging or facilitating Inuit safety adaptations in Qikiqtarjuaq, and Chapter VI looks at ways Inuit safety culture may enhance the current park safety management framework. Finally, in Chapter VIII, I consider the lessons learned from this research process regarding Qikiqtarjuaq safety culture, how changes are influencing this culture, and how Parks Canada safety management framework could be improved with greater local involvement and empowerment.

It is important to note that life in the arctic is changing rapidly at every level and that this research only provides a snapshot of one aspect of life at a certain time. Even within this timeframe and focus, the complexity that exists in Qikiqtarjuaq, as with all societies, cannot be adequately described in a thesis. Given this complexity, I have chosen to focus only on the themes that prominently emerged from the participants to reflect their emphasis and their main concerns. In addition, although the organization of this thesis separates the discussion of ‘Inuit safety culture’ and the ‘changes that may be influencing safety issues’, it is important to stress that there is not one traditional safety culture suddenly being impacted by a number of changes. Instead, the forces of change presented here are those that were emphasised at this time, just as different forces have influenced the community in the past and will continue to do so in the future. The safety culture of the people of Qikiqtarjuaq has and will always be in flux, responding and adapting to on-going changes in their social-ecological environment.



## Chapter II: Cultural Understandings of Safety

If you walk down the trail as a trained geologist, while you see the trees, the swamp, the sky, what you are likely to notice is the way glaciers thousands of years old made the landscape, leaving behind the striations in the rock, the way the vein of quartz is likely (or not) to be mineral bearing, and so on. If you walk down the same trail as a botanist, while you would see the same sky and rocks you would be more likely to notice that this is a transition zone between boreal and coniferous forest, that the processes of decay and replenishment are at a specific stage, that certain uncommon species of wildflower can be found on this part of the trail. A hunter might walk down the same trail with quite a different perspective, noting locations for trap settings, animal prints and droppings, the flicker of partridge tails. An artist might see a perspective or view the relation between trees and sky and rocks that promises a lively canvas... (Kulchyski, 1994, p. 15)

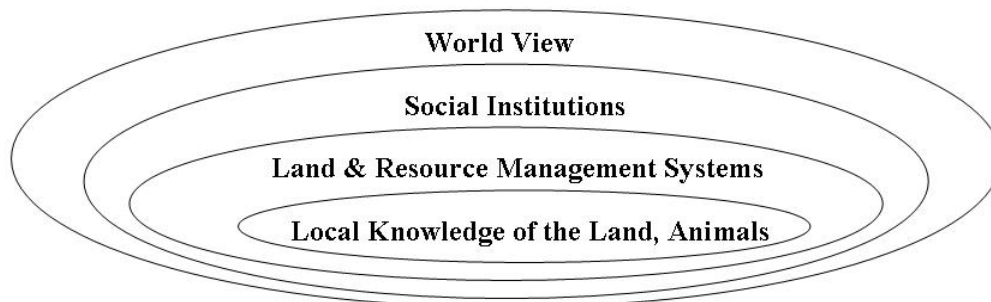
As indicated in this excerpt, the way one perceives and reacts to their environment is contingent on past experience, knowledge, and cultural worldview. Davidson-Hunt and Berkes (2003) explain how perception is formed spatially, temporally, and through memory amongst the Anishinaabe people in north-western Ontario, Canada. Spatial



perception refers to the distribution of objects across the landscape whereas temporal perception involves connecting changes that have occurred over time with one's current understanding of the landscape. Language and localized place names are some of the aspects that connect memory to both spatial and temporal perceptions as certain terms are connected to traditional resources, geographical characteristics, and historical land uses. The cultural landscape of the Anishinaabe is therefore characterized by the ancient relationship between the environment and the people and this knowledge is maintained as long as this relationship continues (Davidson-Hunt & Berkes, 2003). Environmental perception is not based only on what is there, the biological occurrences, but also the social and cultural activities and knowledge that connect an individual to a landscape (Davidson-Hunt & Berkes, 2003). The Anishinaabe perspective, along with every other diverse way of experiencing and knowing the environment, adds something to our greater understanding as individuals and societies (Davidson-Hunt & Berkes, 2003; Kulchyski, 1994).

The way people perceive the qualities and implications of objects within their environment is also greatly influenced by their previous experience and cultural knowledge (Boholm, 2003). With regards to Indigenous peoples and their interactions, knowledge, and perspectives of their environment, this relationship has often been classified in academic literature as traditional knowledge. Although there is no one accepted definition, traditional knowledge can be understood as “a cumulative body of knowledge, practice, and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment” (Berkes, 2008, p.7). In

Nunavut, the term traditional knowledge is frequently replaced by the term *Inuit Qaujimagatuqangit* (Laidler, 2006; Wenzel, 2004). This term is meant to encompass all elements of Inuit culture including knowledge, values, beliefs, language, skills, and worldview (Wenzel, 2004). However, in Qikiqtarjuaq, Inuit Qaujimagatuqangit, which literally means ‘what is long known by Inuit’, was understood as reflecting only the knowledge that elders held. With this in mind, the term ‘Inuit knowledge’ was used throughout the research and this thesis to reflect the contemporary knowledge system that exists within Inuit communities (Laidler, 2006). However, since this thesis only focuses on one aspect of Inuit knowledge, that of safety, the term ‘Inuit safety culture’ is used to reflect how Inuit knowledge is expressed with regards to safety. Berkes’ (2008) definition, however, does provide a framework for which to conceptualize how traditional or Inuit knowledge may be expressed. He explains that traditional knowledge involves a dynamic interaction of four levels that are shown in Figure 1: specific environmental knowledge, management systems, social institutions, and worldview.



**Figure 1: Levels of analysis in traditional knowledge and management systems (Berkes, 2008, p.17)**

This figure shows how traditional or Inuit knowledge can, depending on the context, be reflected and communicated in many ways. This may include stories, skills, songs, rules, practices, leadership, beliefs, and values (Stevenson, 1996). This knowledge must also

be understood as dynamic as new information is always being combined with the wisdom of the past to deal with contemporary issues (Berkes, 2008; Stevenson, 1996).

Consequently, just as the collective knowledge or social memory guides individual perception and action, individual experiences and thought also inform collective knowledge (Davidson-Hunt & Berkes, 2003).

Perceptions of risk and safety are similarly understood as contextualized within a socioeconomic, cultural, and institutional framework (Backett-Milburn & Harden, 2004; Boholm, 2003). For example, a study documenting risk perception within nuclear families showed that understanding of risk developed from experience, shared family knowledge and stories, as well as from the information sources and collective knowledge existent in their larger societal framework (Backett-Milburn & Harden, 2004). Similarly to perceptions of risk, safety is understood as a social construct involving relationships between people, social institutions, knowledge, beliefs, experiences, discourses, practices, collective memories, and technologies (Boholm, 2003; Gherardi & Nicolini, 2002). This may be understood as the ‘safety culture’ of a group of people. Reason (1998, p.294) explains that Uttal’s (1983) definition of organizational culture remains the most accurate description of safety culture: “shared values (what is important) and beliefs (how things work) that interact with a company’s people, organizational structures, and control systems to produce behavioural norms (the way we do things around here)”. Any safety culture is, therefore, in constant flux; responding to new experiences, changes in leadership, and adjustments in the beliefs of individuals (Reason, 1998). So, the knowledge that facilitates safety in any culture is not just a set of rules, but a fluid way of life that is continually created and recreated and supported through social structures

(Backett-Milburn & Harden, 2004; Gherardi & Nicolini, 2002; Rooke & Clark, 2005). Accordingly, learning is dependant on one's interaction and participation within that socio-cultural setting in which knowledge is transferred and kept alive (Davidson-Hunt & Berkes, 2003). Anything that prohibits one's participation in these social structures, such as a lack of language skills, may be considered a barrier to acquiring the required knowledge (Gherardi & Nicolini, 2002). For example, in an ethnographic study of safety at a building site, Gherardi & Nicolini (2002) determined how the knowledge required to be safe is transmitted to new employees. The authors concluded that "learning safety amounts to becoming 'absorbed' in the morality and culture of the local community of practices" and that "safety is a social competence – something that cannot be learnt, but only practiced" (Gherardi & Nicolini, 2002, p. 206). Therefore, the knowledge required to maintain safety may not necessarily be fully articulated and described, but only exercised through its application in everyday life. Similar to how a knowledge system was described amongst the Kluane people, safety may not simply be knowledge, but a 'way of life' (Nadasdy, 2003, p.63).

## ***2.1 Inuit Knowledge about Safety***

The interest in different cultural groups and the way in which they interact with their environment has a lengthy history in academia, particularly in the field of anthropology. For the Inuit, this is exemplified with much documentation regarding all aspects of Inuit society. It can be argued that this strong interest largely comes from the fact that Inuit have 'managed to survive' in what is perceived by outsiders as a hostile environment (Fienup-Riordan, 1983). From a southerner's point of view, the arctic, characterized by the cold, ice, and wind, is seen as a place where survival is an

astounding accomplishment. This has led to accounts of how Inuit navigate and travel in their environment, what type of environmental indicators and terminology are used to understand their environment, the technology in use, and so on (Aporta & Higgs, 2005; Kativik Regional Government, 2008; Krupnik, Huntington, Koonooka, & Noongwook, 2004; Laidler, 2007; MacDonald, 1998, McDonald, Arragutainaq, & Novalinga, 1997; Riewe, 1991; Tremblay et al., in press). However, less has been written on Inuit safety culture or the way they perceive safe land use and how they approach decision making that ensures not only the ability to survive in the arctic landscape, but to thrive. Inuit themselves have three terms that relate to safety; *Attarnaqtuliriniq* means dealing with danger, *Attarnaqtumiittailimaniq* is to avoid danger, and *Nangiarnaqtuliriniq* is to deal with a dangerous area (Attagutsiak, 2008, personal communication). Inuit safety culture encompasses all of these terms while also relating to the way Inuit regulate themselves, the detailed knowledge hunters have of their environment, the importance of communal responsibility for the safety of each person, and the means with which Inuit children come to acquire the knowledge they need to be safe.

For the most part, up to the 1950's and 60's, Inuit lived on the land. During this time, elders, shamans, and camp leaders had considerable influence over camps and were in charge of preserving social order, values, and safety. General principles for keeping social order were applied in many variations which were often embedded in and transmitted through songs, stories, practices, and rituals (Oosten & Laugrand, 2002). However, it was not only these human leaders that were responsible for keeping social order but also animals, spirits, and the weather.

The living person and the land are actually tied up together because without one the other doesn't survive and vice versa. You have to protect

the land in order to receive from the land. If you start mistreating the land, then it won't support you... In order to survive on the land, you have to protect it. The land is so important for us to survive and live on; that's why we treat it as part of ourselves (Mariano Aupilaarjuk, cited in Bennett & Rowley, 2004, p. 118).

Inuit social norms, therefore, include treating animals and the environment with respect.

This is based on the understanding that humans, the environment, animals, weather, and spirits are all connected (Oosten & Laugrand, 2002). So, if a hunter treats animals with disrespect, they will retaliate against that hunter and perhaps their whole community (Aupilaarjuk, Tulimaaq, Joamie, Imaruittuq, Nutaraaluk, 1999). Another example involves the understanding that certain places must be avoided because of the spirits that reside there. If a hunter dismisses the warning from his leaders and visits these areas, he may lose his strength and die (Kappianaq & Nutaraq, 2001). The relationship Inuit have with their land influences all aspects of life including subsistence, social structures, seasonal cycles, and safety.

For the majority of the year, small groups of Inuit would traditionally move across the region to areas known to them as plentiful in animals, marine life, or fish that they harvested for subsistence (Briggs, 1991). Today, Inuit live in settlements but continue to travel extensively in their environments, with communities having an average hunting territory of 107,337 km<sup>2</sup> (Riewe, 1991). Travel and safety within this environment requires highly detailed knowledge and understanding of the land and ice.

Knowing the characteristics of the land is not that easy, especially in our land. It is very cold in deep winter. You have to know about surviving on the land and you have to know how to live on it, for example, how to hunt for food to survive. In order to do this, there are many things you have to know. (Cornelius Nutaraq, cited in Kappianaq & Nutaraq, 2001, p.1)

The arctic is characterized by a range of potential safety hazards such as the extreme cold and wind along with the varying ice and snow conditions. However, along with being

characterized by these extreme hazards, the arctic is also the homeland for Inuit. Within this landscape, therefore, are stories, place names, and events that have emerged from generations of use and continue to be known and used by Inuit communities (Aporta, 2004; MacDonald, 1998). In addition, Inuit experts have detailed knowledge of the complex processes in their environment including land formation, snow and ice processes, weather systems, and animal behaviour (Aporta & Higgs, 2005). This knowledge is used to navigate, avoid hazards, observe changes, and ensure safety (Aporta & Higgs, 2005; MacDonald, 1998; McDonald et al., 1997). Some of the indicators used, for example, to assess sea ice safety is the known strength of currents in certain areas, water depth, moon cycles, salinity, recent and current temperature, wind direction and strength, precipitation, solar radiation, shoreline topography, and past ice conditions (Kativik Regional Government, 2008; Laidler, 2007; Riewe 1991). Hunters can usually determine how 'safe' the ice is by being observant of all these indicators while also observing the colour and texture of the ice they are travelling on. Dark ice indicates the presence of water saturating thin ice while lighter or grey ice indicates good quality or safe ice (Riedlinger, 2001). Inuit hunters are continually 'reading' their surroundings, often observing the smallest characteristics of an area, in order to choose their next travel route, action, or plan.

If you are going to travel for a long distance over land that you do not know, a person who does know it should explain it to you very clearly. He will be talking about things that you can see outside and tell you that you will come across this or that. He may use the snowdrifts, for example, telling you how and where not to turn. He will tell you to watch the wind to see that it has not changed direction. If you obey him right to the letter, it is possible to get where you want to go (David Suluk, cited in Bennett & Rowley, 2004, p. 115).

Learning to read these variables and consequently choosing appropriate action is central to Inuit survival on the land. Some of this process is outlined in the book *Watching Ice and Weather Our Way*, in which a Yupik Elder, Chester Noongwook, details his ‘rules of weather observation’ (Krupnik et al., 2004, p.59). These ‘rules’ include continual observations of the wind, the sky, the water or ice, and a persons’ own physical being. Noongwook also emphasizes on-going communication with other people to get their analysis of weather conditions (Krupnik et al., 2004). In reading these changing variables, Inuit draw on past experiences as well as stories and instructions they have received.

Although this detailed knowledge is a necessity on an individual basis to ensure one’s own safety, Inuit culture also incorporates a sense of communal responsibility for the safety and well-being of others (Collings, Wenzel, & Condon, 1998). It was traditionally believed that people who helped others tended to be more successful in their own endeavours (Aupilaarjuk et al., 1999). A great leader, for example, would be identified, in part, by their regard for the well-being of all of the members of their camp (Bennett & Rowley, 2004). Similar practices, such as sharing country food and resources, continue today in many Inuit communities (Collings et al., 1998). Information sharing is also central to survival in the arctic (Krupnik et al., 2004). Individuals active on the land are continually watching the weather and sharing their observations with those around them in order to assess the safety of travel conditions. This is done amongst a group of hunters in town, while on the land, or through the shortwave radio and satellite phone (Laidler, 2006). As a result of this continual intake and analysis of information



and in response to changes in both environmental and social systems, Inuit knowledge constantly evolves.

The process of coming to understand how to read the environment and ensure individual and collective safety is embedded within Inuit social structures, rules-in-use, and worldview. Briggs (1991) explains that Inuit generally understand their surroundings as being characterized by uncertainty and potential danger. This understanding reflects the arctic landscape and is developed in a child through day-to-day understanding and practices. For example, Inuit games often involve creating a sense of danger which promotes in its players the ability to identify important values in similar situations (Briggs, 1991). Because of this worldview characterized by uncertainty, Inuit rely on constant observation and continual testing of their hypothesis to re-evaluate and update their knowledge. Accordingly, children are trained to observe and draw conclusions from their surroundings and to practice the skills observed. Despite warnings of real consequences, Inuit youth are not usually prevented from entering a dangerous situation, forcing them to see the link between their actions and the consequences (Briggs, 1991). The skill of constantly observing one's surroundings also enables Inuit to see changing potential in people and objects (Briggs, 1991). So, hunters are able to stay flexible and use the best knowledge and tools available for a particular situation. This worldview, along with interconnected practices and skills, are instilled in young Inuit.

Children also learn through legends and stories based on past experiences. Legends may describe other beings or places to avoid while also instilling values such as the importance of listening to elders. For example, the legend of Qallupalik warns children of going on the ice alone because they may be pulled through the cracks into the

ocean by Qallupalik, a sea monster that preys on children (CBC, 2003). Stories about historical events or past experiences, such as times when hunters came into danger, are also shared. Through these stories, children realize that becoming a successful hunter is not only a matter of skill, but also of attitude and intent (Stairs & Wenzel, 1992). As young Inuit learn values and skills, they develop a means to articulate their world in Inuktitut. In the context of safety, Inuktitut provides a means to describe highly detailed environmental processes as well as interactions between humans and their environment (Aporta, 2002; Laidler, 2007; MacDonald, 1998).

As children grow older, they develop their cultural worldview, skills, and *isuma*, the ability to reason and understand their world. *Isuma* is reflected as children begin to solve problems in a logical manner, act appropriately to one's relations, and show the desire to participate in socially valued activities (Briggs, 1970). *Isuma* includes safety knowledge and practices; learning how to work within a social context, learning the skills one needs to be a successful hunter or, for young women, how to make and maintain warm clothing and prepare food (Stuckenberger, 2005). Children usually learn this knowledge and skills at their own pace by observing and mimicking others, usually the close family members that surround them (Briggs, 1991; Condon, 1987). Through a life-long learning process, it is hoped that children will become *inummarik*, 'a genuine person' (Brody 1975; Stairs, 1992). *Inummarik* is demonstrated through skill, a generous and tolerant attitude, and maintaining proper relationships with people, animals, and the environment (Stairs, 1992).

As with all aspects of their environment, Inuit people possess a detailed understanding of the risks and the methods of ensuring safety when travelling in their

environment. This knowledge is acquired through a combination of experience and Inuit traditional knowledge (Berkes, 2008; Briggs, 1991). The knowledge hunters use to be safe on the land is infused in the way they raise their children, the skills they use, their worldview, and their identities. ‘Safety culture’ is thus just one aspect of the broader Inuit culture and way of life.

## ***2.2 Challenges to Inuit Safety and Adaptations***

There are known risks, associated with high levels of uncertainty, which societies have dealt with for generations and, over time, have developed knowledge and appropriate responses to mitigate these risks. An additional category of risks are those that have recently emerged in a society, and therefore no corresponding coping strategies have been established (Boholm, 2003). Because of this, the risks that are new to a society may be of greater concern than risks that have been understood as part of a society’s existence (Boholm, 2003). In the arctic today, environmental and social changes have increased dramatically within the last two generations. Irniq, Rowley, and Tester (2006) argue that the resilience of Inuit social systems is being undermined by two major forces of change, environmental changes and the changes experienced through colonization which displaces the power of Inuit people. Although these challenges are distinguished here as social and environmental changes, they cannot be so easily categorized at a community level. In addition, although there may be similar issues in Inuit communities across the north, communities may be experiencing these broad issues differently.

### 2.2.1 Colonization

The legacy of colonialism must always be acknowledged when considering Indigenous peoples (Simpson, 2005; Smith, 2006). Colonialism has been a totalizing force in the Aboriginal societies of Canada, influencing all aspects of life (Kulchyski, 1994). For Inuit people, this has included being moved into settlements and increased control and presence exerted by the Canadian state over their day-to-day lives (Tester & Kulchyski, 1994). Although life in settlements has perhaps increased the material standard of living for Inuit, it has also reduced their day-to-day flexibility in interacting with the environment and move with the seasons, and it has increased Inuit dependency on the outside world (Huntington & Fox, 2005). With the government of Canada imposing their knowledge and values on the north, Inuit knowledge and the way of life that supports this knowledge system has been challenged. As a result, the way Inuit understand and ensure their safety has also been affected. One example of this is the *Qaujivaallirutissat* book translated as the *Book of Wisdom for the Inuit* which was published “so that Eskimos would understand more because one’s inexperience creates crises and problems that could have been avoided with knowledge” (Harrison, 1964, p.2). The Federal government produced this book to, in effect, teach the Inuit the practices they believed necessary for well-being. The text explains how Inuit should ensure their health, organize their leadership structure, plan their days, maintain their camp, boats, and rifles, harvest animals, and plan for times of scarcity (Harrison, 1964). With this, the book also displaces Inuit knowledge, practices, and social structures and defines the power relationships between Inuit and non-Inuit (McNicoll, Tester, & Kulchyski, 1999). Of course, this is only one of many instances that colonial powers have influenced Inuit

safety in their environment. In many ways, this colonial power is still being exercised today through several state organizations, policies, and practices. One of the greatest community concerns these days with regards to safety is the change in the way Inuit youth are educated (Condon, Collings, & Wenzel, 1995; Douglas, 1994).

As described above, Inuit were traditionally educated by their family members through experience and instruction that was often transmitted through stories and legends (Briggs, 1991). The introduction of schooling has had large impacts on the amount and type of learning that takes place between the older and younger generations which was integral to education in camps. Specifically, changes include the shift from experience based learning on the land to the classroom settings of community schools (Stuckenberger, 2005). Schools not only take away time from community youth, but also impose values that may be inconsistent with those taught in Inuit families (Douglas, 1994). Youth are also influenced by other information sources, such as global media, that inspire new values and interests as well as pressures from the global economic system in which hunting is only one way of making a living (Condon et al., 1995). The centralized community, with its associated values, influences, and restrictions, has created a generation of youth that is less likely to engage in the traditional economy that relies on subsistence activities (Condon et al., 1995). This lack of land-use experience amongst Inuit youth has resulted in a diminished knowledge regarding local environmental characteristics and has obvious safety implications (Takano, 2005; Thorpe, 2000). For example, elders in Igloolik worry that some community youth, because of their lack of experience, are not able to identify thin ice areas and are thus at risk when travelling on the sea ice (Takano, 2005). Although ensuring physical safety is

a primary concern regarding the diminishing land-use skills amongst Inuit youth, it is not the only outcome of youth being increasingly disconnected from their environment. The difference in lifestyle and education has also created a large generational gap between the elders and the younger generation who, in effect, were raised in two different worlds (Condon et al., 1995). This gap further complicates the problem of inexperienced youth because the traditional learning structure that relies on learning from one's elders has been challenged (Takano, 2005). This issue of how Inuit knowledge can be passed on from elders to youth is a major challenge across Nunavut, so much so that the Nunavut government developed the department of Culture, Language, Elders, and Youth with this as its focus. Finding ways to bridge this divide is a constant challenge for Inuit communities.

Sometimes I know it must be difficult for young people to ask questions about the type of life our ancestors led. Since you are younger than I am, if I were to tell you to ask me questions regarding our ancestors, you would not know what to ask because you did not experience it. You don't know what it was like... I know it is difficult for young people to know what questions to ask (Kappiannaq & Nutaraq, 2001, p.3).

Having a relationship with the environment is also understood to be an integral part of Inuit identity, a means of learning life values, important to family relationships, and overall well-being (Condon et al., 1995; Takano, 2005). As one young man from the community of Holman phrased it; "hunting is the best part of life" (Condon et al., 1995, p.31)

The stresses of living in a permanently settled community are not solely experienced by Inuit youth. Similar economic and social pressures influence Inuit adults. For example, the need for wage income is ever-present in Inuit families, and employment therefore becomes another restricting force on the amount of time people spend out on

the land (Laidler, 2007). As Inuit land-use declines, detailed Inuktitut terminology for environmental interactions is lost along with overall environmental knowledge. At a community level, there are fewer people consistently monitoring conditions and change (Laidler, 2007). As a result, accidents occur more regularly and safety concerns continue to increase in Inuit communities. Today, many elders are no longer confident that members of their community have the proper knowledge and ability to travel safely and deal with unforeseen problems while on the land (Kappiannaq & Nutaraq, 2001; Takano, 2005).

Because youth are no longer spending as much time learning on the land within the context of family camps as they have traditionally done, it is perceived that the community school can also be used to transmit vital Inuit knowledge. This includes classes emphasizing Inuit values and skills through Inuit teaching methods of telling stories, observation, and imitation (Stuckenberger, 2005). An example is the recently developed *Paariaqtuqtut: Land-Skills Training Course* in Igloolik, NU. Here, local youth were taken on a 9 day trip with elders where topics such as place names, hunting skills, recognition of safety hazards, mechanical management, landscape features, and weather prediction were emphasized (Takano, 2005). Placing the emphasis on the value of Inuit knowledge in the modern context is integral to the future well-being of Inuit people (Government of the Northwest Territories, 1991). By using their knowledge to guide youth, Inuit are claiming their continual right to educate their children using their own knowledge system while concurrently providing youth with the knowledge of who they are and where they come from (Government of the Northwest Territories, 1991).

The difference in learning systems, constraints on time due to formal school hours and wage economy employment, financial requirements associated with subsistence activities, and change in overall youth culture has resulted in limited opportunity for youth to learn necessary survival skills as they did in the past (Condon et al., 1995; Takano, 2005). The youth in Inuit communities today continue to receive teaching from their relatives in camp, but are now also immersed in a western style education system and the global world.

### **2.2.2 Environmental Change**

Climate change is one of the great challenges in the modern world. Given that climate change is being felt with the greatest force in the polar regions, this is particularly true for Inuit communities of the Canadian north (Arctic Climate Impact Assessment [ACAI], 2004). In recent years, the topic of Inuit safety has emerged in academic literature, specifically in the context of how communities are experiencing and adapting in the face of rapid environmental change (Krupnik & Jolly, 2002; Laidler, 2006; McDonald et al., 1997; Riedlinger, 2001; Thorpe 2000). In the arctic, a small change in average temperatures may have a great influence on precipitation, winds, vegetation, and ice formation (Thorpe, 2000). Accordingly, changes have been observed across the Canadian arctic in temperatures, precipitation, multi-year ice and snow, seasonal weather systems, sea ice and fresh water ice processes, water levels, wind strength, dominant winds, and a variety of animals and plant species (Krupnik & Jolly, 2002; Laidler, 2006; McDonald et al., 1997; Riedlinger, 2001; Thorpe 2000).

Although the observations of changes in climate are based on Inuit knowledge, climate change is also challenging Inuit knowledge (Jolly, Berkes, Castleden, Nichols, &



The Community of Sachs Harbour, 2002). Increased variability in weather and environmental characteristics heighten safety concerns within Inuit communities (Krupnik & Jolly, 2002; Laidler, 2006; McDonald et al., 1997; Riedlinger, 2001; Thorpe 2000). For example, Inuit communities in the Hudson Bay bioregion are realizing that their traditional methods of interpreting and predicting weather patterns and seasonal events are no longer generating accurate results (McDonald et al., 1997). Similarly, the Inuvialuit people of Sachs Harbour, NWT are observing complex and interrelated changes that include ocean temperature, currents, distribution of leads and pressure ridges, animal distribution, wind patterns, and ice characteristics such as thickness and colour (Riedlinger, 2001). Such safety concerns are only further augmented in Inuit communities because of their minimal search and rescue capabilities (Gearheard et al., 2006).

Although the ability to adapt to constant variability is part of Inuit tradition and knowledge, there is a concern that environmental changes are occurring too quickly and are severely challenging the adaptive capacity of Inuit people (Berkes & Jolly, 2001; Gearheard et al., 2006; Newton, Paci, & Ogden, 2005; Thorpe, 2000). Nevertheless, various institutions across the north are attempting to investigate and put in to action various adaptation strategies. Some ideas involve providing financial support and insurance for hunters, supporting communication between hunters and the community as well as between communities, and facilitating collaborative work and information-sharing amongst governments, communities, and scientists (Nunavut Tunngavik Inc. [NTI], 2005). It is emphasized that adaptation to climate change in Inuit communities should be based primarily on Inuit knowledge while also sharing and receiving

knowledge from the scientific community (Government of the Northwest Territories, 1991; NTI, 2005). Building the community capacity to enable Inuit knowledge research empowers communities and also provides Inuit youth with an opportunity to connect with community elders, Inuit culture, and language (Ellis, 2005; Takano, 2005). In addition, subsistence activities must be supported through the adaptation processes because of their ongoing importance to Inuit identities and cultural fabric (Irniq et al., 2006). Some examples of adaptation initiatives established in communities involve hunters changing their timing, location, method, species of focus, and equipment used in seasonal harvesting activities (Krupnik & Jolly, 2002; Riedlinger, 2001). Hunters are also implementing systems for monitoring ice conditions and producing community educational material regarding safety (Kativik Regional Government, 2008; Nickels et al., 2002; Riedlinger, 2001; Tremblay et al., in press). Although climate change continues to impact all facets of Inuit society, communities are now assessing new means of adapting and of ensuring their safety.

### **2.2.3 Using Inuit Knowledge in Resource Management**

Regional and national organizations, in particular, have the means to encourage, enable, and equip Inuit to adapt to changes. Specifically, Inuit need to be empowered to adapt and determine their own future, which includes the power to manage their environment, using their knowledge, in a way that promotes their self-reliance (Huntington & Fox, 2005; Irniq et al., 2006). Historically, Aboriginal peoples in Canada and their knowledge have been excluded from formal natural resource management institutions and processes (Hodgins & Cannon, 1998). However, as Aboriginal peoples assert their knowledge and rights, there has been a growing recognition of the need for

Aboriginal involvement in resource management (Berkes, 2008; Berkes, Huebert, Fast, Manseau, & Diduck, 2005; Fast & Berkes, 1994; Manseau, Parlee, & Ayles, 2005). In particular, this has been implemented in the Canadian North where a diversity of industries and government agencies are now attempting to incorporate Inuit knowledge into decision making (Manseau et al., 2005; Peters, 2003). With regards to safety issues, Inuit knowledge may provide a wealth of local level expertise, provide historical context to concerns and responses, and present measures for community adaptation (Riedlinger & Berkes, 2001).

Nevertheless, the documentation and use of Indigenous knowledge within a cross-cultural environment has been increasingly criticized as overwhelmingly failing to produce the predicted benefits for local communities (Nadasdy, 2003, Usher, 2000). As one Aboriginal leader exclaimed, “co-management can too easily become co-optation...we cooperate and they manage” (cited in Tyrell, 2007, p.582). All too frequently, researchers for management boards, industry, and academia have allowed the further exploitation and marginalization of Indigenous peoples and their knowledge (Smith, 2006). This has occurred, in part, because knowledge documentation and use has been driven by an outside motivation, produced locally irrelevant or problematic outcomes, attempted to reduce knowledge systems to a quantifiable data set, and neglected to address unequal power relationships (Nadasdy, 2003; Stevenson, 1996). Instead, a mutual form of dialogue to bridge cultural differences must be developed, power sharing should be ensured, and Indigenous knowledge must be accepted as equal to science in academia and the field of resource management (O’Flaherty, Davidson-Hunt, & Manseau, 2008; Sellenave, 1994).

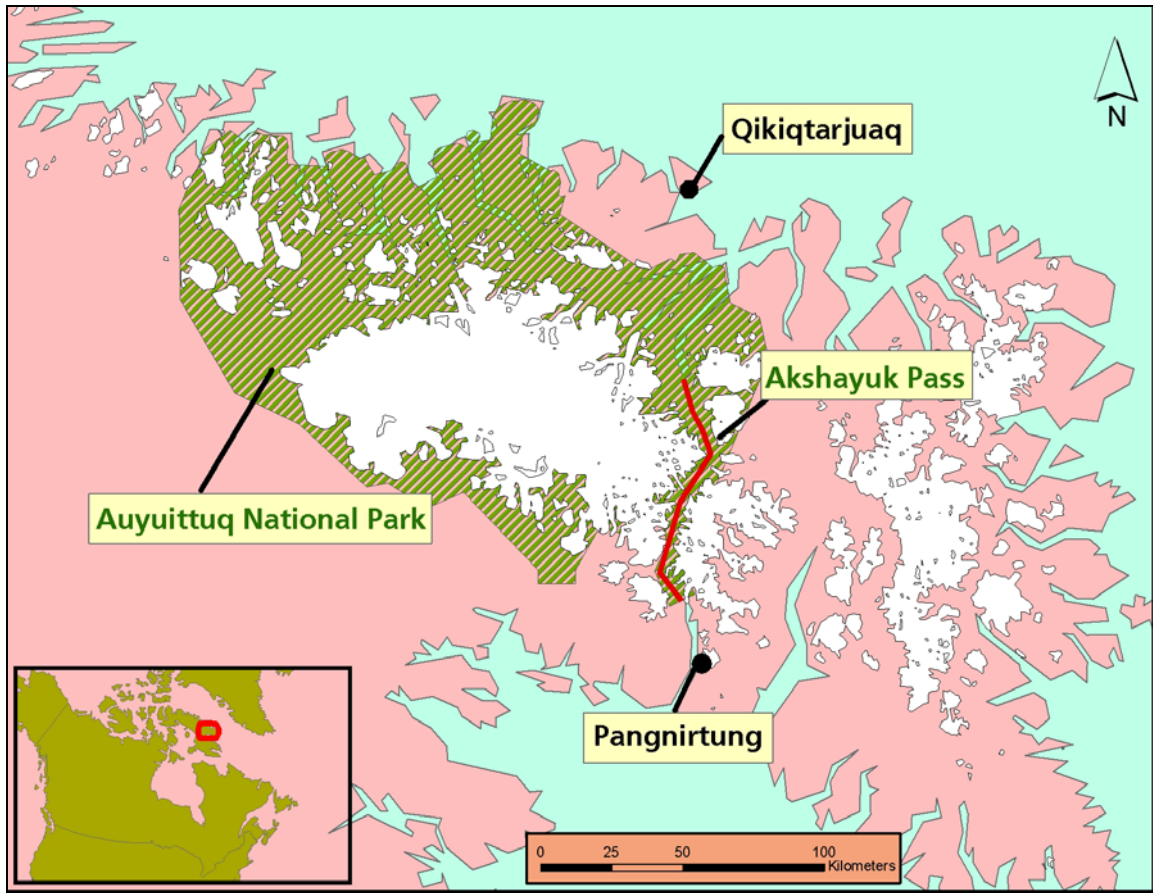
The debate continues as to whether collaborative or cooperative management arrangements may succeed in addressing power imbalances and contradictions between scientific and Indigenous perspectives. Nevertheless, these formal agreements often between governments and Indigenous communities, aim to promote equitable relations, conflict resolution, and sustainable resource management (Borrini-Feyerabend, 1996). Such institutional integration must be approached from two directions. Through the ‘top-down approach’, governments need to relinquish power by creating regulations that open up space and ensure Indigenous peoples and communities get a voice and real decision making power. Through the ‘bottom-up approach’, capacity needs to be built at the community level to ensure that Indigenous communities are able to exercise their rights and responsibilities (Ellis, 2005). Collaborative resource management retains the ambition of promoting Aboriginal narrative in natural resource management and has proved to be influential in various communities across Canada (O’Flaherty et al., 2008; Weitzner & Manseau, 2001). In fact, many collaborative processes that incorporate traditional knowledge in management and research are currently being worked out in the field to the benefit of science, local ecosystems, and Aboriginal communities (eg. Davidson-Hunt & O’Flaherty, 2007; Devin & Doberstein, 2004; Manseau et al., 2005; McDonald et al., 1997; Sable, Howell, Wilson, & Penashue, 2006). In Nunavut, for example, the IIBA (1999) provides guidance over how three Nunavut National Parks should be co-operatively managed, which is primarily conducted with the creation of Joint Park Management Committees (JPMC). Committees exist for each of these National Parks, including Auyuittuq, and are composed of six representatives, half of whom are appointed by the Qikiqtani Inuit Association and the other appointed by the

federal Minister of the Environment. The JPMC has the mandate to approve research in the area and influence decision-making on all aspects of park management from park planning and management to the promotion of local economic opportunities to visitor use and employee training. The basis for decision-making in this committee is the use of both western science and Inuit knowledge while working in both Inuktitut and English (Parks Canada and Qikiqtani Inuit Association, 1999).

The empowerment of Inuit communities to manage the multi-faceted change they are experiencing is central to their adaptation ability in the future (Irniq et al., 2006). Ensuring that Inuit knowledge is a major influence in northern institutions, policies, and practices will allow for the Inuit to recognize their experts, have pride in their way of life, guarantee their rights, recognize their environmental management systems, and ensure their survival for the future.

### ***2.3 A Brief History and Description of Qikiqtarjuaq***

Qikiqtarjuaq which means “big island” and formally called Broughton Island, is a community of just under 500 people, 98 percent of whom are Inuit, making Inuktitut the primary language (Statistic Canada, 2006). The community is located at 67°33'29"N, 064°01'29"W on a small island off the east coast of Baffin Island in the Davis Strait (see Figure 2).



**Figure 2: Location of study: in and around Qikiqtarjuaq, Nunavut**

Qikiqtarjuaq receives an annual precipitation of 272 cm of snow and 3.5 cm of rain. Temperatures are from  $-20^{\circ}\text{C}$  to  $-40^{\circ}\text{C}$  in the coldest months between December and March and around  $10^{\circ}\text{C}$  in the summer months of July and August (Qikiqtani School Operations, 2008). The area is home to polar bears, walrus, ringed and harp seals, right whales, belugas, narwhal, killer whales, and caribou. Arctic Char is also found in rivers and a variety of birds are found throughout the region. The landscape in this region is characterized by steep granite mountains, some rising to 2700m, deep fjords, and glaciers. In the summertime, this mountainous landscape is surrounded by open sea water, ice floes, and icebergs. However, for around eight months of the year, this landscape is characterized by snow-covered land and sea ice. The frozen ocean provides

a relatively smooth surface where local people create a network of routes extending up and down the coast line and in land through frozen fiords, rivers, and lakes.

The Inuit that currently reside in Qikiqtarjuaq come from different traditional camps and areas. These include the Akunnirmiut who inhabited the traditional settlement of Kivitoo and northwards, the Pallamiut who inhabited the Padloping Island area, and the Uqqurmiut group from Cumberland Sound which were divided into four sub-groups: Taliqpingmiut, Qinnuarumiut, Kinngarmiut, Saumiammiut and now also inhabit the community of Pangnirtung (spelling of group names differ depending on the author; Bennett & Rowley, 2004; Boas, 1964). In general, Inuit followed seasonal cycles of distribution and organized their camps around family lines. Spring and summer would be spent in dispersed smaller camps whereas larger groups of people would come together to pass the winter months. However, Boas (1964) described the Akunnirmiut and Pallamiut as more migratory than the Uqqurmiut, spending winters in a number of locations. All groups harvested caribou, polar bears, seals, whales, ducks and their eggs, and fish. However, by Boas' time, all areas were influenced by the commercial whaling industry (Boas, 1964).

Contact with non-Inuit may have occurred as early as the 1600s, but increased significantly during the 19<sup>th</sup> century. At this time, European whalers were attracted to the area and built whaling stations, including the station at Kivitoo, 64 km north of Qikiqtarjuaq. The flourishing whaling industry encouraged Inuit participation in the market economy. Many local Inuit moved close to the stations and became employees of whaling boats (Stevenson, 1997; Stuckenberger, 2005). By the end of the 19<sup>th</sup> century, however, the whale population as well as profits to be made by this industry declined.

Whaling stations were eventually abandoned, including the one at Kivitoo in 1925 (Stevenson, 1997; Stuckenberg, 2005). The local economy transitioned again into one oriented towards the fur trade. Trading enterprises, such as the Hudson's Bay Company gradually emerged and established posts across the region. The turn of the century also brought Christianity to the Inuit of southern Baffin Island through Anglican missionaries (Stuckenberg, 2005). In 1939, the Supreme Court of Canada ruled that Inuit were under the responsibility of the federal government (Kulchyski, 1994). The assertion of this jurisdiction coincided with the decline of the fur trade in the 1940s as well as the growing presence of resource exploration, missionaries, and the military in the north. The Canadian government was forced to address the reports of illnesses and deteriorating conditions in Inuit camps and increase their involvement in the north (Stuckenberg, 2005). The Canadian government wanted to avoid creating the dependency that they associated with the reserve system in the South. Instead, the government hoped to provide services and to integrate Inuit within Canadian society, while promoting Inuit self-sufficiency. Although perhaps well-intentioned, this goal led to contradictory practices that did not align with northern realities. One example was the process of bringing Inuit into settlements in the 1950s and 60s that served southern accessibility rather than Inuit areas of use (Tester & Kulchyski, 1994).

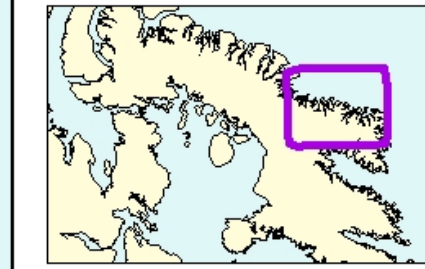
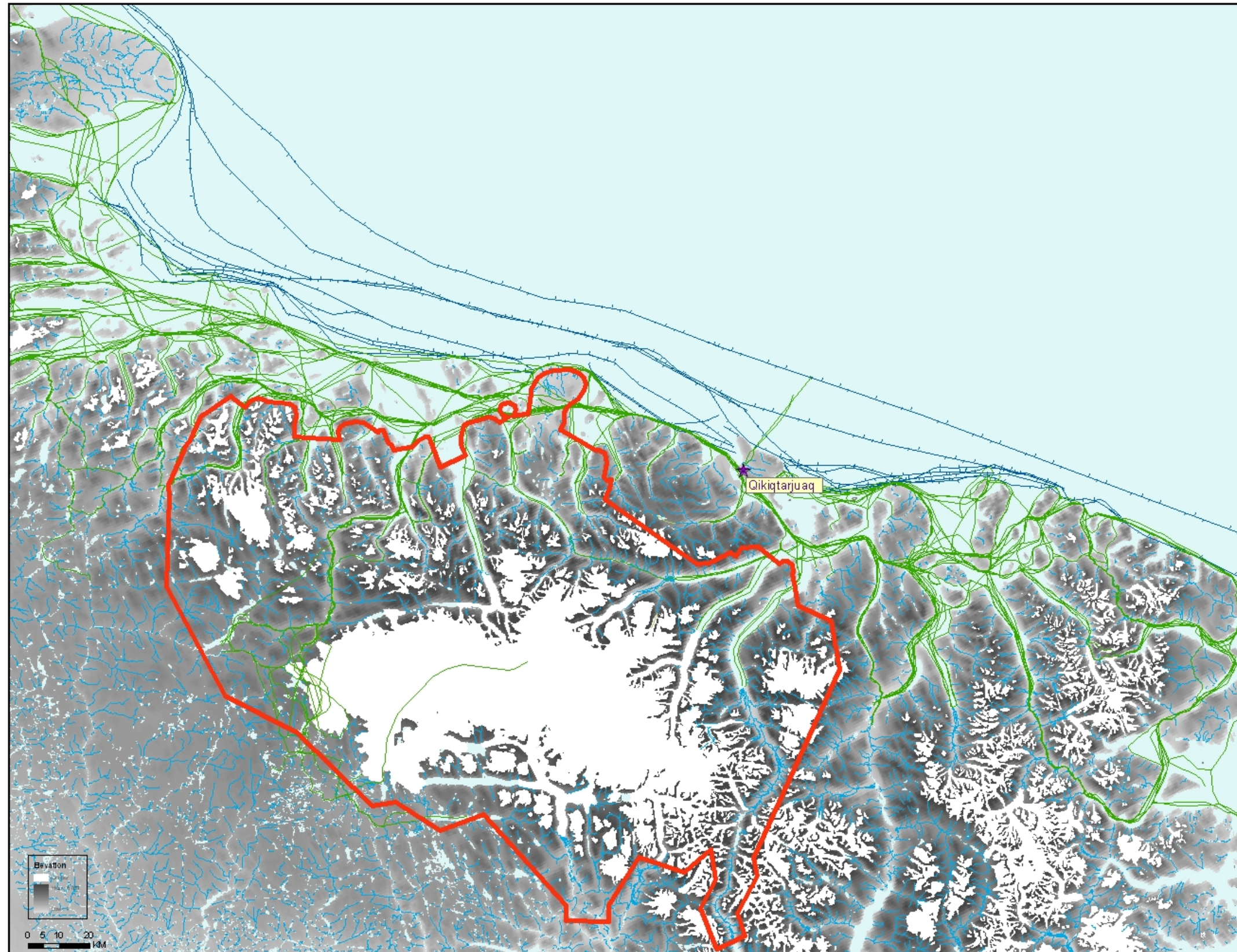
In the traditional Inuit camping areas of Kivitoo, which lies 64km north of Qikiqtarjuaq, and Padloping Island 96km to the south of Qikiqtarjuaq, more permanent settlements began developing. Padloping Island had served as an US Coast Guard weather station during World War II, while Kivitoo had been first a whaling station and fur trading post and later a DEW Line site. From 1955-1957, a DEW Line site and a



airstrip were built on Broughton Island. This process brought Inuit to the region from Pangnirtung, Kivitoo and Padloping Island, for the purpose of employment (Stuckenberg, 2005). In 1958, a federal administration office was established in the settlement. A Hudson's Bay Company store, a school, and an Anglican Mission followed in the 1960s. This development brought many Inuit to the settlement of Broughton Island, however, the community only became permanent when the government enforced the relocation of the remaining residents from Kivitoo (1962) and Padloping Island (1968) to the new community (Stuckenberg, 2005). The relocation was seen as a way for the Department of Indian and Northern Affairs to solve their problem of delivering medical and other services to the communities. However, for the elders of Qikiqtarjuaq who experienced it, the relocation continues to be understood as a time of distress. The development of a community on Broughton Island brought Inuit from various areas to live together, and forced a major transition in livelihood for all (Stuckenberg, 2005). In 1979, Qikiqtarjuaq obtained hamlet status. The community today has flights to and from Iqaluit five days a week, a Hamlet Council and community hall, a local Hunters and Trappers Association, kindergarten to Grade 12 school, community daycare, nursing station, police station, hotel, arena, pool, coffee shop, two churches, and two stores.

The anti-sealing campaign of the late 20<sup>th</sup> century and the resulting crash in fur prices have had a devastating impact on Inuit communities, including Qikiqtarjuaq (Wenzel, 1991). However, hunting of seal, walrus, whale, polar bear, and caribou, and fishing continue to play an important role in the economy and culture of the community (Stuckenberg, 2005). Because of the seasonal patterns related to these activities, the community alternates between periods where much of the people are dispersed to hunting

camps and periods of concentration in the settlement. In many cases, the location of hunting camps and who one travels with continues to be dictated by kinship lines, reflecting the distribution that existed prior to life in settlements. Although hunting provides people with food and enjoyment, it also requires a steady cash flow to support the equipment, such as snowmobiles, that allow hunters to continue hunting from a settlement. Many people who live in Qikiqtarjuaq today have various types of wage employment. Depending on the person and the job, this can be restricting in that time on the land must be reduced to inflexible weekends and holidays (Stuckenberger, 2005). Nevertheless, hunting and fishing activities continue to determine the flow of life in Qikiqtarjuaq, and play an integral role in the economy and the culture of the community. Consequently, the sea ice around Qikiqtarjuaq remains an important travel and hunting platform for the community.



Legend

- Auyuittuq National Park
- floe edge variation
- travel route

Note: The information provided on this map is not intended for navigational purposes nor for showing legal park boundaries.

Map created for use in a research related to Inuit Knowledge Project  
 Map cover: ETO sheet 1G1, 1G2, 1G3, 1G4, 1G5, 1G6, 1G7, 1G8, 1G9, 1G10, 1G11, 1G12, 1G13, 1G14, 1G15, 1G16, 1G17, 1G18, 1G19, 1G20  
 Map projection: North Polar Stereographic  
 Scale: 1:1100000

This map is based on the knowledge shared by local elders and hunters: Billy Arnaq, Gary Arnaq, Joseph Audlitch, Louis Audlitch, Markos Audlitch, Steve Audlitch, Louis Eshook, Louis Eshook, Josh Eshook, Inukua Eshook, Julie Eshook, Allen Eshook, David Eshook, Louis Eshook, Joe Eshook, Cassie Eshook, Joseph Eshook, Leah Eshook, Mike Eshook, Tommie Eshook, Gossie Eshook, John Eshook, Leah Eshook, Lou Eshook, Lou Eshook, Qasoo Eshook, Anonymous participants, and representatives from Eshook ETO. The map was created by Erin Johnson, Denise Eshook, and Eshook ETO.



Figure 3: Travel Routes around Qikiqtarjuaq, Nunavut



As indicated by Figure 3, hunters travel everywhere available; up all fiords and river valleys, up and down the coast from the community, and out to the floe edge. The harvesting area of Qikiqtarjuarmiut is 82,200 km<sup>2</sup> (Riewe, 1991). Through extensive travel on, and use of, sea ice, elders and hunters in Qikiqtarjuaq maintain detailed knowledge of the processes and conditions of the arctic environment.

#### ***2.4 A Brief Description of Auyuittuq National Park***

In 1976, Auyuittuq National Park Reserve (Auyuittuq), meaning the “land that never melts”, was established as a representative of the Northern Davis Strait Natural Region (Parks Canada, Nunavut Field Unit, 2008). The area was later established as a National Park in 2001. The park covers an area of 13 089 km<sup>2</sup> and is characterized by mountains, glaciers, valleys, fiords, and the Penny Ice Cap, which covers almost a third of the park (Canada National Parks Act, 2000). Although the concept of a park was a foreign one to local Inuit, land use rights within the area, such as the right to harvest traditional resources, were constitutionally entrenched with the Nunavut Land Claim Agreement (INAC, 1993). Accordingly, the Inuit of Qikiqtarjuaq and Pangnirtung continue to use the area for hunting and fishing, as a travel route, and to promote local tourism activities. The park also provides some employment opportunities to the community of Qikiqtarjuaq. However, the majority of jobs are found in Pangnirtung, the community south of the park where its headquarters are located. Other economic benefits are derived from visitors staying in the community or in need of outfitting services to access the park (Lawson, 1987).

Auyuittuq National Park is the most known and visited park in Nunavut, with around 400 to 600 visitors a year (Parks Canada, Nunavut Field Unit, 2008). This

number continues to grow, primarily influenced by an increase in visitors that arrive by cruise ship and visit the park for a single day, whereas non-cruise ship visitors primarily engage in multi-day trips to the park (Parks Canada, Nunavut Field Unit, 2008). The popularity of Auyuittuq is primarily due to the fact that the park is older than others in Nunavut, is cheaper to access, and has a defined hiking route and infrastructure along the 97 km Akshayuk Pass (Figure 2), the area of the park where the great majority of visitors visit. Auyuittuq National Park is accessed either from the north, from the community of Qikiqtarjuaq, or more frequently, from the southern community of Pangniting. Visitors primarily visit the park either during the months of April and May for skiing or snowshoeing, or in July and August for climbing and hiking (Parks Canada, Nunavut Field Unit, 2008). The arctic can be a harsh climate and, for southerners, unlike any past experience. However, the sense of risk and challenge associated with travelling in this region is also what attracts tourists (McCool, Lachapelle, Gosselin, Gertsch, & Sahanatien, 2007; Stewart, Draper, & Johnston, 2005). This understanding of the environment is in contrast to local Inuit, who are at home in this landscape and whose identity involves complex relationships to the local landscape and animals (Stuckenberger, 2005).

Potential hazards involved with tourist activities in the park include climate, avalanches, river crossings, sea ice travel, and polar bear encounters (Parks Canada, Nunavut Field Unit, 2008). However, the major local concern regarding tourist safety is the point of properly educating visitors to Auyuittuq National Park, which local people believe can be solved with increased involvement of their knowledge (Parks Canada, Nunavut Field Unit, 2005). In the context of safety, any institutional safety initiatives

that do not incorporate local, experiential knowledge will likely be unable to develop a complete understanding of the environment, thereby failing to address the full scope of potential hazards (Rooke & Clark, 2005). Since tourism is expected to continue to grow in the arctic, the issue of tourist safety is likely to continue to be a relevant issue in Inuit communities (Mason, 1997).

## ***2.5 Chapter Summary***

This chapter reviewed the concepts of Inuit knowledge and safety culture. With regards to Inuit safety culture, there has been different research projects focused on specific elements of how Inuit understand and respond to safety issues. Research has also concentrated on how social and environmental changes are challenging Inuit safety culture, specifically in recent years. This chapter also provided an overview of the criticisms, challenges, and successes involved in using Indigenous knowledge within the context of collaborative resource management. Finally a brief introduction of the study area was provided. This included an historical introduction of the community of Qikiqtarjuaq and Auyuittuq National Park. In the next chapter, the methodology and methods used in this research are explained. In the proceeding chapters, the results of this research are presented.



## **Chapter III: Research Methodology and Methods**

### ***3.1 Research Methodology and Context***

A participatory, micro-ethnographic approach was used for this research. Ethnography is a social science research methodology that focuses on capturing and making sense of people's worlds by participating in this setting (Brewer, 2000; Hammersley & Atkinson 2005). Compared to macro-ethnography that focuses on representations of an entire culture, micro-ethnography focuses on a specific phenomenon which, in the case of this research, is the safety culture of Qikiqtarjuaq (Berg, 2004).

However, as indicated in the previous chapter, any research conducted within Indigenous communities must address to some degree the history of colonialism in those communities (Smith, 2006). Colonialism is not only restricted to government policies but is also executed through research methodologies and methods. Smith (2006) argues that "scientific research is implicated in the worst excesses of colonialism" (p.1). Because of this, there is a push for contemporary research involving Indigenous peoples to empower

and benefit those communities. As Smith (2006) explains, there is a vision for “rewriting and righing our position in history. Indigenous peoples want to tell our own stories, write our own versions, in our own ways, for our own purposes” (p.28). Accordingly, Fals-Borda and Rahman (1991) describe participatory research as research that is deemed worthy by marginalized people in need of the leverage that can come with scientific support. For this to occur, research must be done through the collaboration of researchers and those that are the focus of the research (Fals-Borda & Rahman, 1991). The research presented in this thesis, because it is co-developed and conducted by ‘outsider’ researchers and agencies, has not achieved the standards set by Smith (2006) or Fals-Borda and Rahman (1991). Nevertheless, a participatory methodology was used to the degree that Inuit perspectives were incorporated in the design, course of action, and outcomes of this research (Smith, 2006).

This research was conducted within the context of a long term (four year) project by Parks Canada. In 2005, a community Working Group was established for Auyuittuq National Park as part of Parks Canada’s Inuit Knowledge Project, which aims to explore how to work with Inuit knowledge in the management of Nunavut's national parks (Parks Canada, Nunavut Field Unit, 2005). The Auyuittuq Working Group is composed of seven members from both Pangnirtung and Qikiqtarjuaq and includes representatives from the Elders’ society, the Hunters and Trappers Association (HTA), and community youth. This Working Group has been involved throughout the entire process of this research, directing the research in a way that reflects and provides benefit to the local community. In this way, community members were not the ‘objects’ of the research but instead, ‘co-researchers’ (Kral & Idlout, 2006). Initially, the Working Group identified a



number of research priorities, including the changing environment, the dangers associated with polar bears, the affect of pollution and sewage on the ecosystems and animals, and the loss of adequate land-use skills and knowledge of the younger generations. It is from these discussions that the topic for this research was developed.

Brown et al. (2006) explain that participatory research projects must rely on community definitions, desires, and ethical guidelines (Brown, Peers, & members of the Kainai Nation, 2006). This research was approved by the Nunavut Research Institute (Appendix 1) and by the Joint-Faculty Research Ethics Board at the University of Manitoba (Appendix 2), which is organized and operated according to the Tri-Council Policy Statement. However, the Working Group was also central in guiding the research so as to reflect community values. For example, in one of the early Auyuittuq Working Group meetings, the proper way to approach potential interviewees was discussed. The Working Group was also responsible for creating a list of community experts to be interviewed, organizing an on-the-ice workshop, conducting data verification, and helping decide on research outcomes. The aim of conducting participatory research was facilitated by being embedded within a much larger and longer-term project with established community relationships such as the Working Group.

### ***3.2 Positionality and Limitations of Research***

In recognizing the critical role that researchers play in the production of knowledge, research must be located within the context of the person collecting, analyzing, and presenting the research data (Absolon & Willett, 2005; Hammersley & Atkinson, 2005). This research was conducted as a part of a requirement for a Master of Natural Resource Management degree. Within the context of a master's level research

project, the field component of this research consisted of three trips to Qikiqtarjuaq over the span of 14 months for a total of four months in the field. However, because this research was part of a long-term Parks Canada project, members involved with the overriding project had previously established a relationship with the community. In addition, a structure is in place to receive and potentially implement research recommendations and outcomes. Therefore, the implications of the research will continue to be explored beyond the duration of this project.

Although working within a Parks Canada framework creates advantages, it also contributes to certain research limitations. One of the challenges of this research is that its purpose is, in a way, a contradiction in that it aims to incorporate Inuit knowledge into National Park management that is based on another cultural knowledge and worldview. Having Inuit knowledge inform land management design and decision-making is a form of self-determination and decolonization. However, the land that is being considered, although part of the traditional territories of the Inuit, is an area that is under the legislated control of the Canadian state through the National Park system.

Working within a Parks Canada framework may have influenced the type of information provided by research participants. In some cases, although people had no trouble sharing information about which areas were hazardous, participants had a hard time understanding why a researcher associated with Parks Canada would want to know about how the community managed safety on a social level. Some people felt that safety was an issue that should be dealt with by local people, as has traditionally been the case. For example, when introducing the topic of my research in a conversation with a local

hunter and HTA representative, he abruptly responded; “you want to teach the Inuit here how to be safe?” (HTA representative, original in Inuktitut). Of course, my intention was to learn from him about how to be safe, but his response may indicate a sense that the local people have the issue of safety under their control and outside involvement is not really welcome. This response may also speak to the history of interactions between Inuit and outsiders who often assumed that Inuit were essentially ignorant, in need of instruction and regulation.

However, the primary influential factors of my position as a researcher are my own personal attributes. To begin with, the fact that I am a woman may have been a barrier to the type of information shared. Traditionally, Inuit divided tasks and knowledge along gender lines and when families went travelling, the responsibility of navigation, reading the environment, and ensuring physical safety primarily fell to the man (Collignon, 2006). Accordingly, the list of experts the Working Group wanted me to interview was overwhelmingly made up of men. This, of course, created data that was dominated with men’s knowledge and perspectives of safety issues but also may have inhibited the relationships developed between the researcher, myself, and the participants.

Another point is that I have been raised and educated within the ‘dominant’ or ‘colonizing’ culture of Canada, which again has implications in a cross-cultural setting. I do not speak Inuktitut and my past educational upbringing is rooted in a Eurocentric worldview which has the potential to negatively taint my relationships with members of the Qikiqtarjuaq and the research in general (LaRocque, 1999). My cultural background also placed limitations on my own understanding of the community dynamics, knowledge, and beliefs that exist in Qikiqtarjuaq. With regards to the focus of this

research, I have been raised in a society with its own safety culture that likely greatly differs from many societies. This embedded understanding of ‘the way things are’ is a challenge for any outsider who aims to recognize another way of knowing. Nevertheless, a continual personal commitment to understanding my own cultural heritage and working to critically analyze its influence on my work with Indigenous peoples was a first step in gaining control over my own position (Eigenbrod, 1999). In the context of this research, I aimed to engage myself within the local Inuit context as much as possible through preparation with literature prior to field research, with three stays in the community, and through the use of a participatory research methodology that was possible given the broader context of the Inuit Knowledge Project.

However, from the Qikiqtarjuarmiut perspective I was inevitably deemed to be a researcher from the ‘dominant’ culture of Canada. There was a certain level of scepticism regarding the perspectives, interests, and values I held as a ‘southern’ researcher. This likely is a result of past experiences with outside researchers, given that research has historically been a tool for colonialism in Indigenous communities (Smith, 2006). People’s previous experience also informed their assumptions about the focus of my research. For example, I sometimes got the impression that people assumed that I was working on the topic of environmental change, since there had recently been a group of southern ‘environmental’ researchers in the community who had this focus. During one group meeting where this topic had been raised, I asked the group about the social effect of these environmental changes. An elder responded that he was sick of researchers coming north saying that Inuit would no longer be able to survive in the face of environmental change (Levi Nutaralaaq, original in Inuktitut). As an outside

researcher, my relationship with the community was always placed within the context of past community interactions with researchers.

### ***3.3 Research Methods***

Corresponding with an ethnographic approach, research methods including participant observation, semi-structured interviews, focus groups, and document review was used in this research (Hammersley & Atkinson, 2005).

#### **3.3.1 Participant Observation**

Participant observation was used to collect data while in Qikiqtarjuaq, on the land, as well as at relevant Parks Canada meetings. Data collection through participant observation is particularly valuable given the cross-cultural context of this research and the potential limitations of formal interviews within an Inuit society (Bernard, 1988). That said, participant observation is highly contextualized within the researcher's own interpretation and therefore also has limitations of understanding in a cross-cultural context (Piquemal, 2001). Nevertheless, this method was particularly valuable in that it was integral to my understanding of the local context and allowed me to 'get a feel for the place'. Data collected through this method was done through the use of field notes (Bernard, 1988).

#### **3.3.2 Semi-Structured Interviews**

Semi-structured interviews were used to gather specific data regarding local safety knowledge as well as perspectives regarding Parks Canada safety measures. These interviews were based on an open-ended interview guide so that interesting leads were followed through probing and interview flexibility (Bernard, 1988). Examples of

question themes include: identifying past safety incidents and how such incidents could have been avoided, identifying risks involved in land-use, identifying environmental elements used to assess risk, and interviewees' understandings of both local and Parks Canada safety measures and how these might be improved.

As mentioned, the Working Group created a list of community experts whom they wished to be interviewed. This list included elders as well as frequent land users such as hunters and tourist outfitters. In addition, local Parks Canada employees were interviewed. Participants, apart from those who were parks employees, were provided with an honorarium of \$30/hr for their involvement in the research. This honorarium is meant to show respect for the interviewees' time and knowledge. Prior to the interview, participants reviewed and signed a bilingual consent form and indicated whether or not they were willing to be audio recorded, what language they would like to be interviewed in, and whether they would like to be recognized by name or remain anonymous in the project outcomes (Appendix 3). Interviews were conducted by myself and, when required, an interpreter. Throughout the research process, I worked with four different interpreters and conducted a total of 25 one-on-one interviews (Appendix 4). Interpreters ranged from people who had years of experience doing this type of work to those who had only a few previous experiences. Interpreters were selected based on their ability, availability, and suggestions from the Working Group and other research participants. To help ensure that interpreters were comfortable and had a good understanding of the research objectives, I met with each of them prior to the interviews to explain the research project, review sample questions, and allow interpreters to provide feedback on how questions could be improved. Following interviews, I also attempted to get

feedback from the interpreters regarding their perceptions of the process and how they felt it could be improved for the following interview. Primarily, this involved adding, removing, and rewording questions to improve participant understanding and contribution.

### **3.3.3 Working Group Meetings, Focus Groups, and Workshops**

A focus group meeting where a small group of participants are brought together is another method used to extract different types of data that represents common understandings generated through group discussion (Bernard, 1988). In this research, this method was employed in a number of working group meetings, a focus group with community participants, and during the Sea Ice Workshop organized by Parks Canada Inuit Knowledge Project.

Working Group meetings were held numerous times throughout the process of this research. Meetings held within the community ranged from two to five days, whereas numerous conference calls of only a couple hours were also used throughout the research to keep in contact despite being across the country. All meetings allowed everyone to get updated and provide feedback on the research process, discuss preliminary results and emerging issues, and develop and verify research outcomes. Working Group meetings followed an agenda which allowed input by all participants and were facilitated by a Parks Canada employee associated with the Inuit Knowledge Project.

A focus group was held in the community for the primary purpose of bringing together hunters and representatives of the HTA to discuss safety issues. This meeting was facilitated by me with the help of an interpreter. Discussions were focused on

specific themes regarding safety issues in and around Qikiqtarjuaq, the role of the HTA in these issues, community responses to safety issues, and how visitor safety can be improved.

Finally, this type of method was employed during the Sea Ice Workshop which was organized as part of the Inuit Knowledge Project. This workshop was developed in the hope of creating a context where information about sea ice and safety issues could be exchanged, observed, experienced, and documented within the environment they exist. Participants included Working Group members, community youth, Parks Canada employees, and researchers. The workshop included one day in the community for orientation, four days on the ice and land for learning, and a final day after for debriefing. Specific topics of focus during this workshop included how to identify, read, and understand ice conditions, weather, and wildlife, identify hazards, and ensure safety. The workshop also included discussion on how this information could be increasingly communicated to community youth, scientists, tourists, and park managers.

### **3.3.4 Document Review**

Finally, a review of Parks Canada documents was employed to further understand local safety issues as well as current safety management policies in Auyuittuq. Since these documents were a translation of local events and procedures through the Parks Canada perspective, this method allowed for another interpretation of both safety issues in the region, methods for risk assessment, and the process of safety measure development. These documents were critically analyzed by questioning their authors, their intended audience, and their intended purpose (Hammersley & Atkinson, 2005).



This method allowed for a ‘Parks Canada’ organizational perspective on what is occurring with regards to safety issues and measures at the local level.

### **3.3.5 Objective 1: “Document Inuit Safety Culture”**

This objective dealt specifically with the following questions:

- How do Qikiqtarjuarmiut understand the concept of ‘safety’?
- What are the major safety issues with regards to travel on the ice and land?
- How do people stay safe on the ice and land?
- How are decisions regarding safe land use made within the community context?
- What tools are being used to come to decisions and disseminate information?

Achieving this objective primarily relied on participant observation, interviews, and the ‘focus group’ method. It is hoped that by using these methods with a variety of participants, the data collected has provided an accurate understanding of how Inuit in Qikiqtarjuaq understand and respond to safety issues within their traditional territories.

### **3.3.6 Objective 2: “Examine the social and environmental changes that may be challenging or facilitating Inuit safety adaptations”**

This objective dealt specifically with the following questions:

- What social and environmental changes are making land-use more dangerous?
- How are these changes influencing land use safety?
- How are Qikiqtarjuarmiut dealing with these changes?

Achieving this objective primarily relied on participant observation, interviews, and the ‘focus group’ method. This objective took ‘the pulse’ of safety issues and concerns in Qikiqtarjuaq at this point in time from the perspective of local Inuit. In particular, this objective represented the emerging safety issues in the local context.

### **3.3.7 Objective 3: “Look at ways that Inuit knowledge and safety culture can enhance the current park safety management framework”**

This objective dealt specifically with the following questions:

- What are the differences in perspectives regarding safety issues between local people and the managers for Auyuittuq National Park?
- How do people believe the management framework with regards to safety can be improved?

Achieving this objective primarily relied on participant observation, interviews, the ‘focus group’ method, and document review. By having multiple data sources, the outcomes of this objective may inform recommendations for management that have local relevance and support.

### ***3.4 Research Timeline***

Field research began in May 2007. During this trip of two and a half months, approximately 18 one-on-one interviews, Working Group meetings, a focus group, and the on-the-ice workshop were conducted. A second trip was made in November/December 2007 to participate in a Working Group meeting and conduct more one-on-one interviews. In addition, during this visit, presentations of the project and preliminary results were done at the local school in grade 7, 8, 11, and 12 classes. A final trip was conducted in July 2008. This trip was focused on research verification through meetings with the Working Group. In addition, a larger meeting involving the Working Group, the Auyuittuq Joint-Parks Management Team, and the Auyuittuq Park Planning Team was held. During this meeting, greater collaboration amongst the groups was discussed and the findings of this research were presented.

### ***3.5 Analysis of Data***

The audio files from interviews, Working Group meetings, focus groups, and the Sea Ice Workshop were transcribed. I transcribed any audio files that included dialogue or interpretation of dialogue in English. However, in the cases where audio files included discussions only in Inuktitut, the translation and transcription were done by employees of the Inuit Knowledge Project. In addition, my field notes, primarily representing participant observation which provided important context, were typed. Each of these documents was analyzed and organized by coding the text according to key themes. Thematic codes reflected the questions asked during the research activity as well as those that emerged throughout the research and analysis process. A qualitative data analysis software package, NVivo 7, was used to facilitate the data organization process as it allowed for similar information to be easily compiled and retrieved (Welsh, 2002).

The maps developed during interviews and originally drawn on NTS base maps were later manually digitized by myself using ArcMap. Once all information was digitized, each participant's maps were merged to reflect a community understanding of the surrounding environment.

### ***3.6 Verification of Data***

Throughout the research process, my understandings of the data were continually being presented to and verified by participants. While interviewing, for example, I would frequently present my interpretations of the conversation with the hopes of eliciting correction, verification, and elaboration. However, although verification of specific information was done throughout the data collection process, the verification of the broader research results was guided by the Working Group.

Throughout the research, Working Group meetings were on-going and focused on the progress of the research and the development of results. Therefore, results were continually being presented, discussed, verified, and refocused throughout the research process. Once final draft research products had been developed, in the form of audiocast scripts, a map, and a terminology poster, the Working Group met to review all the products. In the case of the map and the terminology poster, for instance, data was verified and the final presentation format was decided. The audiocasts were verified in the form of a written script. Each quote and corresponding analysis was reviewed word-by-word by the Working Group to ensure that the proper terminology and knowledge was being represented. At times, for example, the Working Group changed the wording or the ideas of a specific area of analysis claiming that ‘this is not the way Inuit think’. This process allowed for a detailed verification of not only the raw data but also my analysis and produced results that more truly reflect Qikiqtarjuarmiut understandings.

### ***3.7 Research Outcomes and Presentation***

When designing research outcomes certain issues must be considered, including, who will benefit from the research? And, how will the results be made available to the community as well as other audiences? (Brown et al., 2006) Three major outcomes are emerging from this research, each with their own beneficiaries: a University of Manitoba Master’s thesis, journal publications with corresponding presentations at conferences, and a community-developed research outcome.

As an academic contribution, it is anticipated that the results of this research will be shared through a thesis, conference presentations, and publications in academic journals. Specifically, it provides an understanding of safety culture in a northern

community. In addition, this research adds another perspective on how Inuit knowledge may enhance state-controlled natural resource management.

A primary goal of this research was to provide outcomes that would be beneficial to the community of Qikiqtarjuaq. Locally, the proposed research has the potential to help improve the level of community involvement in park management as well as to improve safety measures in Auyuittuq National Park. In addition, research outcomes have been developed to deliver the research findings back to the community. These include a poster showing Inuktitut terminology for sea ice processes and hazards, a map (see Figure 5) depicting travel routes and hazards around Qikiqtarjuaq, and four audio audiocasts that describe, using the original words and voices of participants, Inuit knowledge regarding safety and local perspectives on safety issues concerning Parks Canada. Although no one medium is able to completely capture all elements of Inuit knowledge (Bonny & Berkes, 2008), these research outcomes were supported by the Working Group as a means of documenting local practices, knowledge, and language that have been challenged by social changes and environmental changes but remain crucial to safety. These outcomes may also serve as documented Inuit knowledge resources for community representatives engaged in co-management process, such as those involved in the Joint Parks Management Committee or Auyuittuq Park Planning Team (Bonny & Berkes, 2008). Research outcomes for the community are produced in both English and an Inuktitut.

Apart from the research products created for the community, the process of conducting this research created perhaps a more valued outcome. Since 2005, the Working Group has been collaborating with Parks employees and researchers. The

process of working together allowed for the development of relationships, ideas, pride in local knowledge, and a vision for the future.

*When I first met everyone, all the Parks people, I felt like I was just on the side, that the Parks people were so important and powerful. As we have been working on the Inuit Knowledge Project, I've started to think that this is so important. The more work we've done, the more I feel like I have the same importance as the Parks people. And now we're making resources for the future. It gives me pride to be part of this committee. To do a presentation makes you feel like you're on the same level as the others.*  
(Leah Kuniliusie, original in Inuktitut)

As Leah Kuniliusie, a Working Group member, describes, the benefits of the research include not only the research products but all that comes with the development of a process of working together.

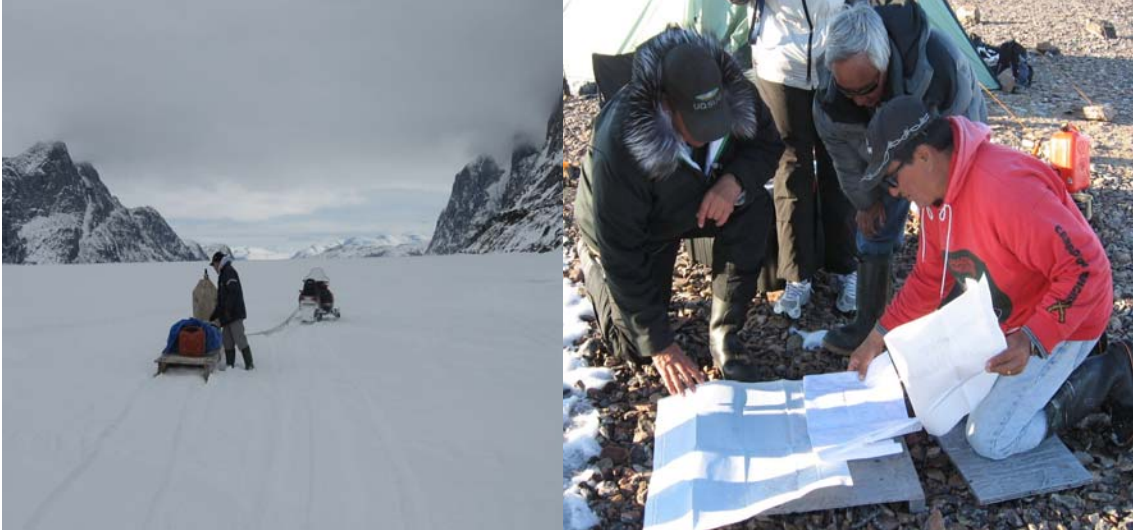
By using the “spoken word” in audio or text format, these outcomes retain as much as possible the structure, voice, and ‘rhythm’ of Inuit culture (Dauenchauer & Dauenchauer, 1999). Each participant in this research has their own experiences and relationship with the community and landscape and therefore has their own story to tell. The quotes used in all research outcomes will identify some of the complexity of perspectives within the community of Qikiqtarjuaq. However, although generalized statements are usually avoided within Inuit culture, summarizations of themes remain important for broader understandings of local phenomena (Fox 2002). It is hoped that the balance between the original words of local experts and the broader analysis provided a comprehensive understanding of the local perspectives of safety issues in and around Qikiqtarjuaq will be presented.

The Inuit Knowledge Project, which is nearing completion, has developed data management process that will allow future access to all research products. In particular, it is a priority to ensure that all research material remains accessible to the participating

communities in years to come. All research products along with the raw material such as photographs, audio files, and transcripts, will be archived with the Inuit Knowledge Online Database Project. This electronic database provides a description of available research material and products and is currently available on-line to the public at <http://inuitknowledge.lecol-ck.ca/home>. The Joint Park Management Committee of each respective park has the responsibility of granting access to any particular request.

### ***3.8 Chapter Summary***

This chapter reviewed the participatory, ethnographic approach that was taken in this research. Intrinsic in this approach is a reflexive view of one's own position as the researcher in the production of knowledge. This chapter also reviewed the methods used in this research: participant observation, semi-structured interviews, focus groups, and document review. How each of these methods corresponds with the specific objectives of this research was presented followed by an overview of the processes undertaken for data analysis, data verification, and the production of research outcomes. In the next chapter, the results that correspond with this research's first objective, to document Inuit safety culture, are provided. In the proceeding chapters, the results corresponding with the other two objectives are presented.



## **Chapter IV: Safety Culture in Qikiqtarjuaq, NU.**

Traditional knowledge can be understood as “a cumulative body of knowledge, practice, and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment” (Berkes, 2008, p.7). In this definition, traditional knowledge emphasizes that knowledge is a dynamic process consisting of four embedded and mutually-interrelated levels, specific environmental knowledge, management systems, social institutions, and worldview (Berkes, 2008). Similarly, Inuit knowledge is holistic, encompassing all areas of expertise, from psychology to geography, and is constantly evolving to best serve people and their environment (Krupnik & Jolly, 2002). Inuit knowledge of safety may be best described with the term Inuit safety culture which refers to the beliefs that guide the way Inuit understand and respond to safety issues (Reason, 1998).

The arctic is characterized by a range of potential safety hazards, including extreme cold and wind along with the varying ice and snow conditions. To ensure safety



in this environment, people must be able to deeply understand this ecosystem, how different elements influence others, and its changes from season to season (Briggs, 1991; Kappiannaq & Nutaraq, 2001). The first objective of this research was to examine the safety culture of Qikiqtarjuaq. In other words, what type of values, knowledge, organizations, and skills do the Inuit of Qikiqtarjuaq apply to understand and deal with safety issues? With regards to Inuit safety on the land and ice, much has been documented. Inuit navigate and adapt to their environment through detailed observation of snow, ice formation and movement, moon, stars, northern lights, clouds, currents, wind, temperature, topography, and animal behaviour (Aporta & Higgs 2005; Krupnik et al., 2004; MacDonald, 1998; McDonald et al., 1997). Various indicators are monitored by Inuit hunters to ensure their safety. For example, indicators used while travelling on the sea ice include knowing the strength of currents in certain areas, water depth, moon cycles, salinity, recent and current temperature, wind direction and strength, precipitation, solar radiation, shoreline topography, and past ice conditions (Kativik Regional Government, 2008; Laidler, 2007; Riewe 1991). There is also a depth of terminology to describe ice features and how they change through the seasons (Aporta, 2002; Laidler, 2007). Other research has focused on how Inuit travel in the environment (Freeman, 1976; Riewe, 1991), intricacies of Inuit clothing (Oakes, Wilkins, Riewe, Kelker, & Forest, 1995), the technology Inuit use (Riewe, 1991; Tremblay et al., in press), and recently, Inuit safety adaptations in the face of rapid environmental change (Berkes & Jolly, 2001; Ford et al., 2008; Fox, 2002). Within the broader focus of safety, there are accounts of how knowledge is and has been transmitted in Inuit societies through stories, instruction, and experience (Bonny, 2007; Briggs, 1991; Collignon, 2006). With regards

to rules-in-use, Oosten & Laugrand (2002) describe how peoples' actions in Inuit communities were traditionally regulated not only by human leaders, but also by animals and spirits. In addition to individual autonomy, Inuit traditionally felt responsible for others in their camp which is evidenced by food-sharing practices that continue today (Collings et al., 1998).

This research builds on those studies that focus primarily on specific skill sets or aspects of knowledge. However, the focus of this research remains the broader, multifaceted safety culture in Inuit communities. I attempted to portray this by describing the formal institutions in Qikiqtarjuaq that play a role in the safety of local people. In addition, I present a number of themes, neither of which fully captures Qikiqtarjarmiut safety culture. However, each provides a different glimpse into the way the concept is practiced and understood.

#### ***4.1 Formal Community Institutions***

Each individual's knowledge in Qikiqtarjuaq is closely intertwined with a social structure designed to help keep the public safe when travelling on the ice and land. In southern Canada, the state has a significant presence in how people are educated and regulated regarding public safety. This can be seen, for example, in the maintained and patrolled highways, hiking/bike/ski trails, and campsites in the areas that are most commonly used by the public. Of course the population size and number of institutions differ greatly between southern communities and those on Baffin Island. However, one of the questions in this research was whether the people of Qikiqtarjuaq identify any organizations as providing guidance or instituting regulations with regards to safe land-use.

Although there are some Canada-wide and Nunavut-wide safety regulations for, for example, firearm, snowmobile, or boat use, the interviews indicate that these governmental institutions have little presence at the local level. Indeed, although the territorial government provides financial support for local search and rescue efforts, interviewees usually attributed this support to the local Hamlet government. No specific initiative or regulation from either the government of Canada or Nunavut was identified by participants as influencing the way local people travel and stay safe on the land. Some Parks Canada regulations were mentioned in the interviews, but these primarily affect local outfitters and will be discussed further in Chapter 6.

Instead, some interviewees pointed to local community institutions, such as the Hamlet or the Nattivak Hunters and Trappers Association (HTA) as playing some role in local land-use safety. Other interviewees were ‘not sure’ which institutions, if any, influenced the local public’s safety on the land. It seems that although local community institutions may have a small role in helping the public travel safe, neither the Hamlet nor the HTA had recognized jurisdiction over land-use safety. Instead, it appears that guidance and guidelines are primarily given by informal community leaders, elders and knowledgeable hunters.

#### **4.1.1 The Government of Nunavut**

The Government of Nunavut, through the Department of Community Government and Transportation, created a Nunavut Transportation Strategy that outlines their vision for transportation in Nunavut in 2021. This plan encompasses transportation of all kinds by air, sea, and land but will be discussed here only as they influence the travel and safety of local people while out on the ice, sea, and land.

This Nunavut Transportation Strategy (2001) acknowledges the role that on-the-land and ice transportation has played in the economic, social, and, cultural life of the people of Nunavut and aims to continue to support these activities into the future. To ensure the safety of individuals, the Department plans to review safety and regulatory standards used in southern Canada for their appropriateness in the north. As far as travel routes used by community members, they aim to have easily navigable (marked and maintained) trails, with overland routes between communities potentially evolving from seasonal trails to all-weather roads that are patrolled and equipped with emergency shelters. These trail improvements should provide easier and safer access to hunting and fishing areas as well as to neighbouring communities. In addition, the Government of Nunavut aims to promote the use of modern technology and equipment, such as GPS, when appropriate. Also included in this plan is a goal to keep improving search and rescue services (Department of Economic Development & Transportation, 2001).

At the community level, implementation of this plan seems to be limited. To date, there seems to be no visible initiative from the territorial scale for improving trails or informing local people of this goal. The aspects of the Nunavut Transportation Strategy that are further developed are the community Search and Rescue Organization and the promotion of modern technology. Currently, local search and rescue efforts, to be discussed further below, are funded by this department and are seen locally as the institution that has the most to do with the public's safety while on the ice and land. In addition, the territorial government does provide funding for some travel equipment, such as satellite phones available through Hamlet offices.

#### **4.1.2 The Hamlet of Qikiqtarjuaq**

At the municipal level, there exists a Public Safety Committee that consists of two councillors and two or three members from the general public. Their mandate, however, includes dealing with issues only within the hamlet boundaries such as waste disposal, concerns about the sewage lagoon and community reservoir, and the general cleanliness of the community. The Mayor, Loasie Audlakiak, said that previous committees had discussed issues like climate change but had not taken any actions. However, if the committee felt it was important, they could work with the HTA on issues regarding land and ice travel.

As mentioned, the Hamlet does have satellite phones that may be signed out and used by community members. This, along with some other equipment used for local Search and Rescue efforts are provided by the Department of Community Government and Services, through Nunavut Emergency Management. When interviewed, the Mayor felt that additional equipment, such as a boat, should be provided for the community.

As indicated, the Hamlet Council and the local Search and Rescue (SAR) Committee work closely together, as the Hamlet administers funding for SAR for equipment, gas, and other required supplies. SAR is activated either if a hunter radios in himself that he is in trouble or if the Committee is notified, usually by a family member, that a hunter has not returned. The SAR Committee leader, the Mayor, Deputy Mayor, Senior Administrative Officer, and the RCMP work together to decide when, where, and with which people to initiate the SAR.

### 4.1.3 Nattivak Hunters and Trappers Association

Community Hunters and Trappers Associations/Organizations, including Qikiqtarjuaq's Nattivak HTA, are associated and funded by the Nunavut Wildlife Management Board. This territorial organization's overarching mandate is to protect the use of wildlife by the Inuit of Nunavut while respecting the principles of conservation. The local HTAs are responsible for implementing this mandate at the community level, in other words, overseeing all local harvesting activities (Nunavut Wildlife Management Board [NWMB], n.d.). Although the HTA mandate is clearly focused on wildlife, some participants in this research believed that this institution has the responsibility to take the lead regarding safety issues concerning local people travelling on the land and ice.

*The HTA is the one that should be dealing with this but they don't really deal with it. It's more individual people that inform the public about dangerous areas whenever they encounter them. But, according to my knowledge, it's the HTA that should mainly be dealing with this, but they're not really involved.*  
(Loasie Audlakiak, original in Inuktitut)

*They (some of the community youth) have not been trained, taught to do things properly. I say this is HTA, they're responsible to teach the people to be out there. That's how I see it, HTA is responsible for teaching how to be safe.*  
(Leslie Nukiwuak, original in English)

Although HTA members, as with most hunters, are involved in the local processes of information exchange about conditions and hazards, there are no formal initiatives taken by the institution to deal with land-use safety of the local public. The HTA representatives that I talked to did not believe that the safety of local hunters was one of their mandates.

*We don't deal much with safety issues. There's a Search and Rescue Committee in this community. Us, it's more like wildlife... It's mostly the elders that speak out, what to do out on the land. It's not us, it's mostly the elders.*  
(Anonymous HTA representative, original in English)

The HTA representatives felt that along with organizations like SAR, community elders took the role of providing guidance regarding how to travel safely and avoid dangers. In addition, they said that hunters frequently communicated with each other and that families take the role of knowing hunters' plans and notifying others if they have not returned. Despite some local disagreement, the HTA representatives that were interviewed felt that safety issues were not within their jurisdiction.

Each of the formal institutions discussed influences land and ice-use safety in some way; however, none fully takes responsibility over the safety of community. In the absence of a strong formal institutional role, informal social structures and management systems guide people with regards to safety on the land and ice.

#### ***4.2 Safety is tied to the Knowledge of the Past***

The knowledge, skills, and technology Qikiqtarjuarmiut rely on to be safe are intrinsically tied to their past and their ancestors. In fact, the term often used to translate 'traditional knowledge' is *Inuit Qaujimajatuqangit*, which literally means 'what is long known by Inuit'. In Qikiqtarjuaq, the connection between the past and contemporary Inuit knowledge regarding safety was emphasized in interviews. Elders were recognized as the closest link to the community's ancestors and their knowledge. For example, hunter Jukie Nookiguak, clarifies his understanding of the term *Inuit Qaujimajatuqangit*.

*The older elders are the ones that hold the most experiential knowledge, the real knowledge. They know the knowledge before communities were permanent. I'm younger and I don't know as much as the older elders. So, Inuit Qaujimajatuqangit refers to older elders' experiential knowledge. And I just want you to understand how we understand Inuit Qaujimajatuqangit. When we say it in Inuktitut, it's the oldest elders who hold this knowledge, people prior to first contact. And we who are born after that contact do not have the same level of knowledge.  
(Jukie Nookiguak – original in Inuktitut)*

Elders' knowledge is therefore distinguished from those of other community members because it is more closely tied to the knowledge of the community's ancestors. Because of this connection and their lifetime of experience, elders' knowledge is highly respected, and elders are consulted on a variety of topics within the community.

With regards to safety, elders often take a lead role in the community for teaching others how to be safe on the land. Elders that were interviewed explained that there are traditional Inuit laws about safety that continue to be important for people to learn today. Elders often teach this by practicing the laws themselves. However, the information may also be shared through conversations or stories as a way to prepare people for travelling. Some elders will also help monitor others' actions. If a community member is seen to be travelling in an unsafe manner, for example, they will ensure that this person gets the message to not do this anymore.

*When someone, an elder, sees someone out there in the beginning of the freeze-up on the ice, they usually go on the local radio, be cautious, have this and this and this, accidents do happen. They do this, the elders do this to try and remind people.*  
(Leslie Nukiwuak, original in English)

Elders were also identified as the ones who go on the community radio communicating to others about dangerous areas, safe routes to take, and required equipment. Elders even help disseminate knowledge and experiences from other hunters to the public to ensure awareness of what is occurring in the environment.

*A lot of the times nowadays, older people will go on the radio, which parts of the ice are safe and what is not safe. Like, they announce it on the radio right away that there's this spot that you can't go through anymore. Some of them will start to tell you if it's safe enough to go or if it's not safe at all... And, for instance, if I notice that there's some thin ice, I'll talk about it in town. And once the older people hear about it, they'll even go on the radio rather than have the younger ones do it.*  
(Jay Moesesie, original in English)



Elders play an important role in communicating information about safety in the community, and the information they share is valued and respected. Nevertheless, elders remain modest about their knowledge. As one elder mentioned during an interview; ‘I don’t know a lot, I just lived the life’ (Ceetie Natsiapik, original in Inuktitut).

*This survival knowledge and terminology, this is the elders’ work, they were educated by the time they were born. They have their PhD in survival but that is not recognized. It is a privilege to have this knowledge. It is a high honour and very respected. But the elders don’t think this way, they’re very modest.  
(Anonymous Participant, original in English)*

A story that demonstrates elders’ knowledge of survival skills is that of Igloolik elder, Enoki Kunuk, who was ‘lost’ for four weeks during the spring of 2007. After failing to return from caribou hunting, the community of Igloolik began searching for him. Although air searches failed to locate the elder and the official military search was ended, the community believed that Kunuk remained alive. As it turned out, Kunuk had become stranded when the ice broke up and since he always travelled with extra equipment, but no communication system, he set up camp to hunt, fish, and wait. Four weeks later the elder was found alive and healthy (CBC News, 2007). During the month that Kunuk was lost, interviews about safety were conducted in Qikiqtarjuaq and, logically, this story emerged many times as an example of the knowledge that Inuit, particularly elders, have about the land and ice.

*I kept saying, that guy in Igloolik, I was saying ‘he’ll survive’ because I was talking to another Igloolik elder when they were looking for him. This elder, he wasn’t worried, he wasn’t worried at all. He said ‘he’ll survive, he’ll look after himself’ because that older person knows that person (Enoki Kunuk) very well.  
(Davidee Kooneeliusie, original in English)*

The Igloolik elder knew Kunuk’s depth of knowledge and his skills and because of this, he was confident that Kunuk was safe and healthy somewhere.

The skills, values, and perspectives of Qikiqtarjuaq elders link the community to their ancestors who are remembered as strong, healthy, and knowledgeable people. Through this dialogue among past and present generations, Inuit traditional knowledge or *Inuit Qaujimagatuqangit* draws upon the past but also continually evolves to adapt to the social-ecological environment of each generation (Berkes, 2008). The knowledge elders hold is a source of confidence and pride for the whole community as it represents the ability of the Inuit people to survive and thrive in the arctic environment.

### ***4.3 Safety is tied to Knowledge that is gained through Experience***

Safety in the arctic environment is tied to knowledge that is gained from experience in this environment. The respected role of elders within communities exemplifies the value that is placed on the knowledge that comes from experience. The more a person has travelled and experienced in their lifetime, the greater they are respected for their knowledge of the subject. Participants continually commented that Inuit learn through the experience of travelling on the land and ice and this is the best way to develop one's knowledge of how to be safe in the arctic.

*It's better to be taught in Inuit knowledge because it's kind of hard to learn being told or from a book. If you do it or watching, watch and learn, it's better to know out on the land, learn from somebody. Like, if we learn something by reading, we know with our mind but we don't know the actions. So, you gotta learn by actions, it's better.*  
(Gary Arnaquq, original in English)

It was also common for participants to recount stories of when they ran into dangerous situations or had accidents while out on the land. It was clear that such experiences played an important role in learning how to recognize and respond to danger.

*Most of the time when we really learn something is when we get into an accident or when we fall through ice, that's when you'll really remember. I've had a few incidents myself*

*on thin ice. There's been a couple of times I have fallen through thin ice on snowmobile, that's when I started to learn if I can use that thin ice or not with a snowmobile.  
(Jay Moesesie, original in English)*

Many participants believed that the experience of travelling with and watching a close family member was the only way to truly learn how to be safe. Inuit knowledge has always been acquired through this practice of observing and experiencing different situations (Briggs, 1991; Stuckenberg, 2005). This contrasts the question-answer format of learning which has traditionally been deemed as disrespectful in Inuit communities as it indicates that one is demanding an answer. Therefore, it is rare to see Inuit youth asking direct questions to older people (Stuckenberg, 2005). Instead, with few words, but lots of time to observe and experience, Inuit youth begin to embody detailed knowledge, including how to be safe on the ice and land.

Experience also validates an individual's perspective and knowledge. For example, while being interviewed, participants were careful to inform me if the information they were sharing was not from their own experience but something they heard from another person. Similarly, at one point in the verification process, the Working Group had thought one of the quotes I used to explain the way in which Inuit travel was not complete and therefore could be misleading. I suggested that the quote be removed from the final product. However, the Working Group disagreed with this solution since a participant had obviously said this statement based on their experience and this must be respected. It was finally decided that more information would be added to explain that, in certain situations, the information expressed in the quote may not always be true and different actions must be taken. Here, despite their problems with the statement, the Working Group respected the information shared because it was based on

that person's experience. This example shows that in Qikiqtarjuaq, experience is equated with knowledge. Therefore, the only way to truly become knowledgeable about how to be safe on the ice and land is to have experience in this environment.

#### ***4.4 Safety is tied to maintaining Respectful Relationships***

The opportunity to learn through experience comes from having experienced teachers within one's social network. Having knowledge about safety is therefore about having a place in a social network, allowing access to experienced teachers as well as to the continual community dialogue in which the conditions are constantly being analyzed and knowledge exchanged. For most hunters, the role their family, both immediate and extended, played in teaching them how to be safe was emphasized in the interviews. It was explained that learning about safety comes from time spent travelling with close family members as it is through these relationships that youth are taught and exposed to life on the ice and land.

*The only way to learn, at least for me, I have only learned by going along on trips. Not really being instructed by real hunters, they didn't really say you have to do this, but by following them around and going along on trips you can start learning more. Through this only I have learned: by trying to be with real hunters, they are very educated, those who came before us.*

*(Pauloosie Keyootak, original in Inuktitut)*

*Most important safety issues, is like, the only way you learn these safety issues is you have to know someone who knows the safety issues out there. You can't just go out there and learn on your own really, you put yourself in danger that way. From what I've learned throughout the years, I learned from my father, he taught me about what is safe and what is not. So, I've gotten to, a number of times, I've been on really thin ice and I know if I can get out of it or not.*

*(Jay Moesesie, original in English)*

Many participants described their learning process as the time spent following their father or grandfather during which they would watch, at times following instructions, and copy

what their mentor was doing. So, the process of experiencing trips on the land and ice is intertwined with oral conversation, occasional instructions, and stories that connect safety within a larger worldview and way of life.

*So, sometimes I just listen to my dad when he speaks and he speaks something into me. He doesn't even try to give me instruction, he just naturally speaks and he speaks something very powerful. These things are vital. I believe in having proper foundational ground to stand on before you have all the outward knowledge that you have to have. (Billy Arnaquq, original in English)*

As Billy explains, the information being transmitted is not only specific skills or knowledge about the environment, but also involves the values and beliefs that contextualize and stretch beyond the topic of safety.

The foundational knowledge required to be safe is transmitted through family relationships. Families also support each other in other ways to ensure their safety, which includes both men and women's skills and knowledge. Because this research was focused around Inuit perceptions of sea ice safety, the list of experts that were to be consulted consisted overwhelmingly of men. As a result, a balanced perspective on women's concepts of safety cannot be adequately presented here. Nevertheless, it is important to note that since knowledge about safety is developed and revolves around the family, women's knowledge, along with men's knowledge, is a valuable contributor. As mentioned, men were known to be the experts on travelling conditions because of their depth of experience as hunters. Women on the other hand, may have a broader perspective on safety. They are in charge of supporting men's hunting activities by preparing clothing and food for their husband's travel while also taking care of the children and keeping track of their husband's hunting activities.

*In the Inuit culture, men and women had specific roles and duties. Hunting and going out on the ice and knowing about the ice was mostly a man's duty, men had to know all about*

*that environment. And women knew about that but that was not their main knowledge...In Inuit society, the women's role was to look after the children, look after the household, and make clothing. The men always come first, men's clothing, they make the men's clothing first because a man has to go out hunting and man has to travel. And when her husband is going to travel, a woman has to make sure that she prepares the food, make sure he has all the food that he would need for the amount of days that he would have to be gone. And, usually when a person goes out hunting, they let their spouse know where they're going to be and when they're expected to return. That was a given. And when the spouse at home, when her husband doesn't come home at a specific time and she begins to worry, she always lets other people know that her husband hasn't returned.*

*(Leah Kuniliusie – original in Inuktitut)*

Women have the role of helping keep their husband, and therefore their whole family, safe by monitoring travel plans and preparing, sewing, maintaining skins, clothing, tents, and food. Women's roles and knowledge have been changing in recent generations and may not be as distinctive as they were in the past. However, women and men continue to complement each other with their skills and knowledge in strengthening family relationships, and ensuring family safety.

Although there is an emphasis on the family with regards to ensuring that people become knowledgeable about safety issues, this process extends beyond the immediate family and involves experts in larger social networks and the community as a whole. Although community elders take a lead role in ensuring that information regarding safety is distributed to the public, many hunters play an important role in keeping the community knowledge base about environmental features up-to-date with the input of new knowledge and experiences. Hunters are always in communication with each other while out on the ice and land, as well as in town. When Inuit come across another hunter or family travelling, it is common for people to exchange information about their plans, experiences so far, and the conditions they have noticed. Many hunters also prefer to travel with other hunters, allowing for another set of eyes to analyze the surroundings.

*You're more secure with friends because if they've lived here for a long time, they know, and communicate. Especially if we're going into an area where we've never really been before, we observe, we both observe. But, if you go with new people, there's only one person observing the travel conditions, the route they're taking. But, if you travel with friends from the same country, they're all observing.*  
(Davidee Kooneeliusie, original in English)

Whether alone or in a group, having a radio or satellite phone is a key piece of travel equipment. These allow you to keep connected with other hunters out on the land as well as those in the community.

*If it snows the next day you know that the thin areas will melt with the snow. The next day, we will warn people that this area may be dangerous. They warn people by radio or by satellite phone... When you're travelling, if you notice something dangerous or different, you can call the public radio and announce it.*  
(Stevie Audlakiak – original in English)

Using the radio, one can arrange to have missing supplies brought to them with the next traveller, arrange to coordinate plans with others, exchange information about conditions, or activate search and rescue in case of an emergency. This communication system guides activities on the land and ice by facilitating information and resource sharing, thereby ensuring a greater level of safety. Ongoing dialogues about life on the ice and land spill into the community through radios and as hunters come home. Travelling conditions, routes, dangerous areas, weather, and environmental changes are all common topics of conversation around the community. Spreading this information from individual hunters to the public occurs in informal ways, through 'hunting stories' over coffee and a game of checkers at the co-op restaurant, talking at the store or house visits, or more formally, over the community radio.

*What usually happens at this time of the year (December) is people will gather in one place after hunting hours, like four o'clock, people might gather at the hotel for a coffee and chat about it. Yep, people usually gather after hunting and talk; 'this guy was up here and this guy was down there' and that's how they know about the different areas.*  
(Morris Kuniliusie, original in English)

The hunters that gather at the hotel in early winter are, in a way, just talking about their day over coffee as any group of men might do. However, amongst the jokes and stories, people are also exchanging information about the conditions they observed and what they anticipate for tomorrow.

An interesting example of how Inuit learn from each other is the experience of adult hunters who have moved to a different community midway through their life. One of the anonymous hunters interviewed had moved to Qikiqtarjuaq as an adult. Although this man had grown up travelling and learning about safety in and around his home community and therefore had detailed knowledge about ice and weather conditions, he had no knowledge about the conditions and routes around Qikiqtarjuaq. To be safe travelling in this region, he developed relationships with local hunters. He was told of dangerous areas and, at least at the beginning, he had to follow behind other hunters when travelling. With time, he was able to go out on his own. A similar experience was described by Davidee Kooneeliusie, a Park Warden for Auyuittuq National Park, who is from Qikiqtarjuaq but moved to work in the nearby town of Pangnirtung ten years ago.

*Pangnirtung, I've lived there for ten years now, I don't know the area enough. I'm learning it now, I am always talking to the people and I even had a map drawn out for myself. Where are the best areas to camp out for boats and skidoo, which area is it bad for certain months, not to go in this area. I have that on my map. Because, I'm pretty much a tourist myself in the south side of Pangnirtung because I don't know the area. I'm just learning it now by asking questions to the local people, to get familiar with the area. Up here, in Qikiqtarjuaq, I pretty much consider that I know the area. (Davidee Kooneeliusie, original in English)*

It may seem remarkable to an outsider that ten years of experience in an area, preceded by a lifetime of experience in a nearby region, is not enough to be deemed a knowledgeable traveller. Yet both of these men recognized that they had a limited



relationship and little knowledge about their new environment compared to local people. For them, the best way to develop this was to consult and learn from the local experts by travelling with them and listening to them talk about the environment.

Communication amongst the people of Qikiqtarjuaq is a central feature of their safety in their environment. In effect, it allows for a constant input of new information into the wealth of knowledge that has existed within the community for generations, based on recent experiences of individual hunters. To be safe is to be connected within a social network in which new information is analyzed by many experts and adds to the overall communal understandings of environmental processes. With this intertwining of individual and community knowledge and well-being, survival of an individual is linked to the collective survival of the community (Takano, 2005).

Another way in which a person's relationships affect their safety is the belief that the way individuals act amongst people or animals can affect their future well-being. In this way, safety is applied in everyday interactions with other beings.

*We have been told to be like this, any little thing, even if it is alive or not, even if it is soil, anything that we can hold or see, they're all said to be connected to the weather by our ancestors. The need to not destroy, the need to not make fun of, I'm not allowed to laugh at things outside, anything, a small growing plant or a small animal, I'm not supposed to laugh at, that is a real law for Inuit.*

*(Levi Nutaralaaq, original in Inuktitut)*

It has been documented in other Inuit communities that if people break rules within their social world, such as committing a wrong-doing to another person, they may be punished in the future by the natural world (Oosten & Laugrand, 2002). Also, the way children are raised may also affect their future safety when relating to the natural world. A child that is over-protected and always sided with in disagreements may be targeted in the future by aggressive animals.

*We were constantly told by our elders, when we have our own children, not to side with our children. Like, if the child is fighting with another child, I interfere and scold that child or involve the parents and sometimes the parents go crazy because they don't want anything to happen to their child. We were told constantly not to do that because, the reason was, if we are to side with our child all the time, these dangerous animals (polar bears and walruses) will constantly bother that child, who grew up being sided with. (Leah Kuniliusie, original in Inuktitut)*

Similarly, if one is disrespectful to a non-human being, a comparable penalty may occur to them or their relatives in the future. A good example of this is the rule forbidding bad-mouthing polar bears, because polar bears may take revenge. Another example of the repercussions for mistreating the animal world is the rule around earth eggs, which are believed to be eggs from the earth destined to become leaders of an animal group. It is known that if you break an earth egg, the earth will take vengeance with bad weather.

*Earth eggs can affect people's safety. Even the younger generations are told not to pick or break earth eggs because once we break an earth egg, the earth will mourn for the egg. Therefore there's going to be a lot of wind or the weather becomes weird when the earth is mourning for the egg...If we were to look for birds' eggs, just observe, the bird becomes hyper active to the human being because it doesn't want anything to happen to its egg. The earth is the same as the birds; it doesn't want anything to happen to its egg. Therefore, if we were to destroy it or even crack it, the wind or weather becomes weird. (Leah Kuniliusie, original in Inuktitut)*

These examples illustrate that the way one acts in everyday life can have future implications for their safety. If the entire ecosystem is treated with respect, it will continue to provide for people. Thus safe practices include the requirement that people maintain respectful relationships with both human and non-human beings and the environment as a whole.

#### ***4.5 Safety knowledge is Designed for and Shaped by the Arctic Environment***

The knowledge Qikiqtarjuarmiut have about how to be safe is specialized to the arctic environment. Their approach to safe travel, including the survival skills and

technology used, is shaped by this climate and environment. In the interviews, the element of the arctic environment that seemed to influence Qikiqtarjuarmiut approaches to safety the most was the understanding that this environment is characterized by uncertainty. Although hunters and elders shared detailed knowledge about arctic conditions, they always made sure to emphasize that the arctic environment and the indicators that they monitor should be understood as fluid and uncertain.

*There are hazards everywhere according to the weather, through all things, even if it is ice, even if it is water, it can have hazards anywhere. And our land is the arctic, it gets very cold and it gets warm but it's never the same. There are these dangers, the cold and for us, we have heard, since it's our land, if it gets too hot that it would be bad for us, if it got too warm, we've heard this since a long time ago. The winters aren't the same, the summers aren't the same. There's even a saying, it is having a bad summer, they say, if it doesn't change for a long time, for more than one month, if it stays the same all summer, then it would be said to have a bad summer in Inuktitut.*

*(Levi Nutaralaaq – original in Inuktitut)*

In this perspective, a normal season is one that fluctuates. It is also emphasized that no matter what season or what type of weather or conditions exist, there could be hazards anywhere.

To remain safe in an environment characterized by uncertainty, a number of practices and skills have been developed. Participants continually stressed that people must remain observant at all times, allowing for slight adjustments in actions in response to on-going changes. An anonymous hunter describes the need to be constantly perceptive of the ever-changing environment.

*Travelling and hunting is my life, this is how I was brought up. When I go travelling I have to be very observant of the weather and ice around me. I can travel even when it's foggy just by watching the formation of the snow. When I'm travelling (when it's clear) I have to observe what places look like. Then when it's foggy, I will know which direction they're pointing, where I should go. And sometimes I even stop just to observe what is going on around me. When I'm travelling on land and it looks the same, I put rocks to identify where I've been. These are not really Inukshuit but just the biggest rock I can find so I can see them from far away. I have used that when it was foggy before. Today*

*you can go anywhere with GPS. But, these are also things you can use. I also use the stars if I'm going to travel during the night. If you can't see anything at night, stars will point you where you want to go. If there are no stars then you can observe the snow. Wind changes direction so it's better to use snow for direction.*  
(Anonymous Participant, original in Inuktitut)

Intricate details of the multiple aspects of the environment are constantly being observed. This is not only to note changing conditions and emerging dangers, but also to navigate within this environment. Interview participants explained that they use a variety of detailed indicators, such as the sky, wind, land formation, and snow and ice formation to find their way. In addition, the environment around Qikiqtarjuaq is full of meaningful places that are tied to stories, events, and names which are used for orientation while also providing information about the area's history, conditions, and potential safety concerns in that area.

To be able to constantly observe one's surroundings, hunters know that they need to be rested and alert. It is important that people avoid pushing themselves too hard and continually monitor their own and their travelling companions' exhaustion levels. However, hunters know that it is the environment, not people, that dictates their travel pace and plans. To deal with the inherent uncertainty involved in travelling in the arctic, Inuit remain flexible, patient, and always ready to adjust their plans. One way in which this is achieved is by always travelling with the necessary equipment, including extra supplies for the unexpected.

*We make sure that we have all the equipment that we will need. We have to take a lot more than what we need, the north is very unpredictable. Sometimes you could go out for one day and you could end up being out for days.*  
(Billy Arnaquq, original in English)

Equipment that is used includes firearms, proper camping gear, extra clothing, food, fuel, required tools for snowmobile repair, a knife, harpoon, hook, stove, rope, shovel, radio,

GPS, and so on. To be prepared for the unexpected, bringing more than enough equipment is invaluable to a safe trip on the land and ice.

Of course, safety is not just about having one or two skill sets or learned abilities. Hunters must become experts in a multitude of interdependent skills, such as how to test ice thickness or manoeuvre a snowmobile across a crack, and be able to modify these skills and how they interact with each other as they travel. So, when bad weather hits, a hunter must not only be able to know where he and others are, but be able to navigate amongst the dangers with low visibility, have the knowledge to build (or set up) a safe shelter, and carry equipment to wait out the storm comfortably. Accompanying this, hunters must be patient, flexible, have the will to survive, and the physical and mental strength to face harsh conditions (Collignon, 2006). Hunters have these skills and a developed sense of intuition because of the depth of knowledge they embody about their particular area of use. Hunters in Qikiqtarjuaq travel long distances and use a variety of routes. As one participant joked when mapping his travel routes, “my trail route is all of it; I travel all over the north, every fiord” (Jay Moesesie, original in English). To be safe, therefore, is to develop detailed knowledge about an area and to know where the hazards occur and how to respond.

*I think this area (pointing to map) is more dangerous because these areas I have never travelled before. Even though they might not be dangerous, because I have never travelled on them before, I would consider them as dangerous areas. The area that I travel, I know the area and once you know the area, there's not any real danger. There might be dangerous areas around there, if that's how you describe dangerous areas, but I know them, I know the area.*

*(Toomasie Newkingnak – original in Inuktitut)*

Here, Toomasie referred to the different perceptions of what might be characterised as dangerous. He did not consider the areas he travels as particularly dangerous despite the

fact that they are characterised by thin areas, cracks, and risks of avalanches. Within these areas, he is aware of where these features occur and therefore does not consider travelling there dangerous. This contrasts with his perception of the most dangerous areas which he identified as the areas he had never travelled and therefore did not know what type of features characterise those areas. In this respect, frequent interaction with the land and ice creates an environment that is less dangerous. Because of their lengthy history in this area, the people of Qikiqtarjuaq acknowledge that their skills, knowledge, and worldviews are inextricably influenced by this environment. For this reason, Qikiqtarjuarmit feel linked to this landscape, know that they are best prepared to survive here, and are the stewards of safety in this environment.

#### ***4.6 Safety is tied to Inuit Identity and Well-Being***

Hunting and travelling on the land and ice is central to life in Qikiqtarjuaq. This way of life and the knowledge required to sustain it not only has subsistence or economic significance, but as was presented above, it is also critical to the strengthening of family relationships and one's own well-being. In contrast to the inhospitable environment that is often depicted in the south, the arctic environment is home for the people of Qikiqtarjuaq, a place that is characterized by past experiences and stories. Interview participants explained that the relationship they have with the land links them to their ancestors who thrived in this environment. In this way, having the knowledge and ability to be safe in the arctic environment is linked to Inuit identity. It allows people to connect their past with the present by revitalizing relationships with the land and with each other.

*Being out on the land is part of healing. When someone is connected to the land, animals, you are pulled to go hunt, this is what it means to be Inuit. Just being out there, you have time to think on your own, you feel that you are home, in your comfort zone.*

*Another part of healing is eating your own country food. Store-bought food, you can eat it but you still feel starving, your soul is starving. The connection Inuit have with the land and sea, this is what tells you who you are as an Inuk person. Like, my parents who followed wildlife, because of their need for clothing, the animals determined where they would go. The land and sea is important to the survival of Inuit people. Out on the land, we realize our own culture. We can pass this on to our children by taking them with us out on the land. This is survival for the community, to travel on the sea and land. Without this you don't have culture, identity.  
(Anonymous Participant, original in English)*

People in Qikiqtarjuaq often described the land as a healing place and one that they go to when they need true relaxation and escape from the sometimes stressful community life. This is compared to non-Inuit who are, in effect, strangers to the environment and, at times, approach the environment as something to be ‘conquered’. For local people, being on the land is where they can eat country food, where the depth of Inuktitut terminology is used, where detailed survival skills are applied, and relationships amongst family members are reinforced. For these reasons, various community healing initiatives for inmates or those recovering from traumatic experiences are held in camps away from the community. Because it is linked to healing and identity, Qikiqtarjuarmiut understand being on the land and ice as a positive experience and one that furthers a person’s well-being. Developing a relationship with the environment is not only for the purpose of being safe, but also so one becomes a healthy, capable person.

#### ***4.7 Discussion***

Although each of the formal institutions in Qikiqtarjuaq that were discussed may deal with land-use safety to a certain degree, there is no one institution that takes responsibility for the safety of community members while out on the ice and land. As mentioned, some participants felt that this lack of formal institutional involvement was a problem given the current community reality, in which not all community members are

given the same opportunities to acquire experiential knowledge of safe practices on the land. However, lack of dependence on such institutions also indicates the strength of existing knowledge processes that focuses on learning through experience, developing social networks where information and resources are exchanged and relationships are respected, continually adapting to the arctic environment, and linking life on the land to personal and communal well-being.

Traditional knowledge research reveals the link between contemporary knowledge and knowledge used for generations. For example, traditional stories that inform about dangers, values, practices, or particular places are passed down through generations (Collignon, 2006). Applying this ‘traditional’ knowledge to contemporary experiences allows this knowledge to become embodied, in effect, linking the past and the present. In this way, experiential learning is the only way to gain ‘true knowledge’, as Goulet (1998) describes it amongst the Dene Tha, and the self-confidence hunters need to rely on themselves in many situations (Collignon, 2006). This is because experiential knowledge produces precise knowledge specific to location, time of year, subject, and object (Oosten, 2005). In addition to stories, traditional laws, skills, and values are validated when applied to new experiences, allowing people to connect their past with the present and help ensure not only one’s physical survival but cultural survival too (Condon et al., 1995; Legat, 2007). In this way, knowledge is gained by engaging with the world, instead of simply acquiring information about the world (Ingold, 1993). Similarly, in Qikiqtarjuaq, there is continual dialogue that is rooted in the past and expressed through stories, ways of teaching, or casual conversation that reveals how Inuit are to be safe on the land and ice. However, those that truly have this knowledge are



those who use these teachings to inform their actions, thereby confirming the knowledge through experience while also acquiring new information to allow for future adaptation.

The importance of maintaining respectful relationships within the human and non-human world is another theme that frequently emerges in literature concerning Inuit or traditional knowledge. Berkes (2008) explains that management systems require social institutions that organize how individuals interact and cooperate with each other. These institutions may contextualize, for example, the process of learning or survival (Berkes, 2008). Bonny (2007), applies this to the family which she defines as the nucleus of Inuit knowledge. She explains that an Inuk man is driven to hunt because he loves and wants to provide for his family while a woman reciprocates his love by making the animal into clothing and food. So, skills and knowledge are practiced to ensure survival while also nurturing family relationships characterized by love and respect. Children learn from watching their parents engage in these relationships, express their values and world view, and apply their skills and knowledge. This social entity, the family, is thus the foundation of Inuit knowledge, including that related to safety (Bonny, 2007). In fact, Briggs (1970), claims that whenever possible, Inuit choose to travel, work, and share with their family because it is in the context of these relationships in which they feel comfortable and safe. To maintain these family relationships which are integral to survival, peoples' interactions are characterized by respect and love.

Apart from the family, other social processes exist within Qikiqtarjuaq that facilitate frequent interaction and sharing of information and resources. Communication is emphasized amongst Inuit hunters as the process of sharing information, or telling “the story of the trip”, which adds meaning to one's experience (Aporta, 2004, p.26).

Describing a narrative journey shares this learning experience with others which adds or re-emphasizes specific information of the community's safety culture and knowledge (Aporta, 2004). Similar to other hunter and gatherer cultures, Inuit understand themselves as an active element in their environment and therefore believe that for their community's safety, it is integral to maintain a relationship characterized by reverence for the entire ecosystem (Collignon, 2006; Ingold, 2000). Becoming knowledgeable is based on developing and maintaining relationships in both the human and non-human world. This may be linked with the concept of an *inummarik* or 'a genuine person'. Becoming *inummarik* is the continual process of ensuring proper interaction, in both attitude and skill, with other individuals, animals, and the environment (Brody 1975; Stairs, 1992). Ensuring one's safety is intertwined with becoming a genuine person in Inuit society. Both safety and *inummarik* require respectful relationships within one's family, in the community, and with other beings.

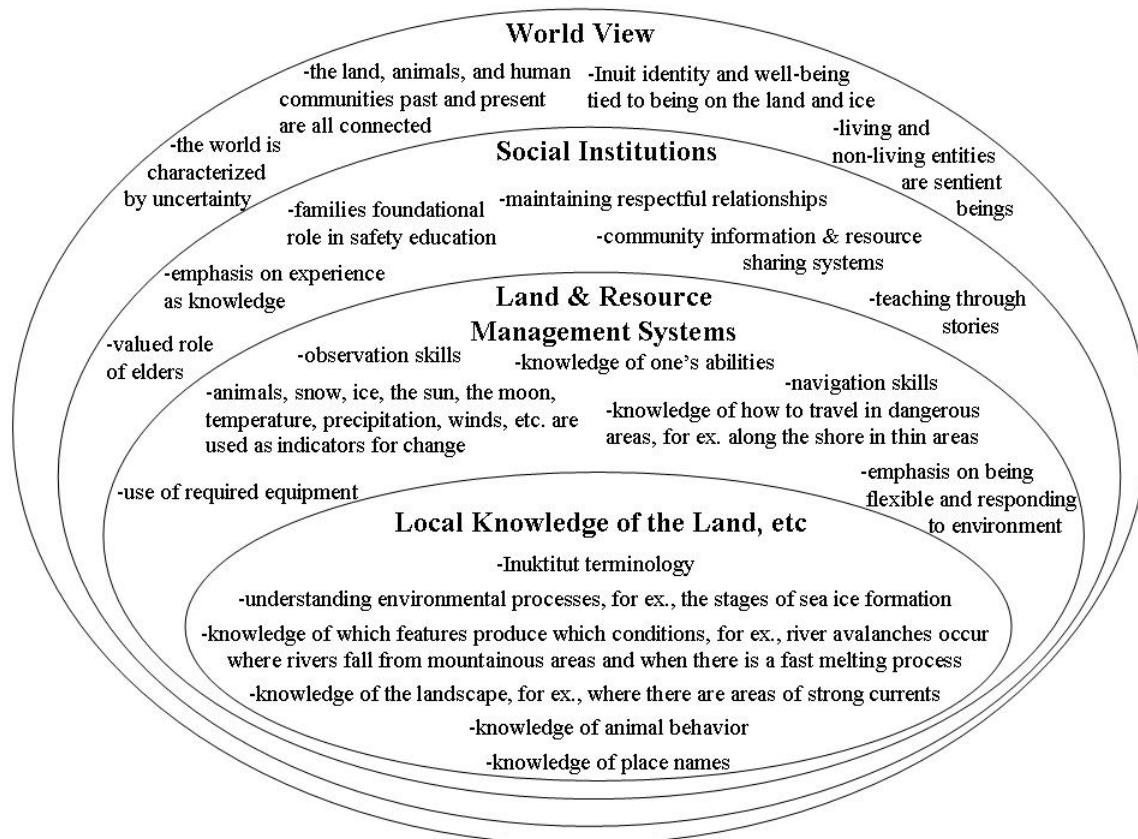
Inuit knowledge is shaped by the arctic environment that they have come to know over the generations. It is not only skills and technologies that are shaped by the arctic ecosystem, but also Inuit worldviews about their environment. Inuit understand themselves as completely integrated in an ever-changing arctic environment (Collignon, 2006). Briggs (1991) explains that uncertainty is embedded in Inuit worldviews and influences how Inuit learn, interact with each other, and perceive and respond to changes in their world. As explained, in the context of safety, this worldview helps define how Inuit travel on the land and ice. For example, Inuit navigate by being equipped with knowledge of the environment and the skill of observation. With this, Inuit hunters 'feel their way' towards a destination, constantly modifying their actions in response to the on-

going changes (Ingold, 2000). At any moment, a characteristic of the environment may change and, Inuit hunters may have to alter and see new possibilities for their plans, equipment, or travelling companions. As Briggs (1991) emphasizes, each being or object has varying potentials depending on the circumstance. Flexibility and the ability to adapt are characteristics of experienced hunters because they understand that no two situations are the same (Legat, 2007). The Inuit, with their knowledge developed through long-term occupancy of the arctic, are the best prepared to survive and adapt to the ever-changing arctic environment. This is in comparison to visitors to the arctic who, however well-equipped and knowledgeable in their own environments, are usually seen as unprepared in the north. With regards to safety, Inuit see their knowledge as their greatest resource.

Experience and lengthy historical use of a specific environment not only allows for the development of detailed knowledge but also an intimate relationship. As mentioned, this relationship is understood as important for one's physical survival as well as integral to one's development as a strong and responsible being (Legat, 2007). Participants in Qikiqtarjuaq spoke with a sense of pride and importance about the knowledge that exists within their community. Inuit knowledge of and relationship with the environment not only has subsistence and economic significance but is also critical to the strengthening one's identity, social relationships, and psychological and physical health (Condon et al., 1995). As Collignon (2006) documented; "when it comes to the land, it's very personal" (p.75). In Qikiqtarjuaq, participants described the land as the place to go to heal, to be rejuvenated, and be happy. In Qikiqtarjuaq, people that spend time on the land, harvesting and sharing its resources are generally perceived as having

highly valued knowledge and as healthy people. So, having the knowledge to ensure one's safety while on the land and ice is not just about ensuring one's physical well-being, but also allows one to develop a relationship with the environment and become a healthy, capable person.

The themes presented here show that for the people of Qikiqtarjuaq, safety is not only a skill set applied at a certain moment in time but a holistic knowledge system that is fluid and applicable in a variety of scenarios. Safety is a way of life in Qikiqtarjuaq that is expressed in peoples' worldview, relationships, practices, knowledge, skills, and so on. The themes used to describe Inuit safety culture here are not unlike those used in descriptions of the broader concepts of Inuit knowledge, Indigenous knowledge, or traditional knowledge. In fact, to go back to Berkes' (2008) definition of traditional knowledge presented at the beginning of this chapter, Inuit safety culture can fit into the four embedded and interconnected levels that create a dynamic knowledge system (see Figure 4).



**Figure 4: Inuit safety culture as it relates to Berkes' (2008) definition of traditional knowledge which describes four interrelated levels: local knowledge of the land; land and resource management systems; social institutions; and, worldview.**

Figure 4 demonstrates how Inuit safety culture, as it is presented in this thesis, is representative of a larger, multidimensional traditional knowledge system, in which there may exist thousands of 'categories' within each level. Each level is also influenced by the other levels. For example, as part of their worldview, Inuit understand their world as inherently uncertain (fourth level). Because of this, they are constantly updating their knowledge base through their own experiences as well as the information transmitted through others (third level). When travelling, hunters remain flexible in their plans by observing and adapting to ongoing changes (second level), which they are able to do by having detailed knowledge about the land in which they travel (first level). However, the

direction of influence also travels the other way as new experiences and knowledge update management systems, social institutions, and worldviews. Although Inuit are not likely to describe how they stay safe in such a categorical way, looking at Inuit safety culture through the lens of four interconnected levels may help outsiders appreciate its holistic nature. The themes that have emerged in this research to describe Inuit safety culture relate to how Inuit knowledge as a whole is understood.

#### ***4.8 Chapter Summary***

When it comes to safety in the Inuit homeland, non-Inuit may, through experience and the development of relationships with Inuit experts, learn some of the skills and knowledge employed by Inuit experts. They may, for example, equip themselves with the right clothing and gear, learn how to navigate, and read subtle changes and dangers in the environment. However, what is distinctly Inuit is the interrelating of these skills with their knowledge of the entire ecosystem, social institutions, and management systems that guide how people interact with each other and the environment, and a worldview that connects safety with the values and philosophies that guide all areas of life both past and present (Berkes, 2008; Collignon, 2006). The themes presented in this chapter are not new and reflect themes previously presented in literature defining Inuit or traditional knowledge as a process that draws on mutually-influencing levels. This research, however, shows how this process is expressed concerning the issue of safety in Qikiqtarjuaq. It was the goal here to move beyond the specific skills Inuit employ and look instead at the multifaceted knowledge system that ensures safety in Inuit communities.

Qikiqtarjuarmiut have an approach to travelling on the land which ensures their safety and renews their cultural knowledge. In part, the process of being safe is linked to the past, emphasizes experience and respectful relationships, is shaped by the arctic environment, and connected to individual well-being and social-ecological health. When combined, these themes begin to illustrate the holistic safety culture that is present in Qikiqtarjuaq. Going out on the land and ice is not a vacation, but an integral part of life for Qikiqtarjuarmiut. Similarly, safety is not only a set of rules or skills applied at certain moments, but a way of being that is expressed in all facets of life from the motives people have for going out on the ice and land to the way they interact with each other and the ecosystem. The process of becoming knowledgeable about being safe on the ice and land around Qikiqtarjuaq is intertwined within a social system that also ensures personal well-being, identity, and knowledge of all aspects of life. In this way, individual and community knowledge and survival are inextricably linked. This system allows Qikiqtarjuarmiut to remain safe in the arctic environment and, most importantly, allows them to keep on travelling on the land and ice as people have always done.

The following Chapter V explains how the safety culture in Qikiqtarjuaq that is described in Chapter IV is currently changing. Specifically, Inuit safety culture is being influenced by environmental changes being felt across the arctic and social changes that challenge the traditional learning system that is central to community safety.



## **Chapter V: Change and Inuit Safety Adaptations in Qikiqtarjuaq, NU.**

In the arctic today, changes within the environmental and social dimensions have increased dramatically within the last two generations. Such changes may produce new risks and safety issues in societies where there have previously been no corresponding coping strategies established (Boholm, 2003). Alternatively, changes may bring about new skills, management systems, institutions, or understandings. For these reasons, the social and environmental changes that may be challenging or facilitating Inuit safety adaptations in Qikiqtarjuaq are integral to understanding safety in this community.

Global environmental change is expected to greatly impact the arctic, where some of the largest average temperature increases are being experienced (International Panel on Climate Change [IPCC], 1995). This ecosystem is particularly vulnerable to changes in the climate, as only slight changes in average seasonal temperatures have extensive impacts on precipitation and environmental characteristics (Thorpe, 2000). Some of the predicted impacts in the Baffin Island area are, for example, a decrease in sea ice cover and rise in ocean levels, creating increased challenges for Inuit of this region to travel and access resources (ACIA, 2004). Inuit, because of their lengthy relationship and continual



experience with this ecosystem, have a detailed understanding of how the global phenomenon of environmental change is affecting the north (Krupnik and Jolly, 2002; Laidler, 2006; McDonald et al., 1997; Riedlinger, 2001; Thorpe 2000). Specifically, in different areas of the Canadian north, changes have been observed in temperatures, precipitation, multi-year ice and snow, seasonal weather systems, ice processes, water levels, wind strength, dominant winds, and a variety of animals and plant species (Fox, 2002, McDonald et al., 1997). This is influencing all on-the land and ice activities by changing travel conditions and the predictability of the environment (Fox, 2002; Laidler, 2006; McDonald et al., 1997; Nichols, Berkes, Jolly, Snow, and The Community of Sachs Harbour, 2004).

There continues to be a need to document Inuit observations of environmental change for a better understanding of this global phenomenon as well as to guide institutional policies relating to land use and management (Krupnik & Jolly, 2002; Laidler, 2006; Thorpe, 2000). Because of their unique history, ecosystem, and experiences, each Inuit community has their own story about their landscape and the change currently taking place (Fox, 2002). Using the focus of safety issues is a valuable way to talk about environmental changes since global phenomena may seem remote while safety is a day-to-day practicality (Norton, 2002). In addition, safety on sea-ice is a central aspect to community life and is also where the majority of hazards emerge.

With regards to safety, concerns are heightened with increased variability in weather and environmental characteristics observed in Inuit communities. Being able to understand and assess the ice quality is necessary to ensure survival. Specifically, hunters must be able to know what equipment can travel where, at what speed and

direction, and be aware of upcoming hazards (Nichols et al., 2004). Any force that challenges these assessments also challenges Inuit physical survival as well as their cultural survival, as hunting activities remain important to Inuit identity and knowledge system (Condon et al., 1995). Nevertheless, Inuit have thrived in the arctic ecosystem by adapting their safety guidelines and practices to meet their environmental and social realities. Although the ability to adapt to constant variability is part of Inuit tradition and knowledge, some worry that the environmental changes are occurring too quickly, surpassing the adaptive capacity of Inuit people (Newton et al., 2005; Thorpe, 2000). Nevertheless, Inuit are emphasizing the urgency of adapting to changes by using Inuit knowledge while also exchanging knowledge with the scientific community (NTI, 2005). Adaptation processes must be developed quickly for community use, will require financial support, and will be contingent on the ability of governments, communities, and scientists to work collaboratively to share information and resources so everyone is aware of predictions and goals (NTI, 2005).

Although environmental change remains a large concern for Inuit communities, there are other challenging and pressing issues that stem from colonization and the drastic societal change experienced in the Canadian north. For example, Fox (2002), documents that issues such as family violence, suicide, poverty, contaminants, infrastructure improvements, and cultural survival are often a greater concern at the local level than environmental change. Inuit have seen major social changes in only a few generations. Broadly, this includes the shift from living in Inuit controlled camps to moving into settlements where, at least at first, Inuit had little power to manage the issues that affected their lives (Tester & Kulchyski, 1994). The changes resulting from this have been

complex and totalizing, influencing community organization and leadership, housing, education, health, occupation, self-sufficiency, seasonal activities, community distribution, relationships Inuit observed with each other and the environment, as well as all other aspects of life (Huntington & Fox, 2005; Kulchyski & Tester, 2007; Stuckenberg, 2005). Of course, Inuit perceptions, practices, and rules regarding safety issues have also been influenced.

Since early Inuit and non-Inuit relations, Inuit have been open to new technologies that help make their lives easier or safer. For example, with the large concentration of people permanently located in one area, snowmobiles gradually replaced dog-teams as they could allow for longer journeys in a shorter period of time. However, the reliance on this technology created numerous additional costs for Inuit families, making it necessary to have a steady flow of cash income (Stuckenberg, 2005). Newer technologies, such as global positioning systems (GPS) are now being adopted into Inuit communities and also changing the way people interact and travel in their environment (Aporta & Higgs, 2005).

An issue of great concern with regards to safety is the change in the way Inuit youth are educated. Specifically, Inuit youth who were historically educated through experienced-based learning on the land are now learning in classroom settings of community schools (Stuckenberg, 2005). Being raised in a centralized community has created a generation of youth that is less likely to engage in the mixed economy that relies on subsistence activities (Condon et al., 1995). This lack of land-use experience amongst Inuit youth has resulted in a diminished knowledge regarding local environmental characteristics (Schlag, 2004; Thorpe, 2000). In addition, the difference in

lifestyle and education has created a large generational gap between the elders and youth who, in effect, were raised in two different worlds. This gap further complicates the problem of inexperienced youth because the traditional learning structure that relies on learning from one's elders has been challenged (Takano, 2005). This issue of how Inuit knowledge can be passed on from elders to youth is a major challenge across Nunavut so much so that the Nunavut government developed the department of Culture, Language, Elders, and Youth with this as its focus (Oosten, 2005). As with the issue of environmental change, Inuit are eager to find ways to adapt to their new social reality.

### ***5.1 On the Land and Ice around Qikiqtarjuaq***

Qikiqtarjuarmiut use a territory size of 82,200 km<sup>2</sup> stretching north and south of the community along the coast line as well as inland (Riewe, 1991). Figure 5 shows this use through the mapping completed throughout this research.



In interview settings, participants were asked to draw their main travel routes, cabin or camps, areas that are used as lookout points to gauge ice conditions, and any sea ice hazards that they thought were important to document. Thin ice areas were the most documented feature and are primarily caused by currents. With environmental change, there are an increasing number of these and I was told that almost every point on the land should be observed for thin ice. There is only one polynya, an area of open water caused by rapids and surrounded by ice, in the Qikiqtarjuaq area. Leads grow into wide cracks in the springtime. Hunters often cross these at an angle either further down the crack or right at the shoreline. The floe edge variation shows how the ice extent grows with the winter. The floe edge, although a valuable hunting area, can be dangerous as ice may be too thin or may break away and leave hunters stranded. Rough ice, which is expanding with environmental change, makes travelling almost impossible, thereby restricting hunters' access to areas. Given the mountainous landscape around Qikiqtarjuaq, snow and river avalanches along with rock falls are a risk. Observing the steepness of the cliffs, the conditions at the bottom, and recent weather conditions can help hunters predict when avalanches will occur. Given the potential hazards, this map shows the importance of knowing one's environment. By knowing where the areas are that frequently become thin, hunters are careful to either avoid that area or check the ice as they travel. However, by no means does this map cover all hazards in this environment as hunters must always be aware of emerging hazards and changing weather and conditions.

The map also tells a story about how people travel around Qikiqtarjuaq. Depending on where their family's cabin is, their objective for going out, and the season, people usually travel north or south from the community. As the sea ice grows with the



winter, people are able to travel further. However, because of the characteristics of the landscape here, where the ice is often left susceptible to the currents and wind of Davis Strait, travel routes frequently hug the shoreline. During my time in Qikiqtarjuaq, I heard of hunters travelling south to Pangnirtung (174 km) or north to Clyde River (379 km) and even on to Pond Inlet (778 km). So, Qikiqtarjuarmiut travel routes stretch further than this map as well as almost everywhere within it; every fiord, up inland rivers, up and down the coast line. Most destinations are reached by a number of routes chosen depending on the ice conditions, the amount of snow cover on overland ‘short-cuts’, and personal preferences. As you head away from the community, well-used travelling routes stretch out like highways to valued hunting and harvesting areas, family cabins and camps, and other communities.

## ***5.2 Observations of Environmental Changes in Qikiqtarjuaq***

It was impossible to conduct research about safety on the land and ice around Qikiqtarjuaq without environmental change becoming a dominant theme in conversation. A wide range of interrelated environmental changes have been observed, from changes in the quality and thickness in sea ice to changes in the speed of ocean currents and ice movements, creating an environment that is now more unpredictable than ever. These changing processes were referred to frequently when discussing the landscape as they are set to have major influences on local land-use.

*A lot of people seem to be very cautious and very aware of the change that is taking place with the ice. This has become like a common issue with a number of people, especially with the local people. I think I see a lot more talking about certain areas that there's so much change on the ice condition and on the climate as well... when I was younger, I don't think it was an issue. It was just normal to come to a year that's melting again, it's warmer again, it's going to be breaking up at certain time. That difference could be between a week or so, when it's open, a little early, a little late. But, vast differences that*

*people are seeing and even the difference of the ice. These different issues, I see a lot more people talking about it, observation and concern at the same time. I think, we have no choice to just observe what's happening and be concerned about what we've seen in the last 10 or 15 years. The change is just so much that, and it's just not for a season, its ongoing change. When it's ongoing change, people are seeing new things that they've never seen before so these issues keep coming up. It's almost every year that I hear something new, that this area in certain places has never been so thin, melt much earlier than normal.*

*(Billy Arnaquq, original in English)*

There are many interrelated and cumulating factors creating changes in the local environment. This includes warmer temperatures, stronger currents, stronger winds, and a decline in icebergs. All of these have an impact on the quality of the ice, the main platform used by the people of Qikiqtarjuaq to travel and hunt. Changes observed in Qikiqtarjuaq that relate to safety on the ice are outlined in Table 1. This is provided to give an overview of how people are observing change and is not meant to fully encapsulate the richness of Inuit knowledge on this topic in Qikiqtarjuaq.



<b>Table 1: Observed Environmental Changes that Influence Travelling Conditions in and around Qikiqtarjuaq, Nunavut</b>	
<b>Observed Change</b>	<b>Evidence and Implications</b>
Increased precipitation	Precipitation affects ice conditions as snow can melt ice and ‘hide’ thin ice areas. In fiords, increased snow has caused very slushy conditions in the springtime making these areas hard to travel through. Also, increased precipitation can affect ocean salinity.
Warmer temperatures in fall and winter	‘Real cold’ (extended period of extreme cold) is now rare. Ice no longer freezes as quickly or as thick.
Warmer temperatures in the spring and summer	Spring and summer have more days with warmer temperatures and/or intense heat. In spring ice and snow melt faster causing sea-ice to break-up early and increased river explosions (caused by built-up water and ice from quickly melting rivers). In summer, meat now rots faster and people no longer need to wear winter clothes when boating. Glaciers are also getting smaller.
Increased strength in currents	Areas traditionally known for currents have even stronger currents and new strong current areas have emerged. Currents cause the melting of ice ‘from the bottom’ and increased currents mean more areas that are thin and need to be observed. Also, currents can erode the bottom of icebergs so they float away faster.
Increased tides	Shoreline rocks that used to be always surrounded by water can now be walked on in low tide. People now have to wait for high tide to travel by boat. In wintertime, bigger tides create water on the ice and can cause areas to more easily break up.
Changes in ocean salinity	There was no consensus on whether the ocean had increased or decreased salinity. Nevertheless, people did think that changes in salinity were affecting ice conditions. Some participants observed that the top layer of the ice (in seal holes) is saltier than it used to be, making the ice more dangerous because saltier water freezes slower and thinner and melts quicker. Other participants felt that there was actually less salt content in the water pointing to the fact that seals sink faster when hunted in the summer. People feel that the lower salinity might be responsible for the softer ice, resulting in a faster melting process (which occurs in in-land lakes).
Decline in the number of icebergs	North of Qikiqtarjuaq, icebergs are the only ‘islands’ between the shoreline of Baffin Island and Greenland. They are known as nails that hold the ice together and close to shore. Without them, the ice is more susceptible to winds and currents which break up the ice or create rough ice, making certain travel routes unusable.
Winds are stronger and more frequent and seasonal wind directions is changing	The snow is also unusually compact and hard and does not pileup on poles, houses, or rocks like it did in the past. During freeze-up, strong winds slow the freezing process because the ice is constantly moving. Throughout the sea-ice season, strong winds also melt or break up sea ice. People usually avoid travelling when there are very strong winds.

Freezing process of the sea ice has changed	The freezing process has slowed and so it takes longer for the ice to be deemed safe enough to travel. In addition, the period of conditions that allow for ice formation has shortened. Whereas, the ice used to continue to grow for months, it now seems that it stops freezing and thickening in December or January. The ice does not freeze as well as it used to and this influences ice conditions for the rest of the year. For example, sometimes ice freezes up ‘foamy’ and this ice later becomes dangerous areas in the springtime.
Sea-ice season is shorter	The freezing period is generally weeks later and the melting period weeks earlier than in the past. Boating season extends into a time that used to be characterized by ice. For example, people used to be out on the ice seal hunting in October. Now, it is usually not possible to do that until December. Similarly, people used to be out hunting on the ice in the first weeks of July, this is rarely possible now.
Melting and break-up process of the sea ice has changed	There is a decline in melting stages. Normally all the snow on the ice would melt first, covering the ice with water and then drain into the ocean. Next, the ice would begin to melt, the water also draining away, leaving a thinner layer of ice. Finally the thin ice would continue to melt but also break up, making sea ice travel impossible. But now, the melt water does not really recede anywhere, it just melts, thereby quickening the melting process.
There is an overall thinning of ice	The ice is now only around 3 feet thick in places when it used to be 5 or 6 feet thick. This has caused an increase in dangerously thin areas and ice breaking up. Also, nearer to the floe edge, thinner ice is a danger as the ice may break off leaving hunters stranded.
Increased rough ice areas	Although the floe edge is a valuable hunting area, fewer trips are made there because of the increased rough ice. Increased rough ice is seen to be caused by a reduction in icebergs which help shield ice from the elements.
Increased concerns and questions about ice quality	Changing ice conditions are observed in seal holes which used to be big, clean, with no debris. Now, some are yellow with debris and dirt in them.
Changes in the occurrences of cracks	There was no consensus whether the change in ice conditions created more or fewer cracks. Some participants believed that now that the ice is thinner and there are fewer icebergs, there is more movement, and therefore pressure, of the ice. As a result, the ice tends to crack in some places where there never used to be any cracks. Other participants said that there has been a decrease in cracks, saying that some fiords used to have many cracks across them and now there is not even one. These people said that thicker ice, like they used to have, has increased rigidness which forces more cracks. Thinner ice, on the other hand, is more flexible and moves instead of cracking with strong currents.
Changes in the location of the floe edge	On top of hills, the floe edge used to be far off in the distance. Now, it is visibly closer to the shoreline.
Increased unpredictability in weather and ice conditions	Many of the indicators that were traditionally used to make predictions of the ice or weather were no longer accurate because things change too quickly today. This is different than years ago when participants described the weather as staying the same for weeks. At times, hunters are not sure whether an area is safe or not or whether a certain day will be good for travelling.

Because of the research focus on safety, most participants’ comments focussed on how environmental changes are affecting sea-ice features and the ability of hunters to be able

to safely access resources. The changing quality of ice is of growing concern in Qikiqtarjuaq. To begin with, the process of its formation and length of time the ice is formed is shorter. Freeze-up comes later, winter is shorter, and springtime comes earlier and is shorter.

*Everything seems to be in short time, everything seems to be in short time. Like short break-up and short freeze-up. Years ago it seems like it was for a long time, but its not like that anymore. So, you have to know and you have to watch because everything is getting shorter.*  
(Ceetie Natsiapik, original in Inuktitut)

Changes in one season can impact others. Therefore, a changing freezing or melting process has a cumulative affect on the weather and conditions for the following seasons.

*When the ice is gone from the strong winds, today the weather is the main factor. The wind is a lot stronger than it use to be. The summers are all different. They can be windy and they can hardly have winds, but today it seems to be a lot more windy. The summer can be not a good summer if the sea ice is gone too early. The elders used to say the summer will not be a good one when the winter was not good the year before. When the ice is gone too early the summer, it will not be a good summer, it can be a windy summer.*  
(Jacopie Newkingnak – original in Inuktitut)

Changes in the timing and characteristics of certain seasons not only influence future environmental characteristics but also influence the activities people in Qikiqtarjuaq do at certain times of year. As indicated in Table 1, activities such as hunting on the ice can no longer be associated with late October or early July.

As indicated in Table 1, it is not only one change, such as the change of seasons, that is affecting the quality of ice and weather predictability, but mutually influencing changes in wind, temperature, ocean characteristics, icebergs, and the seasons around Qikiqtarjuaq.

*So, the less icebergs you have here, you're going to see that (ice breaking up) more common. And the stronger the current, the faster ice melts from the bottom. At the same time, it's getting warmer; it's being affected from both sides. We just know from observation from years of what we see and the progress, the ice condition is not going to*

*get better. It's not freezing up like it used to, it freezes up so much later so the ice doesn't get thick like it used to.*

*(Billy Arnaquq – original in English)*

As Billy mentions, complex processes involving multiple environmental changes are affecting sea ice stability and thickness. A change in the quality of sea ice ultimately raises safety concerns for the people of Qikiqtarjuaq who use this platform as their means of accessing resources for the majority of the year.

*Years ago when they travelled, the ice was very hard and compact and it was good to travel on, the ice was really thick. But today the ice is like foamy and you really have to watch the ice and be observant.*

*(Ceetie Natsiapik – original in Inuktitut)*

*We try to be more aware these days. Back then we never really were aware of the ice becoming not safe to travel because, a long time ago, all the ice seemed to be the same and the dangers didn't come right away, it didn't used to get thin that fast. These days they have to be more aware of the ice getting thin earlier and faster.*

*(Leah Newkingnak – original in Inuktitut)*

As noted previously, the length of time that there is sea ice has decreased and conditions that are expected at certain times of year often occur unpredictably. In fact, the recent environmental changes have created a landscape that is increasingly challenging to predict no matter what the season. When asked in interviews about what indicators they watched for to make predictions of the ice or weather, participants frequently responded that the weather changes too quickly these days to make the type of predictions that were common in the past. As one participant commented, the weather used to be “at peace and calm, but it's not like that anymore” (Ceetie Natsiapik, original in Inuktitut).

*What I used to watch as a young man, as a young hunter, the dangers I used to watch out for are very different today... It's pretty unpredictable nowadays.*

*(Jukie Nookiguak, original in Inuktitut)*

A quick change in winds, for example, can rapidly change ice and travelling conditions.

This is different than years ago when participants described the weather as staying the

same for days. Because of the increased unpredictability in the weather and ice condition, Qikiqtarjarmiut believe that it is more dangerous to travel on their land than in the past.

Environmental change has also brought about safety concerns that were never considered in the past, such as tidal waves or hurricanes. With the global media, local people are aware of the extreme environmental events that are occurring elsewhere and the potential of these events to occur locally. Recently there was a tsunami scare in Qikiqtarjuaq from an earthquake in the Davis Strait.

*This issue is being brought out more and more, how to stay safe, how to be prepared, like planning. We now have heard that not just in this area, this will be happening, and what only occurs down south, like weather events, tidal waves, hurricanes, we've heard that this area is getting windier, like it's getting more dangerous. it seems to be obvious now that not only that area (south) will be like that, through what we know and, by tidal waves, well, I think about it a lot, like the waves are very high here in our community in the summer. If that hit us, we would definitely be in danger, well, what if what occurs down there arrived here? Or a hurricane?*

*(Levi Nutaralaaq – original Inuktitut)*

These types of events are a new environmental safety concern on the minds of many local people. With a changing climate, there are also reports of changes in abundance and health of species as well as new species emerging around Qikiqtarjuaq. For example, participants commented that they have more insects or different species of fish than existed in the area in the past. These types of changes, although not necessarily affecting people's safety, cause concern and unease amongst local people.

Although still acknowledging the unpredictable weather patterns of today, some participants dismissed the notion that the recent changes are new phenomena. Instead, some community members link recent changes to the natural fluctuations in the environment that have always occurred.

*I've been here for a long, long time. We have different seasons every year. Some years, it melts earlier. Some years, it freezes right away. Ever since I started remembering,*

*sometimes the ice moves, sometimes the ice would go early. So, I think that it's not really global warming. From the long, long years of experience, I can see it's not really that. Every year it's been different and I've seen every year as a different year... Inuit don't have all the tools and all the instruments that the meteorologists have. But, they just know about the knowledge, the Inuit way to live on the earth. If I ever went down south and started saying 'its too hot now, you guys aren't going to live' and I don't know about down south and I just go down there. What would they do? It's the same for the white man who comes up here and starts saying that they know about the weather changing. They don't really know what the Inuit know, and we don't know what the white man knows about the way of life down there.*  
(Levi Nutaralaaq – original in Inuktitut)

These perceptions may perhaps be linked to the fact that Inuit understand the environment as always changing and uncertain (Briggs, 1991). Inuit experts know that every season and every year is different and so the recent changes observed are taken in stride by some people who see them as another expression of the inherent unpredictability of the environment (Huntington & Fox, 2005). On the other hand, other community members did feel that this change is fundamentally different than the natural flux in the arctic environment and link this to the global environmental change that is frequently presented in media reports. Just as in other communities in Canada and worldwide, the nature of recent environmental change is debated in Qikiqtarjuaq.

Positions such as Levi's may also be a response to the frequent media or research reports that paint a doomsday-like scenario for Inuit communities in the face of environmental change. In fact, only a few months prior to my first field season in Qikiqtarjuaq, the Will Steger Foundation had visited Qikiqtarjuaq as part of a regional expedition to raise public awareness about global warming. Part of the Foundations' visit included a community meeting presenting what they believed was the future impact of global warming on the arctic environment and Inuit culture (Will Steger Foundation, 2007). I am unsure how much this visit, or other visits and media sources, influenced

participants comments. However, I did feel that participants in this research wanted to emphasize the fact that Inuit have always lived here and dealt with environmental changes, and will continue to do so in the future.

### ***5.3 Adaptation to Environmental Changes***

The people of Qikiqtarjuaq are adapting to changing conditions by modifying the means with which they reach areas, when they can travel, and the locations to which they travel. Participants also emphasized information-sharing between community members and the need for all community members to keep learning from their environment.

Participants often mentioned that they are now more limited in where they can safely travel. Nowadays, ice breaks up easier and certain locations have become more dangerous, forcing people to develop new means of reaching important areas. An example of this is on the main, most direct, route north from Qikiqtarjuaq. This area, between Qikiqtarjuaq and Kivitoo, is now prone to breaking up throughout the year. Because of this, local people, at times travel with both their boats and skidoos, carrying their boats on their skidoos to this area where they use their boat to cross and then go back to travelling by skidoo. Alternatively, some hunters may avoid that route and travel elsewhere. In fact, participants shared numerous examples of hunting or fishing locations previously used during certain seasons that are now inaccessible.

*There's a lot of affect this year in a lot of ways. Because we had snow very late in the season, we had a lot of slush. And that tends to keep people in certain areas where it's safe, where it's not slushy. If you go out there and get stuck, you know, you can't go very far. So this year when I travel south, I just had to follow this harden track, even though some of its slushy – So, it really affects a lot of way that people do things. And, even though people want to go hunt in certain places, they can't even go there because it's not safe to go there.*

*(Billy Arnaquq, original in English)*

Because of the changing ice quality and seasons, Qikiqtarjuarmiut are altering the time they visit certain areas or partake in certain activities. For example, a family who always celebrated their son's birthday on the ice in late spring now does so in the community because this time of the year is usually too dangerous to travel on the ice. This is not necessarily perceived as positive or negative in Qikiqtarjuaq but just a necessary adjustment in activities. However, an adjustment in location or amount of time spent out on the ice can have a big impact on people who rely on the ice for their livelihood.

*It's very important, the ice, because we use it a lot. A lot of us, we live off the land, that's what we do for a living. And it's making quite a difference. Like, a month or a couple months might not seem like much, but when you're a hunter, when you're anxious to get out, it makes a big difference. But, there's nothing we can do about the changes that we're having around here with the ice conditions.*  
(Jay Moesesie – original in English)

As Jay states, Qikiqtarjuarmiut know that these changes are unavoidable, and the best they can do is try and adapt to their changing environment. As one participant explained, 'it's the way it is now' (Anonymous Participant, original in English).

In the face of frequent change, Qikiqtarjuarmiut emphasized the importance of remaining knowledgeable about the changes people are encountering. As described in Chapter 4, communication is key to people's safety on the land and ice. The information sharing that occurs between experts ensures that everyone has a broader understanding of the hazards and the means to being safe in their environment. Environmental change, in effect, creates an environment that has more hazardous areas and is harder to predict. In this context, increased communication allows hunters to stay aware about new hazardous areas while also hearing different analyses with regards to future weather and conditions. However, this information exchange only occurs as long as hunters continue to travel and learn from their environment as they always have. Inuit knowledge, which is based on



generations of experience and learning from the environment, is seen as

Qikiqtarjuaq's strength in adapting to on-going changes.

*It is obvious we have to adapt to the changes as they are happening. We definitely have to become more aware of the climate change so we can learn from those changes, especially become more aware of the wildlife because that is where the most impact will be in our future. To me, it will impact our wildlife a lot more than to the humans because we are more adaptable to the changes we just have to become more aware of changes around us... Inuit still have very strong knowledge of our land because we still live on our land and of course we see all the changes that are happening around us.*

*(Paulosie Keyootak, original in Inuktitut)*

Qikiqtarjuaq believe that as long as they continue travelling and learning on their land as they always have, they will stay knowledgeable about their environment and be able to adapt to its changes.

## **5.4 Changes in Technology**

Technology change in Qikiqtarjuaq is perceived by some as a way for people to adapt to environmental and social changes. However, new technology also changes the way people travel on the land and ice. Inuit pride themselves as being adaptable people and new technology that increases ease or safety is eagerly incorporated into the way Inuit travel and use the land and ice. In Qikiqtarjuaq, most hunters are keen to test new technology for potential improvements, as indicated by the following story.

*We are still learning too. There's always new technology. For instance, we were using the dome tents (during the Sea Ice Workshop). They want to test out new technology and use technology and keep up with the world. But, they had no idea how to pitch the dome tent. They sort of had an idea, so they were putting the rocks, thinking it would be this big. So they were preparing the rocks. But, when they put the tent together, the rocks were in the wrong place, they were supposed to be bigger over there. So they were also learning the make of the tent, the new technology, trying to figure things out. So, the two of them trying to figure out; 'ok, how does this go, where does this go'. They were trying to help Lootie too. So there was a little bit of confusion there and frustration and new learning.*

*(Jukie Nookiguak – original in Inuktitut)*

Just as Jukie described his first time using a tent as a learning process characterized with confusion and frustration, the merits of technological changes seemed to be a matter of personal preference and often discussed with mixed emotions. For example, one of the technological changes that have influenced travel the most is the change from travelling with a dog team to travelling with a skidoo. This transportation change was mostly adopted decades ago as it allowed Inuit to travel far distances in a short period of time, facilitating hunting activities while living in settlements. Skidoos can, on the one hand, make travelling safer because with its speed, people can travel over thinner areas than they might have in the past. However, the benefit of the speed of a skidoo can only be maximized if people are aware that they are travelling in a dangerous area. Conversely, when travelling by dog team, dogs can sense dangerous ice and will notify the hunter by the way they move. In this sense, dogs were used as indicators for dangerous areas. Dog teams are a much slower way to travel but there is a greater sense of safety with this means of travel because dog teams will never break down. Alternatively, when travelling by skidoo, people must have knowledge about small engines. Also, some participants explained that dogs were able to find the way home even when hunters could no longer.

*Your snow machine's not guaranteed, it could choke up with the snow. When there's big drifting, if you're caught in the big drift, big snow. It's going to get stuck in snow, that's when the snow machine is going to stop. You cannot depend on the snow machine all the time to take you where you want to go. Dog team will. Friend of mine, told me a story not too long ago, that when his father was in Padloping, the wind caught them before they went home, a long way from home. They know where the wind come from, he had an idea, so he start to head home, because they don't have any gear to stay overnight because they were supposed to be gone for a day. His father left the dogs alone, they kept on going for four, five hours, not stop, just continue on and on. Finally dogs stop, you can't see anything, even twenty feet away from you can't see because blizzard, drifting snow, wind. Finally they stop, he said, and they looked up because I guess they had to put their head down because the strong wind blowing snow, finally they stopped and look out and there it is, the house. That's not the only one I hear it happen before. Dog teams are safer that way, they can still take you home when they know where they*

*are, and the snow machine won't, you have to depend on yourself not the snow machine, if your caught, you have to survive it, you have to be strong  
(Leslie Nukiwuak – original in English)*

In addition, many interview participants commented that this change in transportation has affected the way young Inuit learn how to travel. Fathers used to teach their son while travelling by dog team on the same sled. When travelling by skidoo, communication is limited. Also, because people are travelling at a faster speed, there is less opportunity for observation and learning of ice conditions.

*In the past, they were using dog teams and that's why they knew more about sea ice. But today people use snowmobiles and they don't notice the conditions of the ice anymore because snowmobiles travel a lot faster than the dog team.  
(Toomasie Newkingnak – original in Inuktitut)*

So, although there are clear benefits to using snowmobiles and the majority of Qikiqtarjuarmiut now rely on the technology, people continue to comment of what may have been lost with the transition in the means of transportation.

There are a number of other technological changes that have also influenced the way people travel. For example, in the face of environmental change, many participants commented on the use of the internet to help them predict weather and ice conditions. Frequently, for example, when doing the mapping portion of the interview, participants commented that we should check the Canadian Ice Service on the internet for the location of the floe edge. In addition, weather forecasts, although known to be not always accurate, are often consulted prior to hunters leaving town. Although few participants said that they used the technology, GPS systems are growing in popularity for Inuit hunters (Aporta & Higgs, 2005). One anonymous participant explained that although GPS can be a good tool to use for direction in a storm, it is not able to gauge the ice conditions or identify hazards in your path. Therefore, there is a danger in using this

technology without Inuit knowledge. Despite minimal usage in Qikiqtarjuaq, GPS use may continue to increase with the younger generation and has the potential to alter the way in which people travel (Aporta & Higgs, 2005).

As discussed in the previous chapter, radios play a major role in information sharing amongst family members and the broader community. With the increased communication that the radio allows, people are able to remain in contact with other hunters, their families, and, if needed, the local Search and Rescue organization. Participants commented that hunters never used to hear so much from each other and that this increased communication is a source of knowledge and therefore safety for all community members. Satellite phones, another communication technology, are now provided by the hamlet to community members, however, at the time of this research very few participants said that they use them. Nevertheless, similar to GPS, their usage may grow with the next generation as this technology provides another means for hunters to ensure communication in the case of unforeseen circumstances.

Technology changes were primarily viewed positively by Qikiqtarjuarmiut, however, there remained concerns about how new technology may change Inuit knowledge about the environment. It was therefore emphasized that no matter the benefits of new technology or equipment, there will always be a need for Inuit knowledge.

*Because elders have experienced their knowledge, they are the ones that have the most experience in reading weather, reading clouds. We have all sorts of stimuli for weather predictions, we can read the weather prediction on the computer, we can hear it on the news, elders or people like to talk on radio and they always ask what's the weather going to be like if we want to travel. That way they get predictions but the best way to predict weather is to read the clouds, read the weather, because sometimes weather predictions are not always accurate.  
(Jukie Nookiguak - original in Inuktitut)*

Jukie's comments illustrate that Inuit can benefit from a variety of equipment. However, because conditions are always changing, the safest way is to have the knowledge to read the environment and predict weather conditions. What allows people to be the safest is the incorporation of new technology into the Inuit knowledge system that has proven effective for generations.

### ***5.5 Changes in Education***

It is not only the environment that, as one participant worded it, is “in a hurry to change” (Anonymous Participant, original in English). Local people also commented on the changes occurring on a social level that alter the way community members' travel. Changes to Inuit safety culture is not new. For example, many people commented that in the past, people would not be concerned if a hunter was late returning from a hunting trip, even if the hunter was weeks late. However, today people become concerned if a hunter does not return as planned. So, Inuit understandings of danger and safety are not static, but are always evolving in response to changing realities. Life in Qikiqtarjuaq has changed drastically within the last few decades and these have influenced safety issues in a multitude of ways. Although the changes experienced are much too complex to be covered by this research, the change in the way Inuit learn was the primary concern with regards to safety in Qikiqtarjuaq at the time of this research.

Many participants expressed concern about the decline in hunting practices and environmental knowledge within their community. This has obvious safety implications as less experience on the land means less knowledge about dangers and how to ensure one's safety. One of the indicators of this is the loss of environmental terminology

amongst Qikiqtarjuaq youth. This may be because the decline in time these people spend on the land and because younger people are immersed in two worlds both influencing everyday language. Without the detailed knowledge that comes from experiencing the land and ice, people may unknowingly put themselves into danger when they do travel outside of the community. Accordingly, participants commented that some community members now travel in unsafe areas or that they are not approaching travel with the required level of preparedness. For example, participants indicated that some people neglect to pack extra supplies or warm clothes in case their plans change.

*Yes, there is a big reason to worry nowadays, like, how, they don't use clothing that is too warm but go far quickly with these fast transports they have now, boats or skidoos. Some of them travel now even in the middle of winter without warm clothing or they will get cold feet, this is no good, it's not the right way. We don't want them to do that, but maybe they haven't heard or they've forgotten, they tend to do that now.  
(Levi Nutaralaaq, original in Inuktitut)*

Without the proper equipment, an inconvenient situation, like the ice breaking up, can be turned into a very dangerous situation if people are forced to camp without the proper supplies.

These concerns extend beyond a few individuals and point to a the larger issue of a changing cultural learning system where today's youth no longer have the opportunity to learn as Inuit previously did. This ultimately impacts their ability to ensure their own safety and the safety of their families.

*We cannot put the blame of safety issues only to climate changing because some of the avoidable deaths on land and ice have nothing to do with the climate change, it is due to lack of education and that is the most cause of any accidents. We are now trying to make educational resource because our youth lack education and they are not asking enough questions. It is only when they are small children we take them along when we go out on the land and once they become older they get left behind and from there they start to lose knowledge about being on the land. They can even travel on dangerous routes because they lack knowledge of the conditions of the same places we were warned not to travel*

*on. The safety concern is not only due to climate change but most of the blame is the lack of educating our youth today.  
(Zebedee Qappik, original in Inuktitut)*

As Zebedee mentions, the larger threat to community members' safety may not be environmental change but the change in the process by which people learn about their environment. Young people in the community do not spend as much time learning on the land as youth have done in the past. There are many reasons for this, including the fact that many of their family members are no longer travelling frequently and therefore cannot bring them out on the land and ice.

*Most important safety issues is like, the only way you learn these safety issues is you have to know someone who knows the safety issues out there. You can't just go out there and learn on your own really, you put yourself in danger that way.  
(Jay Moesesie, original in English)*

Children are also now expected to be in school while parents are also busy with their own activities, often spending their days working in the community instead of out on the land and ice. Without having an opportunity to travel on the land and ice on a regular basis, young Inuit are unlikely to learn how to be safe in this environment.

Some participants commented that lack knowledge about the environment can be a source of shame for some people which can compound people's obstacles to learning.

*You have to look at things in long term instead of just looking at the situation as it is. I know there's a lot of young people out there who have a dream, want to know, want to accomplish something, want to receive the knowledge. I remember years ago this man, he no longer lives here, he became a teacher and he was my age. His father worked at the DEW line and because he works at the DEW line, he never goes out hunting or very occasionally when he's free, he does but, he works. This man grew up in that environment; I don't think he ever went out with his father. He was young, he was over 20 years old, he didn't know how to skin a seal, he didn't know how to skin a caribou or how to do all these things. He was in a place of shame for my own culture. But, I decided to help him get over that hurdle, the knowledge that he did not receive at his age. So, I took him out a few times, tried to help him. It came to the point, I was not critical of who he is, of not knowing his own culture at his age. The biggest problem that I think I've seen is that some people are not educated in our culture in a lot of ways, many of the*

*young people. And some of the older people just become critical because they don't know and that becomes a big barrier for them to advance. So, there are many obstacles and proper understanding that needs to be developed, even in our older people. Because a lot of them don't have the understanding about the modern way of thinking. So, the way they think is totally different than the way we think. And, that is the biggest obstacle, when I change your thinking, I can change the way you do things. This is one issue that you have to try and persuade people. But, in our society, you have to look at things in long term. That's the only way that you can provide proper security, proper safety information to the people. Not on the surface but beyond the surface. And that's where people will receive what they need to receive and know what they need to know. (Billy Arnaquq, original in English)*

As alluded to in Billy's story, the rapid changes in Inuit society have created a divide between the older and younger generations. In Inuit society, it was common for young children and adults to be verbally criticized or teased if they were unable to do certain tasks by a certain age. In a way, this practice encouraged people to learn the required knowledge and skills. However, in the contemporary context in which some youth may have limited opportunity to learn, this practice can bring shame and compound the obstacles to learning. Some participants felt that elders and other experts should initiate connections with younger people as it can be intimidating for youth to ask older people questions, a practice that was traditionally not common in Inuit society. However, others were frustrated that youth were not showing enough interest in learning; not asking to be taken out on the land or asking questions to their elders.

There are many other obstacles to having the opportunity to learn on the land as was done in the past. Along with being influenced by Inuit culture and knowledge, young Inuit also learn from non-Inuit culture and knowledge through institutions such as schools. People were concerned that today's youth have been trained to learn in a different setting. As one participant worded it, "youth believe in written documents now, they don't file things in their brains" (Leah Newkingnak, original in Inuktitut). In



addition, various sources of global media are now a regular part of life in the north. Some participants felt that because of these information sources, youth now develop new interests that do not always include going hunting and camping. As one participant explained it, many young people these days are “community-based teenagers” (Anonymous Participant, original in English).

In Qikiqtarjuaq, there exist a number of sources of information and influences in daily life. Participants mentioned many reasons that may be contributing to the fact that youth are not learning about their environment as they did in the past. Although saddened by these changes, they were inspired to adapt to the new realities.

### ***5.6 Adapting to Educational changes***

To meet the changing realities of their community and youth, participants were eager to find ways to adapt teaching methods about the environment and safety. For example, there was a recognized importance of documenting Inuit knowledge that has traditionally been preserved and maintained orally and in practice.

*I want to say that this knowledge of our ancestors was gained by listening and observing, that is how they learnt their knowledge and it is unfortunate we had no means to make written documents. It is so vital we start to record them now, all the knowledge we know from our last generation, and include them in the school's curriculum so they will become more believable and bring pride.*

*(Jukie Nookiguak - original in Inuktitut)*

In addition to new types of documentation, it was recognized by some participants that different teaching strategies should be developed. Many believed that safety information should be taught in school. Classes or programs in which youth are taken out on the land and ice is one thing that participants thought would be particularly useful. This type of program is already done once a year by the school. However, there is a need for more of

these types of learning initiatives, perhaps organized by other institutions so as to connect with all youth, in or out of school. In addition, participants emphasized that it should be Inuit teachers and experts teaching this knowledge, not school teachers trained in a different cultural setting.

*My concern is that Inuit are not recognized enough to be teaching those programs using our traditional language. If we truly want to see successful curriculum, our Government will have to recognize that we do have the knowledge first hand to deliver those courses. But, at the moment, we have no recognition to teach in schools. If we are planning to go ahead and start creating knowledge curriculums, we also have to get recognized as traditional teachers. We do have teachers now that teach our children and yet they are not qualified to teach some subjects. This is a very important subject we have to discuss and to keep in mind because we will try to provide the best possible education resources and it should also be delivered by people who have first hand knowledge.  
(Zebedee Qaapik – original in Inuktitut)*

Having traditional teachers teach these programs would ensure that the material is presented properly, while also providing recognition of the depth of knowledge Inuit experts have. Placing equal weight on Inuit knowledge as is placed on the knowledge taught in school was also seen as a way to inspire pride in the younger generation about the depth and importance of the knowledge held by their people. As was mentioned in Chapter 4, being on the land is seen as important to one's identity and well-being. Therefore, these types of learning programs were not only seen as a way to pass on skills but to also help youth develop their connection with the environment, instil pride, and 'relax in their own environment' (Anonymous Participant, original in English). What is integral to the value of these programs is their continuation. One outing cannot cover everything; youth need to have a means to regularly participate in these types of learning events.

The culture and lifestyle of the people of Qikiqtarjuaq is constantly in flux. Although the changes experienced within the last generation has perhaps been more

dramatic than had previously been experienced, Qikiqtarjuarmiut are looking forward. Participants seemed to embrace change while also wanting to remain connected to the past. One anonymous participant explained that she feels gaps between the elders and her generation and between her generation and her children. She has been exposed to both worlds and as she described it, she feels like a sandwich. She explained that this position can be beneficial because Inuit are adaptable people and they can use the best from both cultures, Inuit and non-Inuit (Anonymous Participant, original in English).

This message was reiterated by other community members.

*We did not have any material for documenting any knowledge because there was no known paper or writing tools. We had no knowledge of any of those in the arctic at that time. Instead, people learned by storing information in their heads and hearts. We still have some of that knowledge stored within us today... I would like to say that both Inuit and Qadlunaat (non-Inuit) have wonderful knowledges and I know for sure Qadlunaat knowledge is also very unique, as much as Inuit knowledge. Both of those wonderful knowledges have to be combined and start to work together. It is important we start to work together with combined knowledges.  
(Leah Kuniliuise – original in Inuktitut)*

Despite the sadness and concern surrounding the changing learning opportunities for youth, Qikiqtarjuarmiut look forward to finding new ways to make their youth stronger.

## **5.7 Discussion**

Being able to predict and understand weather and travel conditions is a key to a hunter's survival. Without this ability, Inuit become strangers in their own land (Berkes, 2002). In very different ways, both global environmental change and the social change discussed here are undermining the ability of people in Qikiqtarjuaq to predict and understand their environment, creating severe consequences to people's safety.

Similar to a number of accounts emerging from across the Canadian north, complex environmental changes are being observed and causing an adjustment in the way

the land and ice is used in and around Qikiqtarjuaq. Over the last two decades in particular, changes have been unprecedented in many parts of the north (Nichols et al., 2004). In Qikiqtarjuaq, ice quality, seasons, and weather patterns are changing and becoming increasingly unpredictable. It is not only one element, for example, the warming of temperatures, that has been altered. Instead, there are a number of mutually influencing environmental changes that create a transformation in the landscape. What is emphasized by research participants is the complex nature of these changes from the local perspective. Qikiqtarjuarmiut, as with all Inuit communities, tell a unique and important story of environmental change that reflects their history and environment (Fox, 2002). Nevertheless the observations and concerns in Qikiqtarjuaq with regards to environmental change do reflect similar observations in other parts of the Canadian north (Huntington & Fox, 2004; Krupnik & Jolly 2002; McDonald et al., 1997).

Most participants in this research were eager to document and communicate their firsthand experiences with environmental change as this was seen as an important step for adaptation. In addition, because of the detailed knowledge present at the local scale, Inuit knowledge may be integral to scientists' understandings of this global phenomenon. Local accounts and knowledge allow for a more complete understanding of environmental change by more accurately representing uncertainty and small-scale perpetuations of a global phenomenon (Berkes, 2002). In addition, this knowledge can better represent the most important human and ecological impacts of environmental change that climate change models cannot, as they deal primarily with mean change (Berkes, 2002). The Inuit of Qikiqtarjuaq are also eager to learn about scientific findings concerning environmental phenomena. Developing a shared understanding, particularly

in a cross-cultural context, of the nature and scale of environmental change is integral to determining the required responses and adaptations (Huntington, 2002).

In addition to environmental changes observed in and around Qikiqtarjuaq, changes are simultaneously occurring on a social level. Technology use is changing the way people travel. However, the greatest concern expressed by research participants relate to changes in the learning process of young Qikiqtarjuarmiut. The difference in learning systems, constraints on time due to formal school hours and wage economy employment, financial requirements associated with subsistence activities, and change in overall youth culture has resulted in limited opportunities for Inuit youth across the arctic to learn the skills they need to be safe (Condon et al., 1995; Schlag, 2004; Takano, 2005). Finding a way to live well within two cultural contexts is a common challenge amongst Aboriginal communities in Canada and globally. Qikiqtarjuaq elders emphasized that the incredible strength in their people and knowledge is what has allowed them to thrive through various historical changes. They also recognize that there is value in scientific knowledge and that their community should be relying on both knowledge systems to address the current and future challenges. A similar resolve was documented amongst the Tlicho in the Northwest Territories as they struggle to allow for ongoing change while also ensuring the survival of their people and, consequently, their land. Tlicho elders hope that by embracing both knowledge systems, the new generation will become ‘strong like two people’ (Legat, 2007, p. 22).

Although it is important to adequately present and discuss the environmental and social change now being experienced by Qikiqtarjuaq, it is also important to stress that environments and cultures are always in flux. Indigenous societies, in particular, have

been repeatedly presented by outsiders as societies that are doomed and dying (Oosten, 2005). The notion that they are a culture in decline is one that is strongly resisted by people in Qikiqtarjuaq. Arctic people are familiar with the highly variable characteristics of their environment and know that, given this uncertainty, they must remain flexible (Huntington & Fox, 2005). In Qikiqtarjuaq, change is understood as neither all positive nor negative, but a part of life that people must address. As was exclaimed in a workshop on this topic organized by Nunavut Tunngavik Inc. (NTI), “The question we should be asking ourselves include what will we do next? How can we adapt and survive?” (Joe Arragutainaq cited in NTI, 2005). Some argue that given the severity and rate of climate change, there may be limited options for adaptation in the Canadian arctic (Berkes & Jolly, 2001; Newton et al., 2005; Thorpe, 2000). Nevertheless, across the north, communities, researchers, and governments are attempting to answer Mr. Arragutainaq’s question. In Nunavik, for example, the regional government, researchers, and community experts have collaborated to develop a monitoring system that links scientific and Inuit knowledge (Tremblay et al., in press; Tremblay et al., 2006). The *Nunavik Winter Safe Practice Guide for Land and Ice Environments* helps ensure travellers’ safety with travel guidelines and suggestions for preparation and observation (Kativik Regional Government, 2008). In Igloolik, a community group has developed a land-skills course to support youth who do not have the opportunity to experience this environment on a regular basis. On-the-land courses are held four times a year. These promote the interaction of community experts and youth, and provide a means to transmit knowledge, survival skills, and values to young people (Takano, 2005). In the Inuvialuit Settlement Region in Northwest Territories, hunters are changing the supplies they take travelling,

how frequently they go hunting or return to the community during hunting trips, finding new routes and means to reach important areas, and creating formalized meat-sharing programs (Nickels et al., 2002). In Igloolik and Arctic Bay, researchers, community members, and leaders worked collaboratively to identify existing policies within the Government of Nunavut's jurisdiction that could be expanded and modified to increase community adaptation capabilities by supporting existing social networks and hunter flexibility. The authors argue that this would not only reduce vulnerability in the face of environmental change but also strengthen the community's knowledge system and well-being (Ford et al., 2007). These provide only a few examples of the type of adaptation initiatives underway in Inuit communities.

In Qikiqtarjuaq, adaptation has commenced as people adjust the when, where, and how of their travel. Community experts emphasized that the most important means of adaptation is to continue travelling and learning in the environment. In addition, the importance of on-going information exchange amongst community members was stressed. Participants were also keen to see new on-the-land programs developed as well as documentation of Inuit knowledge for future generations. Specifically, through this research, the Inuit Knowledge Working Group decided to focus efforts on producing audiocasts regarding safety issues, a terminology poster focused on sea ice processes and hazards, and the map presented at the beginning of this chapter. However, the Working Group has high ambitions for future production of educational resources. As one member put it; "it's just the beginning" (Leesee Mary Kakee, original in Inuktitut).

Changes on the social level are occurring simultaneously with dramatic changes in the environment. Ford et al., (2007) argue that providing resources, both financial and

knowledge-based, at the community level will strengthen community relationships, allow hunters to continue their livelihoods, and allow youth to become involved in on-the-land activities. The same strategies that address challenges associated with social change will also address the increased stresses imposed by environmental change (Ford et al., 2007). Qikiqtarjuarmiut are also very aware that the forces of change are mutually-influencing and that the key to their ability to adapt to both environmental and social change is to ensure that community members continue to travel and learn in their environment. Educational changes and the growing gap between the elders and youth are seen as the greatest challenges in realizing this objective. For these reasons, the community is trying to develop new opportunities, through formal programs or educational material, for youth to become and stay knowledgeable in the face of increased external stresses caused by environmental change. These initiatives could be greatly improved with increased collaboration amongst researchers, territorial and community-based institutions, and community members as a whole. Nevertheless, Qikiqtarjuarmiut remain confident in their ability to continue on in the face of ongoing change. In fact, Inuit knowledge and culture is seen as their greatest strength.

*Inuit, in Inuit culture, they learn by doing and experiencing life. When I was a youth, I learned from my parents. I learned my culture. Inuit are the best people to live in the arctic because they're conditioned to live in the cold. They're in the best condition to survive. They're the best people who know the land, their area. And knowing the land and culture is our strength. This is what outsiders have to learn.*  
(Lootie Kakudluk – original in Inuktitut)

Qikiqtarjuarmiut know that they will always live and travel in their environment and are confident they will continue to adapt, survive, and thrive as Inuit people in the future as they have in the past.



## ***5.8 Chapter Summary***

Life in the arctic is constantly in flux, both environmentally and socially. However, recent years have seen faster changes at both the environmental and social levels. In Qikiqtarjuaq, both forces of change threaten to challenge Inuit knowledge and therefore survival in their environment. The wealth of local observations provides a unique glimpse into how these changes are being perceived and experienced at the community level.

Elders and hunters in Qikiqtarjuaq are observing complex environmental changes that make their landscape increasingly uncertain and hazardous to travel. Simultaneously, participants expressed regret and sadness that some youth do not have the same opportunities to learn on the land as they did. However, Qikiqtarjuarmiut aspire to adapt teaching strategies to meet new learning realities of youth. People were keen to assess new knowledge, skills, technology, and institutional processes to help them adapt while remaining connected to their cultural knowledge that has allowed them to thrive for generations. Research participants emphasized that, to remain adaptable in the current context of change, Inuit knowledge needs to remain strong in both the minds and hearts of local people.

The following Chapter VI explains how Inuit safety culture may be brought into Parks Canada safety management framework. Specifically, Qikiqtarjuarmiut perceptions of Auyuittuq National Park and safety issues within this area are discussed. Parks Canada approach to safety issues is then compared with Inuit safety culture. Finally recommendations on how to improve communication and collaboration between the local parks office and the community of Qikiqtarjuaq are provided.



## **Chapter VI: Improving Parks Canada Practices with Inuit Safety Culture**

In 1976, Auyuittuq National Park Reserve, covering an area of 13 089 km<sup>2</sup>, was established. The area was formally designated as Auyuittuq National Park (referred to as Auyuittuq or the park) in 2001 as a representative of the Northern Davis Strait Natural Region (Parks Canada, Nunavut Field Unit, 2008). The area is characterized by mountains, glaciers, valleys, fiords, and the Penny Ice Cap, which covers almost a third of the park. Auyuittuq is the most visited park in Nunavut, receiving around 400 to 600 visitors a year. This number continues to grow, primarily influenced by an increase in visitors that arrive by cruise ships and visit the park for a single day. Non-cruise ship visitors largely engage in multi-day trips to the park, with the most frequent length of stay being eight days (Parks Canada, Nunavut Field Unit, 2008). The primary activities of visitors are hiking, skiing/snowshoeing, and climbing. Potential hazards involved with

those activities in the park include weather, avalanches, river crossings, sea ice travel, and polar bears (Parks Canada, Nunavut Field Unit, 2008). Apart from the specific activities, tourist expectations and final experiences vary from adventure to spiritual growth to greater understanding of the region. Assessments of tourist experiences in Auyuittuq National Park have found that the reasons that make travelling in Auyuittuq potentially dangerous, the remoteness and hazards such as river crossing, are also the reasons that attract tourists to the area (McCool et al., 2007; Stewart et al., 2005). Interaction with local Inuit is another dimension of positive tourist experiences in Auyuittuq (McCool et al., 2007). However, tourism development in northern Canada has often been a sensitive issue in Inuit communities as it has frequently been linked with southern controlled departments and practices that do not reflect northern realities. In addition, the image of the north that has historically been portrayed by tourism organizations, an empty wilderness, or the people that reside there, as modern remnants of a historical people, is counter to Inuit understandings of themselves and their land (O'Hara, 2001). Therefore, educating tourists regarding cultural differences and to be respectful of Inuit knowledge remains an important issue in northern communities (Mason, 1997). When Auyuittuq was established in 1972, local people were wary about how the park would impact their communities. Lawson (1987) reports that the concept of the park was foreign to local Inuit and, at least in Pangnirtung, was frequently referred to as "the place where whiteman comes to play" (p.1). Even today, there remain misunderstandings and mistrust about Parks Canada's role and responsibilities. Nevertheless, Auyuittuq brings employment opportunities and economic benefits to

outfitters, stores, hotels, and artists in both Pangnirtung and Qikiqtarjuaq (O'Hara, 2001; Seale & Anilniliak, 1993).

Historically, Parks Canada policies have been seen as externally derived impositions on Aboriginal traditional territories leading to protected areas that do not fully reflect the social and ecological environment or inspire local support (McNamee, 1993). Nevertheless, Aboriginal peoples' assertion of their knowledge and rights has been growing in all aspects of environmental management and community development. At the same time as Aboriginal communities become more vocal in their rights; their values and knowledge are increasingly becoming recognized as an integral component in sustainable resource management (Fast & Berkes, 1994). In Nunavut, the IIBA and the Nunavut Land Claims Agreement provide guidance over how National Parks should be co-operatively managed, including Auyittuq. These agreements reaffirm that Inuit rights are maintained in and around the park area (Parks Canada and Qikiqtani Inuit Association, 1999). Accordingly, the Inuit of Qikiqtarjuaq and Pangnirtung continue to use the area for hunting and fishing, as a travel route between the two communities, and to promote local tourism activities. These agreements also provide the context for the creation of Joint Park Management Committees (JPMC) for each Nunavut National Park. These committees are composed of six representatives, half of whom are appointed by the Qikiqtani Inuit Association and the other appointed by the federal Minister of the Environment. A JPMC has the mandate to influence decision-making on all aspects of park management from park planning and management to promoting local economic opportunities to visitor use and employee training. The basis for decision-making in these committees is both western science and Inuit knowledge and materials are available

in both Inuktitut and English (Parks Canada and Qikiqtani Inuit Association, 1999). Because of the distances that separate JPMC members, they often work through numerous teleconferences and have two annual meetings in communities or on the land, to develop shared knowledge and understandings (Manseau et al., 2005). Some of the challenges involved in this process have been around conflicts between the two knowledge systems, issues about language translation, and the need for better communication (Gertsch, Dodds, Manseau, & Amagoalik, 2005). Nevertheless, a high level of cooperation in management is occurring within the Quttirnapaq JPMC, building trust, shared ownership over decision-making, and broader support from both Parks Canada and local communities (Gertsch et al., 2005). Alternatively, true integration of Inuit knowledge into parks management continues to be a challenge within the Sirmilik JPMC (Gagnon, 2007)

In the previous chapters, how the people of Qikiqtarjuaq perceive and ensure safety for themselves when travelling in the arctic environment was discussed. Here, the focus switches to safety issues regarding the presence of Auyuittuq National Park. To begin with, the relationship between Parks Canada and the community of Qikiqtarjuaq is examined to provide context for safety practices and concerns. This is followed by a review of how Parks Canada and then how the participants of this research assess safety issues in Auyuittuq. Finally, the primary recommendation provided by the community, to increase communication and collaboration, is discussed.

### ***6.1 Parks Canada's relationship with the community***

The relationship between Parks Canada and the people of Qikiqtarjuaq remains strained. This is primarily due to misguided promises made when Auyuittuq was

established, the lack of involvement of local people and information-sharing since its inception, and the fact that the foundational concept of Auyuittuq is resisted in Qikiqtarjuaq.

The means by which Auyuittuq National Park was created remains the context for contemporary relationships between the community and Parks Canada. Many participants believed that the concept that was presented and understood locally at the time the park was created does not align with the current realities of the park. For example, people remember parks representatives promising a large number of employment opportunities as well as economic gain for the community through increased tourism. In reality, limited employment opportunities exist in Qikiqtarjuaq. Although there are additional economic benefits from the tourism industry, these remain minimal given the small number of tourists that come to town.

Qikiqtarjuarmiut frequently commented on the difference between Parks Canada offices in their town and that in Pangnirtung. Although people from Pangnirtung might raise equal concerns about employment and economic benefit (Seale & Anilniliak, 2003) and may feel that their parks office does not reflect or welcome community members (Kulchyski, 2001), this community still seems to have been favoured in the eyes of many Qikiqtarjuarmiut. Whereas the Pangnirtung office has five year-round positions and four seasonal positions, Qikiqtarjuaq only has one year-round employee (Seale & Anilniliak, 2003). Also, the Pangnirtung office is a relatively new building and significantly larger than the trailer used in Qikiqtarjuaq, which used to be the community jail. A participant explained to me that what is visible to community members is a run-down building that seems to ‘tell us we’re poor in Qikiqtarjuaq’ (Anonymous Participant, original in

Inuktitut). In essence, the big promises used to establish the park over 30 years ago have not yet been realized.

Many participants commented that since this original consultation process, there have been few initiatives for community members to learn about Parks Canada's activities or become involved in park management. These perspectives exist despite the creation of Auyuittuq's JPMC, various other consultation initiatives, and Parks Canada's practice of providing updates to community institutions about its procedures and practices. However, information about these initiatives does not seem to reach the average person in Qikiqtarjuaq. For example, a number of participants were curious to know what kind of activities tourists did in the park or why they want to come to this area. If Parks Canada improved its communication about the different programs and visitor activities, this may be one easy step to improving the relationship with the community. Another example of local misunderstanding of Parks Canada came when the Coordinator of the Inuit Knowledge Project went on the local radio to describe the project and its structure, including the role of the Auyuittuq Working Group, made up primarily of elders. In the following weeks, when contacting potential interviewees, there were a number of questions about that radio presentation. As one anonymous participant mentioned; "I didn't understand how parks had anything to do with elders. When I think of parks, I think tourists" (Anonymous Participant – original in English). Locally, this project was seen as the first time that parks had showed an interest in Inuit knowledge. It was clear that local people had little knowledge about Parks Canada's day-to-day activities or initiatives to involve Inuit people and their knowledge.

Another foundational challenge to the management of Auyuittuq National Park is the fact that the concept of a protected areas system runs counter to the way Inuit understand the environment. In particular, as Leah explains, Inuit traditionally never had boundaries on their land.

*Before Qadlunaat and parks came along, we had no clue there would be park boundary one day on Inuit land, we had absolutely no clue. We used to live wherever we pleased, absolutely anywhere we pleased. There were no restrictions at that time, we would go everywhere. But today there is restricted land because it is now owned by the park. This has changed who we are as Inuit. We were able to travel anywhere on the land before it became as a park, we were free to travel and live on the land anywhere on what we call now the park. We can still go there freely but it is not the same as the land we once knew without any restrictions, we no longer feel comfortable on the land. We have to make sure we keep it clean and we can't even leave anything behind because it is now owned by Parks Canada. We used to have a cabin inland because that is the way we like to live, we used to camp wherever we like before we had a boundary of the park. We used to live freely on that land as part of our own without any worries, we used to live there, but now it is owned by the park and we do worry staying there. Sometimes we worry the whole time we are in the park boundary. We make sure we take extra care when we are on the park boundary as if it has never been our land before. That is how the park has changed the way we are as Inuit.*

*(Leah Newknignak - original in Inuktitut)*

Parks Canada exerts its presence and boundaries through its practices. For example, local Search and Rescue activities have to work in collaboration with Parks Canada in the case of emergencies within its boundaries.

*Search and Rescue have a policy and guidelines that they have to follow. And whenever someone has to be rescued within parks' boundaries, they have to work with Parks Canada. They cannot go on their own, they have to work with Parks Canada first. Whenever they talk together, they will go out, they have to get approval from them if it's within the parks boundaries... We would like to be able to go ahead without parks permission if this person is from here or from Nunavut, who is not a tourist, who's just using the park.*

*(Loasie Audlakiak – original in Inuktitut)*

Having to get permission from parks before going to search for a fellow community member is seen as unnecessary and time-consuming considering that Search and Rescue has standard procedures that it follows for emergencies everywhere else but within parks



boundaries. So although local people retain their rights within Auyuittuq, Parks Canada imposes another layer of jurisdiction and displaces local control over the area.

Parks Canada's official mandate is to "protect and present nationally significant examples of Canada's natural and cultural heritage and foster public understanding, appreciation and enjoyment in ways that ensure their ecological and commemorative integrity for present and future generations" (Parks Canada, 2002). However, participants' perceptions of Auyuittuq National Park did not match this mandate. For one thing, many people alluded to the belief that areas outside park boundaries are better protected because they remain in control and under the management system of local Inuit. Auyuittuq National Park was not seen locally as a tool to protect Inuit land and their way of life. Although it does have a broader mandate, Qikiqtarjuarmiut primarily associate Parks Canada with tourism activities.

Not all participants mentioned the issues that are presented here. Some, particularly those of the younger generation, did not seem as concerned with how Parks Canada does business. Generally, it was perceived that the institution had little impact on their day-to-day lives. However, the older generation who were around when Auyuittuq National Park was established or those that interacted with Parks Canada through their employment, such as outfitters or those working for the Hamlet, did raise a number of broader issues that affect all interactions between parks and the community. It was clear that the history of how the park came to be and its actions since remain in the minds of local people, therefore influencing all institutional initiatives.

## ***6.2 Auyuittuq National Park's Safety practices***

Auyuittuq National Park's safety practices are developed through two documents; the *Nunavut Public Safety Plan* (Quest Research and Consulting Inc., 1998), the only public safety planning document used by the entire Nunavut Field Unit, and *The Auyuittuq Risk Assessment*. The *Nunavut Public Safety Plan* is a broader document that outlines risk assessments, service descriptions, and service assessments for Nunavut National Parks. In short, the Plan interprets the Visitor Risk Management process and emphasises financial accountability (Quest Research and Consulting Inc., 1998). The *Auyuittuq Risk Assessment* is created to “identify and assess hazards that both visitors and non-visitors may encounter while in or en route to Auyuittuq National Park” (Parks Canada, Nunavut Field Unit, 2008, p.2). This document analyses past incidents in an attempt to highlight specific areas and activities that have been hazardous, or the sources of risk, for both visitors and non-visitors to the area. The document also reviews information received by both visitors and non-visitors about their use of the area and provides recommendations. Both documents are consistent with the Inuit Impact and Benefit Agreement (IIBA). In particular, Article 8 of the IIBA states that the JPMC for each park must be advised of the public safety planning processes and be allowed to provide advice (Parks Canada and Qikiqtani Inuit Association, 1999).

Out of 167 incidents recorded to date, 55% involved visitors, those that pay park entrance fees and are generally there for recreational reasons, and 40% involved non-visitors, which include Inuit beneficiaries, outfitters, parks staff, and researchers. The remaining 5% of incidents involve damage to property and do not involve people. Incidents involving visitors were primarily associated with hiking activities (71%), skiing

(18%), and climbing (10%) while non-visitor incidents were primarily associated with snowmobiling (31%), boating (22%), traditional land use (15%), and hiking (15%). 45% of these non-visitor incidents involved Inuit beneficiaries, 36% involved Parks Canada staff, and 15% involved outfitters. The risk assessment document also identifies the hazards involved in these incidents, with vehicle use associated with the greatest number of incidents. A smaller number of incidents were associated with the following hazards: polar bears, weather conditions, slipping and falling, river crossings, sea ice related, avalanches, and rock falls. The consequences of these incidents were that people returned later than expected, were injured, were hungry due to a shortage of supplies, suffered exposure to the elements, or were deceased. Through the analysis of this incident data, Parks Canada identified some 'hot-spots' where the majority of incidents occurred, overwhelmingly in Akshayuk Pass (Parks Canada, Nunavut Field Unit, 2008). The Auyuittuq Risk Assessment also includes information derived from a consultation process that involved interviews with 6 people in Qikiqtarjuaq and 4 in Pangnirtung along with informal conversations with a variety of local organizations. This allowed documentation of areas of concern, primarily the locations of thin ice, leads, and strong winds (Parks Canada, Nunavut Field Unit, 2008). With regards to polar bear safety, past incidents and 'hot-spots' for polar bear encounters are documented in Auyuittuq's Polar Bear Operational Safety Plan (Parks Canada, Nunavut Field Unit, 1997).

The document concludes that both visitors and non-visitors that travel in and around Auyuittuq National Park may experience a variety of hazards which may increase in severity relative to the isolation of the area. A wide range of mitigation options for dealing with hazards are provided. These include increased information for visitors

regarding parks regulations, proper equipment, potential hazardous weather and environmental conditions, polar bear safety, avalanche hazards, and infrastructure-related hazards (Parks Canada, Nunavut Field Unit, 2008; Quest Research and Consulting Inc., 1998). In short, Parks Canada emphasizes that prevention, through communication and active management, is the key to reducing visitor risk. It is also recommended that Parks Canada staff undergo increased training and that new staff travel with experienced staff. In addition, Parks Canada emphasizes the need to continue to incorporate Inuit knowledge into training workshops for staff. In particular, the document acknowledges that information regarding sea ice hazards, weather, and safe harbours for boats was primarily gathered through consultations with local people (Parks Canada, Nunavut Field Unit, 2008).

At the visitor level these documents translate into a required orientation and a registration with the local park's office prior to going to Auyuittuq National Park. Visitors may have also received a trip planning guide for Auyuittuq prior to their arrival. This planning guide provides introductory information about the park and region, including seasonal descriptions, an overview of hazards, and emergency services. The orientation reviews this material in more detail and discusses current hazards and park updates. Depending on the season, this may include the weather conditions, glaciers, avalanches, river crossings, and polar bears. Visitors are also required to fill out registration forms, providing Parks Canada with information about visitors' prior experience levels, their plans, and equipment they will be bringing with them. Visitors are required to deregister once they have returned from the park, allowing parks to elicit feedback regarding their experiences and potential safety issues. In the case of a visitor

incident, visitors are warned that they must be able to rescue themselves. However, basic search and rescue services are also a mandate of Auyuittuq National Park (Quest Research and Consulting Inc., 1998).

### **6.3 Community Concerns about Visitor Safety**

Local people want visitors to have a positive and safe trip to the area and many feel that there are improvements to be made in the way visitors prepare for and travel within Auyuittuq National Park. Below is a conversation amongst four participants of the Sea Ice Workshop about how many visitors come to Qikiqtarjuaq totally unprepared for the arctic environment.

*Leah Newkingnak: (Going through Akshayuk Pass) we stopped to rest and make tea one time near a cabin. When we got to the cabin we were sure the cabin was empty. While we started the stove one of the people decided to look inside the cabin and we were very surprise to find a Qadlunaaq inside in the sleeping area in a sleeping bag awake, it was very cold inside the cabin. He had given up and had been in bed for many days already because he was very cold. We were very concerned for his safety because we all have souls and we also value his life regardless if he is Qadlunaaq or Inuk. That is why it is imperative we teach them the importance of planning. We ended up warming him up and filled up his coleman stove and once he had enough energy and okay we left him behind. It is imperative we teach all people coming to the north for the first time to make sure they have extra survival provisions because unpredictability of this area is very different from where they are coming from.*

*Billy Arnaquq: all the visitors are given orientation before they leave by the park. But I think some of them put themselves into their own risk because they don't want to carry too much load. And if they can be given a certain amount of fuel (for the stove) that they will need for a certain amount of days, it would be great, to help them survive.*

*Lootie Kakudluk: If people continue to go travelling without emergency provisions and not listen to the warning they get to make sure to bring extra emergency provisions, there will be dire consequences. The cold is not to be played with, someone is likely to die because some people do not bring extra clothing. We value everyone's life. We all have living bodies but the only thing is we speak different languages we all value Qadlunaaq just as much as we value Inuit.*

*Jukie Nookiguak: I have come in from Pangnirtung where they usually go caribou hunting. Coming back from Pangnirtung fiord, there's parks cabins there and shelters there. At the end of the fiord, I came across two skiers. They were trying to protect their*

*feet from getting wet by putting in plastic bags inside their boots and I thought they looked pathetic. I know that skiers prepare as much as they can and sometimes unexpected things happen, they get wet or they get cold. And weather is a big factor in everything, it could be nice weather, it could be cold weather. And he just wished that skiers would be more prepared for our winters, our snow, our weather. When I came across the skier that was wet, I helped him by heating my stove and helping him. The other things that I noticed, skiers push themselves to exhaustion sometimes and sleep is very important. Some skiers might think they're very fit. That's not enough. They should come more prepared and learn not to push themselves so much to exhaustion. Because when we are exhausted, all we want to do is sleep.*

*(original in Inuktitut)*

A number of issues were brought up in this conversation. The experience of encountering a visitor in trouble was one that was repeated by a number of participants in this research. The responsibility local people feel for visitor safety is also expressed along with the desire to share their knowledge in hopes of reducing accidents.

Notwithstanding the required visitor orientation, many participants expressed concern about the low level of preparedness and knowledge visitors seem to have when travelling in the arctic environment. For example, many participants explained that visitors sometimes camp in dangerous areas where they are exposed to high winds or potential avalanches. It was felt that Parks Canada should be warning people about these dangerous camping areas. Also, it was the strong consensus that visitors often did not take appropriate equipment for the conditions. For example, many of the visitors neglect to bring a Coleman stove, which is a staple for Inuit travellers in case they get wet or cold. Visitors also bring very limited or rationed supplies so if there is a change in the weather or an accident, they do not have the necessary equipment to respond to the situation.

*I just feel like, for some of the tourists, that a lot of them get the information from somewhere out there and come to a place that they think is the same. But it can be totally different. And some of the clothing that they have been given, some of them do not fully qualify for the weather condition that we have at times. So that's why it's very important*

*that they receive the information from the elders, from the knowledge of the Inuit people of the north.*

*(Billy Arnaquq – original in Inuktitut)*

The lack of preparedness some visitors exhibit runs counter to the guidelines Inuit use when travelling on the land. It was understood locally that it is Parks Canada's responsibility to prepare the visitors even before they arrive in the north. For example, many participants recommended that visitors are to be told exactly the type of equipment to bring based on the season. Parks Canada could emphasize, for example, that even expert hunters do not travel without certain equipment, like a communication system, and that visitors should take similar or even greater precautions. In addition, it was recommended that Parks Canada have supplies available for visitors who still come north ill-prepared. Extra equipment and supplies could be available at community parks offices and in shelters along Akshayuk Pass for people who run into trouble while in the park.

One of the sectors of visitors in Auyuittuq National Park of particular concern was those that ski through the park in the early springtime. These people are in increased danger because of the potentially cold and windy weather during this time of year. Also, because they may be travelling on ice either on their way to the park or through the pass, there are increased concerns about visitors travelling over dangerously thin areas.

Participants emphasized that these visitors need to have the proper equipment for this time of year as well as more knowledge of where to travel and camp. Davidee Kooneeliusie, an Ecosystem Technician with Auyuittuq National Park for over 35 years, explains his concerns about skiers.

*Well, you have to know, especially nowadays, it's easier for the people now to get into trouble. But, in order to know a little bit about, just by looking at the surface of the ice you can tell, but there's lots of people who don't know those. Like, in some places, cross-country skiers, like visitors that we're getting, some of them been travelling on pretty thin*

*ice, just because they have long skies that stays on the surface. If they were walking, some of them would probably break through. And there's been some people gone into places where they really shouldn't be in the area. And, before they actually go in, before they travel, they really should ask questions, or they should be told which route to take and all those things.*

*(Davidee Kooneeliusie, original in English)*

A major concern regarding skiers is that some choose to travel on their own to the park.

This involves travelling on the sea ice from Qikiqtarjuaq to Akshayuk Pass in potentially thin or slushy areas that are also full of seals, which can attract polar bears. Visitors may get lost either on their way to the park or after they have decided the conditions are too challenging, on their way back to the community. Although Parks Canada tries to encourage people to travel with an outfitter to the park, their position is that they cannot force people to do so. Nevertheless, community members felt that visitors should not be travelling this area on their own and that Parks Canada should ensure that this type of tourist activity is guided by a local outfitter.

#### ***6.4 Parks Canada's Responsibility***

Participants seemed to take a broader understanding of Parks Canada's responsibility for visitor safety. Many believed that the institution should be helping to ensure visitors' safety throughout their entire visit instead of just while they are within Auyuittuq boundaries. For example, a few participants mentioned that they had met visitors that were lost walking around Broughton Island and that they need to be provided with a better map of the entire area. Visitors also need to be told about the potential hazards associated with these activities.

*Visitors that come up are lucky they haven't had an encounter with a polar bear by walking around and exploring the community. They should be told about what to expect here and what to do and what not to do (inform them of dangers of polar bears in the community)*



*(Noah Keyootak- original in Inuktitut)*

In addition to safety concerns, many participants were shocked and at times insulted that visitors had such a misinformed idea of what life was like in Qikiqtarjuaq. Even basic elements of the community, such as the fact that there are stores in town, were a surprise to some visitors. Furthermore, visitors generally knew very little about the culture and lives of Inuit people. This lack of understanding about life in the north extended to the natural environment as some participants mentioned that visitors were surprised by the landscape or that they thought all arctic animals were endangered. Some participants mentioned that this ignorance can be hurtful to local people not to mention a big shock to the visitors who arrive in a place that is significantly different than anticipated.

Participants believed that Parks Canada could play a role in better informing visitors about what life is like in the community and the surrounding environment. In fact, as local outfitter Billy Arnaquq indicates, this information may enhance visitors' experiences, as many visitors these days are interested in travelling the north to not only experience the natural environment, but the cultural one as well.

*The Inuit knowledge working group is very important you know ...they can establish something that can work better for the community and even for the visitors. I think the market is out there, it is just the matter of knowing how to get it out there. Not only safety, but culture is also very much important in the minds of many people. Like the people from France, with the clients we had from France, they are very interested in the area of culture and what I have seen from people from France, a lot of them want to see things the way they are. Even though they look for service they much rather see something that is natural to the way we live, the way we eat, the way we sleep, and they love to see us exactly the way we live and not us try to accommodate them. So different groups of people have different cultures, so if you learn the different cultures from other countries, then you can know better how to accommodate those people once they come.*

*(Billy Arnaquq – original in English)*

Perhaps because Qikiqtarjuaq does not have a visitor centre like that in Pangnirtung or because Parks Canada is seen as the only formal community institution to deal primarily

with tourism, participants felt that Parks Canada should take more responsibility in ensuring visitor safety as well as better informing them about the Qikiqtarjuaq community and environment.

One of the challenges in having Parks Canada take on the responsibility to better inform visitors is the fact that many local Parks Canada staff are visitors to the region themselves. As was mentioned in Chapter 4, part of the process of becoming knowledgeable about being safe in the arctic environment is having experience within it, as well as being connected to a social system in which knowledge is exchanged. In the case of some local parks employee, both criteria are limited.

*Those (parks employees) too have to be informed of the routes. It's not always good through parts of the route. Many of us have learned, those that go to Pangnirtung, that on the route, areas can have thin ice. I decided that they have to be warned about that, these ones that monitor the parks. It seems apparent that they have to be trained some more before they even start, well, teach them more about the route they will be taking, that it has winds frequently or that it usually has thin ice, all this area might be like that. (Levi Nutaralaaq – original in Inuktitut)*

Although Parks Canada employees do take many different training courses, this does not compare to the first hand experience that most local people have. Since some parks staff are, in the eyes of local people, visitors themselves, they should not have the responsibility of informing other visitors about how to stay safe. Instead, participants felt that parks employees could greatly benefit from the local expertise that already exists and is continually updated in Qikiqtarjuaq. However, there remain challenges in communicating this knowledge to visitors and staff. There is no defined structure to do this, and the visitors and staff often speak a different language than many of the experts.

*But the thing is, we don't share a language with them. So, even if we say it, we can't understand each other, this is like this, this one isn't that good, this area is thin, when we don't share a language, we can't make each other understand each other. (Levi Nutaralaaq – original in Inuktitut)*

Because there is no formalized system that allows parks staff and local experts to communicate, information is only shared on a casual basis and reliant on personal initiative. For example, for part of this research, the Qikiqtarjuaq parks office employed one Park Warden, Bryan Chruszcz. When I interviewed Bryan, he had been working in Qikiqtarjuaq for just about a year and mentioned that at times he asked one of the outfitters for information about conditions in certain areas. However, as the year progressed, this outfitter was involved in a dispute with Parks Canada, thereby cutting connections between himself and parks staff. Furthermore, within a year from our interview, Bryan had been transferred to work in Wood Buffalo National Park in the western arctic. So, although informal relationships allowed information-sharing for a limited time, because of changing relationships and staff turnover, it is not a sustainable means to ensure communication.

### ***6.5 Increased communication between Parks Canada, outfitters, and the community***

The people that are most knowledgeable about the way Parks Canada does business other than Parks Canada staff are those that are involved in the tourism industry. Parks Canada sets certain guidelines for outfitters to follow when taking visitors to or from the park. For the most part, these guidelines are looked upon favourably by local outfitters like Leslie Nukiwuak.

*In the boat, we have better equipment now than before. It's safer to be out than before because all these regulations you have to deal with too, when you deal with these people. That makes it safer.  
(Leslie Nukiwuak - original in English)*

However, one regulation applied to outfitters that was heavily criticized is that outfitters are not allowed to carry a firearm within parks boundaries. Inuit beneficiaries maintain the right to carry firearms for hunting purposes within the park. The current Parks Canada regulations do not permit anyone else, other than for management purposes under permit from the Superintendent, to carry firearms in the park. This includes outfitters within park boundaries, whether or not they are Inuit. Given the safety concerns with polar bears, the Inuit outfitters interviewed believed that this regulation put them and their clients in danger.

*They're trying to stop us from doing it. What if I run into a dangerous, angry animal? Or what if I broke down coming back and I don't have anything for my protection, just my harpoon. They, parks, are trying to stop that too, from taking our firearm into the park. But I already own the park. The reason was the clients, that was the reason, they don't want to let the people see the firearm. I still do hunt in the park because I own it, they try to tell me not to take my firearm now? When I'm taking the clients out? I'll be free again once I drop them off. Unless I drop it off, left my firearm at the line of the park, and pick it up on the way back.  
(Leslie Nukiwuak – original in English)*

These concerns have been discussed by the Auyuittuq Joint Park Management Committee, which has formally requested an amendment of the Wildlife Regulations. The changes would permit Inuit outfitters to carry and discharge firearms in the park and align with the commitments made in the IIBA (Parks Canada and Qikiqtani Inuit Association, 1999).

Local outfitters have detailed knowledge about the park area as well as the local tourism industry. With improved communication, these people could help improve park's procedures and overall safety of visitors. Increased communication is an idea that is supported by local outfitter Billy Arnaquq.

*Parks Canada. Because, within the last two years now, I'm getting to know the system within Parks Canada. I think, in a lot of ways, you need to improve in certain areas.*

*Just like I said, communication is so important. But, the thing that can hinder a lot of things is that even when you want to communicate something, you don't have the support. That can hinder your effectiveness, when you don't have the support. Like, with the park, as an outfitter, I think it would be good if we could just get together. Get together with the park and have a talk and get to know each other. I think that would be very important. Just like, for myself, I'm not the only outfitter and there are other outfitters. My real heart is to help even the other outfitters, not just myself. I believe in working together to accomplish more together.*  
(Billy Arnaquq – original in English)

Creating a forum in which outfitters could interact with each other as well as Parks

Canada staff would allow for people in the same tourist industry to work together, learn from each other, and improve the way things are done.

However, participants thought the local parks office should make a greater effort to communicate with the whole community. Again, with regards to safety, the information parks requires to keep its staff and visitors safe, exists within the community. At the same time, participants were interested to know more about the activities occurring in Auyuittuq. Therefore, the general theme of participants' recommendations was to increase communication and collaboration. This was supported by both from parks staff, such as Park Warden Bryan Chruszcz, and local people, such as hunters Toomasie Newkingnak and Pauloosie Keyootak.

*I think even just interacting, providing an opportunity for parks staff to interact with local people is good too, encouraging that connection. I think if you spend time out on the land with people they know you better than seeing you around town. And you might be able to go to them for assistance or information if needed*  
(Bryan Chruszcz – original in English)

*Yes. If the community and Parks Canada can work more closely together perhaps the public can be more informed about whatever parks and the community deal with. I think that the public can be more informed if the community and Parks Canada can work more closely together. Or the community organizations and Parks Canada, if they can work more closely together, I think the public can be more informed about what's happening.*  
(Toomasie Newkingnak – original in Inuktitut)

*We who live up here have to help the parks people so visitors will keep coming to our land, we who live here have to take part regarding the danger of the change, using the knowledge of the Inuit, this situation has to be dealt with... The Inuit, since of course they live here, their knowledge be well used, used to assist more, it is obvious that this project can be made better as long as if we work well together on it  
(Pauloosie Keyootak - original in Inuktitut)*

Of course, the question of how increased communication could be facilitated remains.

One suggestion that emerged from this research is the potential of expanding the role of the Inuit Knowledge Working Group from guiding this specific research to helping facilitate information-sharing on the local level. One proposed Working Group activity that may be of value to both Parks Canada and the community is to have a yearly workshop out on the ice or land. Here, parks employees could learn from, interact, and develop relationships with community elders and hunters. The workshop could also serve as a way for parks to help with community concerns by bringing a few community youth who do not have the opportunity to experience and learn on the land. This type of workshop, held on the ice and in the community, was conducted as part of this research. All who participated, from researchers, parks staff, Working Group members, local youth, and an outfitting company felt that it was a successful initiative that allowed for valuable knowledge exchange. However, participants emphasized that one workshop was not enough, and that people would have increased benefit from these trips if they were a re-occurring event.

Employing more local people, already a goal for Parks Canada, may also help the parks office become more integrated within the local communication network while also improving community relationships. A more foundational change would be to include the responsibility of regularly communicating with local people as part of certain parks employees' job description. One idea was for parks staff to host a radio show series, in

which they could communicate parks initiatives, recent activities, address community concerns or questions, and elicit feedback from hunters about conditions in and around the access point to Akshayuk Pass. This would allow an informal two-way exchange of information between the community and the institution.

Although this research can be seen as a first step towards learning from local experts about safety issues, the local environment is always fluctuating and a continual means of collaboration and communication is needed. Whatever process of exchanging knowledge between Parks Canada and hunters and elders is developed, it must be ongoing.

## ***6.6 Discussion***

When comparing Parks Canada documents with community perceptions and concerns regarding visitor safety, there are many similarities. Both identify issues concerning climate, ice conditions, and avalanches as major hazards for tourists. Both recognize the value of experience, having the proper equipment, and believe that visitors should allow the weather to determine their travel plans. Also, both encourage travellers to tell others about their plans and, in case of emergency, have organized search and rescue services available. However, there are also a number of differences in the way the groups understand safety issues in Auyuittuq.

To begin with, Parks Canada and local Inuit categorize land-users significantly differently. Within Parks Canada documents, ‘non-visitors’ are classified as those who do not pay park entrance fees which includes Inuit beneficiaries, outfitters, parks staff, and researchers (Parks Canada, Nunavut Field Unit, 2008). Conversely, local Inuit categorize visitors as anyone who does not have experience or a relationship with the

environment. So, parks staff and researchers working in the area for a relatively short amount of time would be understood as visitors by local Inuit. Accordingly, participants expressed safety concerns not only about tourists to Auyuittuq but about all visitors who travel around the Qikiqtarjuaq area.

Another point of difference is the way Parks Canada classifies incidents according to particular activities. Local Inuit, when describing past incidents, do not usually associate some with a particular activity and others with another. This is because travelling on the land and ice is part of life for local Inuit. With regards to the documented incidents and ‘hot-spots’ identified by Parks Canada, the majority were on land, specifically in Akshayuk pass. Inuit, however, primarily travel on the ice or, in summer, by boat. Because of the differences in travelling priorities, Parks Canada’s ‘hot-spots’ do not reflect areas of concern among Qikiqtarjuarmiut.

With regards to concerns about tourists, Qikiqtarjuarmiut participants focused on the visitors that travel in the springtime by skis. According to Parks Canada data, however, hiking accounts for the significant majority of visitor incidents (71%). This is compared to skiing (18%) (Parks Canada, Nunavut Field Unit, 2008). This difference in focus may be because local people rarely travel in the areas where visitors are in the summertime, Akshayuk pass, and therefore do not encounter them as frequently. In addition, for Inuit, summer is not seen as particularly dangerous because of the mild weather conditions. Also, the number of visitors that hike in the park (78%) is significantly greater than those that ski (3%), thereby leading to a greater probability of incidents (Parks Canada, Nunavut Field Unit, 2008). Nevertheless, many of the



participants expressed concerns about tourists' lack of equipment and supplies at all times of the year.

Finally, within their documents, Parks Canada includes little about the historical background of the park and the relationship of this land with local communities. This may be because its audience is parks employees that already work in the region and presumably know the history and current relationship. Nevertheless, the legacy of how Auyuittuq National Park came to be and Parks Canada's actions since remain in the minds of local people and was brought up again and again in interviews about safety issues in Auyuittuq. Because of the historical lack of communication and unfulfilled promises, there remains cynicism about Parks Canada's role, initiatives, and value. This skepticism emerged, for example, when the Canadian Wildlife Service attempted to develop new protected areas around seabird colonies near Qikiqtarjuaq. The greatest challenge for this initiative was dealing with mistrust that existed locally regarding protected areas and how they affect the land and the rights of local people (Mallory, Fontaine, & Akearok, 2006). The distrust about the purpose of future protected areas reflects the experience of Parks Canada in establishing and administration of Auyuittuq National Park. Parks Canada's mandate to protect the natural and cultural heritage of the area is not recognized by the majority of community members. This may relate to the belief many Aboriginal communities hold, that without a long term relationship with an area, one does not develop the knowledge and authority necessary to govern the land or activities within it (Parlee, 2006). If, as was argued, Qikiqtarjuarmiut follow this philosophy, Parks Canada is not seen as having the capacity to manage this area properly. Of course, most people in Qikiqtarjuaq accept Parks Canada's place in their community.

However, the legitimacy of the organization's role is questioned since only a few decades ago, they came to Inuit land and imposed their jurisdiction on an area where they had no historical relationship, experience, or knowledge. The creation of the JPMC as well as other consultation and research initiatives with the community has not significantly changed this perception. The understanding that Parks Canada only relates to tourists signifies the failure of Parks Canada to communicate their initiatives to the local level. Moreover, it shows the amount of work that is required before local people feel any sense of ownership over Auyuittuq Park as an institution.

Nevertheless, both Parks Canada and Qikiqtarjarmiut emphasize the value of using Inuit knowledge when travelling in the arctic. Although all the knowledge to be safe in this environment exists within Qikiqtarjuaq, visitors have little opportunity to learn from experience or from local experts. Language, opportunity, and the short length of stay of most tourists are all barriers to information exchange between tourists and local people (O'Hara, 2001). Therefore, Parks Canada must be responsible for communicating information from Inuit experts to its visitors. Parks Canada has attempted to do this by using information, such as hazardous areas of concern, from interviews with local hunters in their Risk Assessment and through meetings with the JPMC (Parks Canada, Nunavut Field Unit, 2008). However, these efforts have yet to include a more complete understanding of local knowledge regarding safety or other topics.

By documenting safety perspectives of local experts, this research provides recommendations on how the safety of visitors can be improved. Participants felt that there should be enhanced educational resources for those travelling around Qikiqtarjuaq. Specifically, visitors should be better informed about seasonal climate variation,

environmental hazards, and how to best avoid and prepare for these. Information about the broader social and ecological environment should also be provided along with equipment as required, such as communication systems and extra supplies. Improving the orientation process may be more efficiently achieved if it was co-conducted with an Inuit hunter or elder. Parks Canada should also prioritize the development of new ways of interacting with local community members and increasing two-way communication. Hiring more local Inuit is already a priority for Parks Canada and it is emphasized again by the participants of this research. Other ideas include incorporating the priority of communicating to the community into employee profiles, expanding the role of the Working Group beyond this project, hosting a radio show, or holding an annual workshop that allows staff, local experts, and youth to share information. These recommendations were contributed by research participants and all focus on how Inuit experts and knowledge could increasingly be involved in ensuring the safety of visitors to Auyuittuq National Park.

There exist many criticisms about attempts to ‘incorporate’ Indigenous knowledge into state land management systems as they have overwhelmingly failed to address the foundational problem of unequal power relationships (Nadasdy, 2003). Indigenous peoples and their knowledge have frequently become marginalized as the motivation, methods, and outcomes of such initiatives do not reflect community values (Nadasdy, 2003; Smith, 2006). Nevertheless, cooperative management through JPMCs is deemed by others to be working successfully in some of Nunavut National Parks (Gertsch et al., 2005). This research cannot comment on the success of the Auyuittuq JPMC, however it does indicate the community perceptions of the level of change and

successes in the Park system. Very few people in Qikiqtarjuaq had any knowledge of the Auyiittuq JPMC, the consultation process conducted for the Risk Assessment, Park Management Plan, or other parks initiatives. In short, the work of the Auyiittuq JPMC did not seem to be inspiring the same level of community support in Qikiqtarjuaq as it may be in the communities involved in the management of Quttirnapaq National Park, for example, as described by Gertsch et al. (2005). Instead, what was primarily discussed in Qikiqtarjuaq regarding community-institution relationships were the broken promises and lack of community involvement. As Gertsch et al. (2005) argue, trust along with a readjustment in the way people work, know, and manage, are essential for successful cooperative management. The JPMC, current consultation methods, and even the recommendations of this research, are steps towards changing the way Parks Canada works, knows, and manages. However, these initiatives do not go far enough in addressing the underlying problem of unequal power relationships seen in many cooperative management systems and indicated through Qikiqtarjuarmiut criticisms of Parks Canada (Nadasdy, 2003).

Inuit knowledge regarding safety is not just about applying specific skills or following explicit rules, but a way of life that incorporates relationships, values, beliefs, as well as rules and skills. In short, no research project, round of interviews, or meetings can adequately recommend how Inuit safety culture should be used to improve safety issues in Auyiittuq National Park. This will only come when local experts, representatives, and leaders are involved throughout all aspects of park management and provided with the power to make changes and manage the area in a way that reflects the rights, strength, and knowledge of the local people. What this may mean for visitor

safety is an acknowledgement that local safety culture cannot adequately be taught in an orientation process. Therefore, the value of travelling with an Inuit outfitter should be emphasized, if not enforced, by local parks offices. Although this would significantly change the management of Auyuittuq National Park, this type of regulation would acknowledge the authority of local experts and truly reflect Inuit safety culture.

Qikiqtarjarmiut are the stewards of safety in their environment and recognizing this would mean that these experts have the right to guide visitors through this space. Only with the acknowledgement and transfer of authority for the area, will Auyuittuq National Park justly reflect the local social and ecological environment, inspire support and pride in the local community, and ensure positive and safe trips for visitors.

### ***6.7 Chapter Summary***

When considering the way Parks Canada does business, local people are primarily concerned with visitor safety. To them, visitors seem to lack both knowledge of the region and the equipment required to be safe while travelling in the arctic environment. Local people feel a certain level of responsibility for the safety of visitors travelling in and around the park and also feel that visitors should have more information about the area prior to coming. The best information that could be provided to visitors is held within the community and is continually updated by local experts travelling on the land and ice. The challenge that exists for visitors to access this information highlights the potential role of the local Parks Canada offices to facilitate the information exchange between local experts and visitors. The benefits of a greater collaboration between the managers of Auyuittuq and local people would extend beyond improving the safety of visitors to the area. By tapping into the existing communication network, the local Parks

Canada office may improve their own institutional knowledge of the region, safety of staff, researchers and visitors, as well as potentially improving their relationship with the community. Time, resources, and respect are required to begin to access the varying types and layers of Inuit knowledge. However, to truly reflect Inuit knowledge or safety culture, the process of managing Auyuittuq National Park needs to be altered so that Inuit experts and leaders are involved in the day-to-day management of the area and its visitors. This ultimately requires not just better communication or the incorporation of specific aspects of knowledge into management plans, but a shift in power that ensures that the management process of Auyuittuq National Park begins to embody and promote Inuit knowledge, values, and authority.

Chapter VII will provide a summary of the results presented in this chapter and the preceding Chapter IV and V while revisiting to overarching research aim of exploring how to work with Inuit safety culture in the management of Auyuittuq National Park. It will conclude with a review of the recommendations provided and examination of how to move forward from this research.



## **Chapter VII: Conclusion**

Inuit people, as with other hunting cultures, have drastically different ways of understanding themselves and their environment than the dominant worldview in Canada (Kulchyski, 1994). This research focused on only one element of Inuit knowledge, how the Inuit of Qikiqtarjuaq understand and respond to safety issues, otherwise referred to as Inuit safety culture. Specifically, this research aimed to explore how Inuit safety culture can guide safe land use practices in Auyuittuq National Park by investigating the knowledge and practices of the Inuit of Qikiqtarjuaq, Nunavut. This was done by attempting to describe Inuit safety culture in Qikiqtarjuaq, looking at ways their safety culture might be influenced by environmental and social dimensions, and finally examining how it can enhance the safety management framework of Auyuittuq National Park.

## ***7.1 Research Summary***

Inuit safety culture in Qikiqtarjuaq is a way of life that intertwines skills such as the ability to read the environment with knowledge of the entire ecosystem, social institutions and management systems that guide how people interact with each other and the environment, and a worldview that connects safety with the values and philosophies that guide all aspects of life. Inuit safety culture is not easily codified or articulated. Instead, being safe may be understood as a process or journey that people are engaged in throughout their entire life (Davidson-Hunt & Berkes, 2003). Qikiqtarjuarmiut develop intimate relationships with their environment by travelling and re-travelling specific areas. These relationships, that produce a depth of knowledge and a variety of skills as well as a sense of identity, are supported by maintaining respectful relations with all other human and non-human components of this environment. Qikiqtarjuarmiut relationships with their environment also carry meaning as they are connected with the journeys of their ancestors through the same areas. For local people, going out on the land and ice is not a trip designed for one particular purpose. Instead, each time a hunter travels through their environment, they further develop their journey in which knowledge, skills, equipment, and relationships all play a part. Five themes were presented in this thesis to describe Qikiqtarjuarmiut safety culture: it is based on individual and communal experiences, shaped by the arctic environment, rooted in the knowledge passed down from elders, maintained through relationships, and connected to identity and well-being. When combined, these themes begin to illustrate the holistic understanding of the safety culture that is present in Qikiqtarjuaq. These themes also reflect those previously presented in literature defining Inuit or traditional knowledge as a process that draws on



mutually-influencing levels of analysis. In effect, an examination of Inuit safety culture shows how Inuit knowledge is expressed with regards to safety in Qikiqtarjuaq. This research describes safety culture as a multifaceted journey that is expressed in many forms and influences all aspects of everyday life.

Inuit safety culture is dynamic and constantly adapting to changing social and environmental realities. Some implications of environmental and social changes in Qikiqtarjuaq are so severe that they threaten to overwhelm Inuit adaptation processes. Environmental change is challenging the way Inuit read their land and the way in which they travel within it. At the same time, social changes are challenging the traditional means of educating Inuit youth, thereby diminishing their ability to stay safe on the land and ice. Although saddened by these changes, Qikiqtarjuarmiut are keen to assess new knowledge, skills, technology, teaching strategies, and organizational processes to help them adapt while remaining connected to their cultural knowledge and a way of life that has allowed them to thrive for generations. In particular, Qikiqtarjuarmiut felt that as long as they are able to continue travelling, learning, and maintaining a relationship with their environment, they will be able to keep their culture strong and continue to adapt to changes.

Nevertheless, regional and national organizations can be central to adaptation processes as they have the means to encourage, enable, and equip Inuit communities (Huntington & Fox, 2005). Parks Canada, through the management of Auyuittuq National Park, is one organization that has the capability of helping local people adapt to changes since they themselves are struggling with the effects of environmental change and the means of maintaining the safety of its staff and visitors. At the same time, as

outlined in the IIBA, the management of Auyuittuq National Park must involve local participation and promote the use of Inuit knowledge (Parks Canada and Qikiqtani Inuit Association, 1999). However, currently, Auyuittuq National Park is seen as an institution that deals solely with visitors and has little presence in the community life in Qikiqtarjuaq. With regards to visitor safety, participants seemed concerned about the apparent lack of information visitors have about the environment. Local people feel a certain level of responsibility for the safety of visitors on their landscapes and feel that visitors could be better prepared with improved information about specific hazards, required equipment, and how to approach travelling in this environment. This information exists within the community, however, it is not easily accessed by visitors. This research highlights the need for the local Auyuittuq National Park office to take a larger role in facilitating information between Inuit experts and visitors.

## ***7.2 Recommendations***

By documenting Qikiqtarjuarmiut safety culture along with local perceptions of safety issues concerning Auyuittuq National Park, this research has produced a number of recommendations:

- Educational resources provided to visitors of Auyuittuq National Park should be expanded and continue to stress the safety issues that make travel in the arctic unique including the seasonal climate variation and environmental hazards. It should be further emphasised that the best way to ensure one's safety in this environment is to have detailed knowledge about the specific area of travel, be observant to on-going changes, remain adaptable by having flexible travel plans and additional supplies, and have the ability to connect with local experts in the

case of emergency. This information may be best emphasised if the visitor orientation process was co-conducted with an Inuit hunter or elder. Information about the broader social and ecological environment should also be provided prior to a visitor's arrival in Qikiqtarjuaq.

- Local Parks Canada offices and/or shelters along Akshayuk Pass should provide extra equipment, supplies, and communication systems for visitors who come to the region unprepared or those who run into trouble while travelling.
- The benefits of travelling with a local Inuit outfitter should be emphasised to visitors. Promoting this type of travel may appeal to many tourists who are interested in not only experiencing the ecological environment but the social one as well. It would also show that Parks Canada acknowledges the authority of local experts as stewards of safety in this environment.
- Although already part of Parks Canada's mandate, the people of Qikiqtarjuaq emphasized the need to hire additional local Inuit.
- Staff should, at least in part, be trained by local experts. Such training could be conducted through an annual workshop such as the one conducted as part of this research. This workshop brought local hunters, elders, and youth together with Parks Canada staff and researchers for four days on the land and ice with two additional days for planning and debriefing in the community. The workshop

context was seen as a valuable learning experience for all and also allowed for relationships between the community members and local parks staff to be formed or strengthened.

- Increased investments should be made in developing ‘Inuit knowledge resources’. These resources could help support Inuit representatives currently involved in various park management committees better reflect the perspectives and knowledge of their community. Such resources are also greatly desired by the community as a whole as they aim to adapt their knowledge to the new learning realities of their youth.
- Parks Canada must develop new ways of interacting with the local community to increase two-way communication. Ideas include incorporating the priority of engaging with community members on a daily basis into employee profiles and/or having employees host a recurring radio show where updates about park activities are provided and community concerns and information about environmental conditions elicited. Another potential idea is to expand the role of the Auyuittuq Working Group beyond the Inuit Knowledge Project to become a part of the local management of the park. Since this community-based group is already established and have become knowledgeable about working within a Parks Canada context, they could provide a valuable role in directing future research, helping plan annual workshops, or providing local feedback on parks initiatives.

All of these recommendations, developed from the perspectives and knowledge of the participants of this research, aim to enhance the safety of staff, visitors, and researchers to Auyuittuq National Park while also improving the relationship between the local parks office and the community of Qikiqtarjuaq.

### ***7.3 Reflections and Future Research***

The ways of Aboriginal societies in Canada, including their language, their values, their ways of seeing and understanding are so different that outsiders have hardly begun to grasp them (Kulchyski, 1994). Nevertheless, in order to be consistent with the obligations outlined in the IIBA (1999), Parks Canada must work cooperatively with the neighbouring communities of Auyuittuq to ensure that their knowledge, culture, values, and practices are integrated into the planning, management, and operation of this park (Parks Canada and Qikiqtani Inuit Association, 1999). This research has attempted to document only one aspect of Qikiqtarjuarmiut knowledge, their safety culture, and how it can be applied to park management. However, because Inuit safety culture cannot be codified or reduced to instructions and is instead an embodied process that influences all aspects of life in Qikiqtarjuaq, no research project can easily state how this should be done. The people who truly have the answer to this challenge are those that informed this research, the experts of Qikiqtarjuaq. To continue to implement the requirements of the IIBA (1999) and have Inuit safety culture and knowledge inform park management, increased mechanisms need to be developed to ensure that these experts and local representatives have the resources and power to guide the park in a way that best represents and benefits their communities. Therefore, future research should focus on how the management team for Auyuittuq National Park and local communities can move

forward to improve relations, develop new means of engaging with each other and their respective knowledge systems, and share power over the management of the park. This will help ensure that the management process of Auyuittuq National Park acknowledges Inuit authority and their integral role in this ecosystem while also improving the safety for all who travel in their homeland.

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## RENEWAL APPROVAL

28 April 2008

**TO:** **Karin Johansson**  
Principal Investigator

**FROM:** **Wayne Taylor, Chair**  
Joint-Faculty Research Ethics Board (JFREB)

**Re:** **Protocol #J2007:056**  
**“Inuit Perspectives of Safety Measures in and around Auyuittuq National Park”**

Please be advised that your above-referenced protocol has received approval for renewal by the **Joint-Faculty Research Ethics Board**. This approval is valid for one year only.

Any significant changes of the protocol and/or informed consent form should be reported to the Human Ethics Secretariat in advance of implementation of such changes.

## Appendix 2: Informed Consent Form

### Informed Consent Form

**Karin Johansson and Micheline Manseau  
of the  
Natural Resources Institute  
University of Manitoba  
Winnipeg, Manitoba  
Canada R3T 2N2  
Phone: 204-474-8373  
Fax: 204-261-0038  
E-Mail: karinjohans@gmail.com**

### **Inuit Perspectives of Safety Measures in and around Auyuittuq National Park**

[The consent form must be reviewed and signed before an interview session can begin. English and Inuktitut versions of the consent form are provided for each session.]

Are you willing to participate in this interview session knowing that it will be recorded and video and/or audio-taped?

Yes

No

In recognition of your knowledge and participation in this research, we would like to include your name and/or direct quotations from this interview in our research outcomes. However, if you wish to remain confidential, your name will not be mentioned.

I wish to take part in this interview but do not wish my comments to be attributed to me.

Or

I would like the information that I share through this interview to be attributed to me.

## CONSENT FORM

**Research Project Title:**  
***Inuit Perspectives of Safety Measures in and around Auyuittuq National Park***

**Project Leaders:**  
**Karin Johansson and Micheline Manseau**

**Sponsored By:**  
**Parks Canada**  
**Nunavut Field Unit**

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### **Informed Consent Form**

**[Community researcher – the interviewer – to read this page and obtain a signature from the participant before starting the interview session.]**

#### **What is this project as a whole about?**

The project is part of an overall Inuit Knowledge Project to explore how to work with Inuit Knowledge to manage protected areas, namely three of Nunavut's four national parks, Sirmilik, Auyuittuq and Ukkusiksalik National Parks. The overall project aims to do this by finding ways to document Inuit knowledge in culturally appropriate ways, and by building relationships and capacity with interested Inuit organizations. The project also aims to make sure that the information collected throughout the life of the overall project is accessible to all Nunavummiut (people of Nunavut) while providing protocols for the sharing of knowledge that communities/ individuals may consider to be of a sensitive nature.

This particular project is meant to document your extensive knowledge of safety issues in relation to the Auyuittuq National Park and areas surrounding your community.

#### **Why is this interview session being recorded and video-taped?**

This session will be taped with a video camera and/or audio-recorder so that we have an accurate record of all discussion and comments. The material will then be made available to all interested organizations and individuals including Parks Canada and the Nunavut schools system.

The original recordings of the information recorded during the interview session will be stored at the local Parks Canada office with copies stored at Parks Canada's Nunavut Field Unit and at the offices of Karin Johansson and Micheline Manseau at the University of Manitoba. These materials will not be made available to individuals other than Karin Johansson and Micheline Manseau and those individuals contracted to do transcription and editing work on the original material. Such individuals will be required to sign a confidentiality form.

#### **Who is involved?**

Researchers from the University of Manitoba (Karin Johansson and Micheline Manseau) as well as staff from Auyuittuq National Parks and locally hired community researchers. Any individuals involved with the interview sessions (including interpreters, camera people, facilitators) will be required to sign a confidentiality form stating that they agree not to share information that you consider to be confidential.

**What will I be asked during the interview session?**

You will be asked to share your knowledge of land-use safety issues and any other knowledge of the nearby National Park and surrounding areas that you would like to share.

**Do I have to participate in the interview session?**

If, at any time during this recording session, you have changed your mind about continuing with the session, please let us know. You should not feel obligated to continue.

If at any time during this recording session, you have thoughts to share that you would prefer not to be audio or video-recorded, please let us know and we will turn the recording equipment off until you tell us you are comfortable to have the recording equipment turned on again.

You may choose to ask us to stop audio-recording or video-taping any part of the interview without losing your rights as a research participant.

**How will the information from the recording session and the video footage be used?**

Karin Johansson and Micheline Manseau will write reports based on your discussions here as well as discussions in other communities that will help the Parks Canada understand how to manage and protect Nunavut's national parks. Karin Johansson and Micheline Manseau will also write some articles to be published in journals or magazines based on the lessons learned from the knowledge you share with us during your recording sessions. Karin and Micheline will make sure that these articles are verified and approved by the local Inuit Knowledge Working Groups, and that additional comments are incorporated to make sure that the information is being accurately represented. In addition, any quotations used that are based on your statements will be verified directly with you to make sure you approve the accuracy and use of these words. If you would also like to comment on draft articles as a whole, please let the community researcher know, and we will make sure that you the appropriate information is distributed to you directly.

**What are the Risks and Benefits of participating in this project?**

We realize that there is a certain risk involved that your words will be not translated properly or that we may not understand your thoughts correctly. In order to lower this risk we will commit to reviewing the information that you share with us to make sure that we have recorded it properly and to make sure that we do not share information that you consider confidential. The benefit of participating in this project is gaining the opportunity to document your knowledge so that it is actively used in the management of the nearby National Park and so that youth in the community have the chance to learn from your experiences and knowledge through curriculum materials developed from the information that you share.

**What will I receive in return for my participation in this project?**

You will receive honoraria at a rate of \$30/hour for your participation in this research project. Copies of the all the reports, articles or other materials produced as a result of this project will be archived at the local Parks Canada office and will be available to you at your request. These can be requested at any point during the research project simply by contacting Micheline and/or Karin in person, by phone, email, or mail.

**How much time will be required of me?**

Each interview session will last one to two hours. If you become tired or uncomfortable at any time during an interview session please let us know and we will stop the interview and return to work with you when you feel more comfortable.

*Your signature below indicates your willingness to participate in this session.*

Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Mailing Address: \_\_\_\_\_

\_\_\_\_\_

Date of Consent: \_\_\_\_\_

Witnessed By:

Name (print): \_\_\_\_\_

Signature: \_\_\_\_\_

**For more information about this project, please contact:**  
**Micheline Manseau (University of Manitoba) 204-474-9889/**  
**Parks Canada, Nunavut Field Unit, 867-975-4673**

This research has been approved by the Joint Faculty Research Board at the University of Manitoba. If you have any concerns or complaints about this project you may contact the above-named person or the University of Manitoba Human Ethics Secretariat at 204-474-7122, or e-mail [margaret\\_bowman@umanitoba.ca](mailto:margaret_bowman@umanitoba.ca). A copy of this consent form will be left for you to keep for your records and reference.



### **Appendix 3: Participant List**

<b>Interviewees</b>	<b>Date</b>
Billy Arnaquq	June 2007
Gary Arnaquq	June 2007
Jacopie Audlakiak	December 2007
Loasie Audlakiak	June 2007
Markosie Audlakiak	June 2007
Stevie Audlakiak	June 2007
Lootie Kakudluk	February 2007
Noah Keyootak	December 2007
Paulosie Keyootak	May 2007
Davidee Kooneeliusie	July 2007
Julie Kuksiak	May 2007
Allan Kuniliusie	May 2007
Leah T Kuniliusie	June 2007
Jay Moesesie	June 2007
Jacopie Newkingnak	July 2007
Leah Newkingnak	June 2007
Toomasie Newkingnak	November 2007
Gamailie Nookiguak	December 2007
Jukie Nookiguak	July 2007
Leelie Nookiguak	June 2007
Levi Nutaralak	June 2007
Anonymous 1	June 2007
Anonymous 2	December 2007
Anonymous 3	December 2007
Anonymous 4	December 2007

## Appendix 4: Copyright Information




**Confirmation Number: 1958537**  
**Order Date: 11/18/2008**  
**Customer Information**  
**Customer: Karin Johansson**  
**Account Number: 3000156193**  
**Organization: Natural Resources Institute**

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