University of Alberta

Resilience to Ecological Change:
Contemporary Harvesting and Food-Sharing Dynamics in the
K'asho Got'ine community of Fort Good Hope, Northwest Territories

by

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In memory of

Charlie Tobac

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and

Mary Barnaby

Abstract:

This thesis examines how community hunting strategies and food-sharing networks facilitate social-ecological resilience to a decreased availability of barren-ground caribou in the *K'asho Got'ine* region of the Sahtú Settlement Area. It is based on collaborative research carried out with the Fort Good Hope Renewable Resources Council, including participant observation and interviews. I demonstrate that organizers of autumn community hunts (2007-2010) responded flexibly to ecological conditions (i.e. the availability of different species of game), and to community perspectives about the hunts, while working to address the broader needs of traditional knowledge education for youth and the food security of vulnerable demographics. A tradition of food-sharing has always been an important mechanism by which the latter need is met. Based on a comparison of two hunts in 2009 (a community hunt versus a series of household hunts), I find that vulnerable groups received meat to a greater extent after the community hunt in part through their exercising their eligibility for it through requests.

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Chapter 1: Introduction:

Recent studies have reported a widespread decline in barren-ground caribou herds that have raised concerns about how caribou populations should be managed (Fisher et al. 2009, GNWT Wildlife Management Division 2011). Discussions regarding wildlife management clearly have implications for people in northern communities, particularly those who depend on caribou for subsistence. While historical management policies have included hunting quotas that have severely disrupted subsistence hunting practices (Usher 2004, Nagy 2004), with climate change now occurring in northern regions to a greater extent than anywhere else, northern communities and arctic researchers are certainly synchronized in their concerns about wildlife and human health (Nuttall et al. 2005). Recognizing that subsistence harvesters have prolonged first-hand experience with such changes raises questions of how they may already be responding (Berkes and Jolly 2001). Hunting societies in northern Canada have always had to deal with various uncertainties in the availability of wildlife such as caribou, and it is important to consider how existing community norms and practices address scarcity before wildlife management options can be appropriately deliberated. At a household level within northern communities, the availability of subsistence wildlife resources is a function of many factors, including animal numbers and locations, the ability of hunters to access them on the land, and also the dynamics of local norms of sharing harvested meat. Working with partners in the *K'asho Got'ine* Dene community of Fort Good Hope, research informing this thesis therefore considered two responses to ecological variability: changing hunting patterns (in terms of community hunts), and norms of food-sharing. In the following chapters I discuss how hunting methods are flexible to both social and ecological conditions, and how social norms of sharing prioritize potentially-vulnerable groups to receive food through sharing networks.

Project Background:

This study was part of a larger academic project (entitled: Community Perspectives on Changing Caribou Populations) which focussed on the socio-economic implications of barren-ground caribou population decline through community based-research, funded through the Social Sciences and Humanities Research Council of Canada (SSHRCC). This wider project aimed to strengthen the capacity of communities in the Northwest

Territories to buffer and adapt to changing caribou populations by mobilizing local and traditional knowledge and generating new knowledge about human-caribou relationships in the context of socioeconomic and ecological change.

Harvesting Characteristics:

Barren-ground caribou from the Bluenose West herd migrate through the *K'asho Got'ine* district of the Sahtú Settlement Area annually, and are harvested by subsistence hunters from Fort Good Hope and Colville Lake primarily in the winter (SRRB 2004). Duffy (1979: 25) indicates that *K'asho Got'ine* (whom he refers to as the 'Hare' people) have historically pursued a relative diversity of game, as compared to neighbouring groups who specialized more heavily on caribou. He and many others have noted particularly harsh subsistence conditions in the lower Mackenzie Valley (Osgood 1970 [1936], Hara and Savishinsky 1978, Johnson and Ruttan 1993) which may have necessitated such flexibility. More recently, data from a harvest study conducted by the Sahtú Renewable Resources Board from 1999-2003 also shows a proportionally greater harvest of species besides caribou (such as moose, fish, birds, and small-game) in Fort Good Hope than in other communities in the Sahtú Settlement Area, suggesting this diversity of harvested species continues (SRRB 2004). The harvest study also reveals that during the studied years, about 100kg of country food was harvested per person in Fort Good Hope on average, per year (see Appendix 2); country food therefore continues to provide a substantial portion of peoples' diets.

Ethnographic Background:

The Indigenous people inhabiting the lower Mackenzie Valley have been known ethnographically as the 'Hare' Dene. But it should be noted that this label is not followed locally; people instead prefer to self-identify as '*K'asho Got'ine*', which translates as 'Big Arrow People' (Johnson and Ruttan 1993: 79), or 'Big Willow People' (Fajber 1996). I will therefore use *K'asho Got'ine* to refer to people living in Fort Good Hope and Colville Lake (unless referring to literature that specifies 'Hare').

Community Background: Fort Good Hope (Radilih Koe)

The location of what is now Fort Good Hope (*Radilih Koe*) has been seasonal gathering point for *K'asho Got'ine* peoples for as long as oral history records. The physical space

of community is delimited by several geographical features, the most obvious being the massive Mackenzie River as it spreads out from underneath the Rampart cliffs. Rabbitskin River and Jackfish Creek- both of with run into the Mackenzie then outline a peninsula around the community, behind which sits an esker embankment known as 'Old Baldy'. At the confluence of Jackfish Creek is 'The Point' where riverboats are loaded, unloaded, and tied up during the summer. The Rabbitskin confluence is a short (popular) 5 minute drive north, and a good spot for both swimming and fishing. Good Hope is currently home to approximately six hundred people, ninety percent of whom are of Aboriginal descent (GNWT Bureau of Statistics 2011). From late November until March, a 160km winter-road connects Fort Good Hope with the oil town and regional hub of Norman Wells (population 800) and a further 500km south to the all-weather road at Wrigley. For most of the year, however, access is limited to aircraft or river-boat. Peter Kulchyski (2005: 152) offers a memorable vignette:

> "The landscape that situates Fort Good Hope remains in tension with the community: metaphors generated from the landscape reach into the interiority of the socious, symbolic representations are inscribed on the landscape in an attempt to bring together disparate discourses of the sacred, the physical structure of the community opens itself to the river that many of its inhabitants depend upon for subsistence."

Extensive participation in the fur trade began in 1806 when a nearby location was selected by the North West Company as its most northerly point of trade (Savishinsky and Hara 1978), while in 1866 a church at Jackfish Creek was completed by a missionary of the Roman Catholic Oblates that continues to stand today. The relatively long period of religious and economic intervention that has occurred has led to significant heterogeneity within families residing in Fort Good Hope, according to Hultkranz (1973: 116). "A place like Fort Good Hope has been a centre for many separate groups: Satudene, Mountain Indians, Hare and Kutchin (Loucheux), as well as hybrid bands recruited from these groups." And while Cohen and Osterreich (in Voudrach 1967) reported that families continued spend much of the year residing in small camp groups into the 1960s, authors such as Savishinsky (1974) lamented an 'urbanizing' trajectory. In 1962, the satellite community of Colville Lake was established to protect traditional livelihoods of hunting, fishing and trapping, and fourteen families from several groups

relocated there. Although Colville Lake is inaccessible by boat, a winter road (176km) connects it to Fort Good Hope for several months a year and strong familial connections continue between the communities. Currently, through jurisdiction formalized in the 1993 Sahtú Dene and Métis Comprehensive Land Claim Agreement, the two communities share the *K'asho Got'ine* district established within the Sahtú Settlement Area.

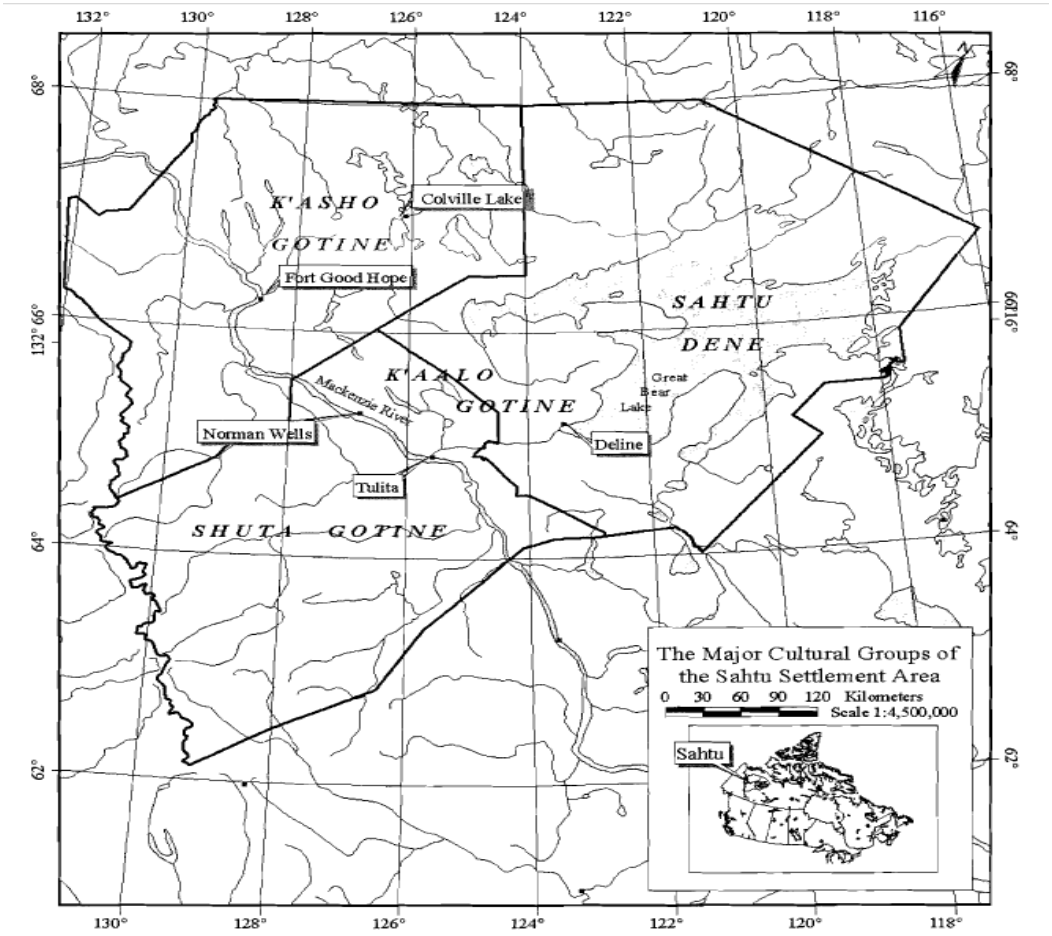

Figure 1-1: Sahtú Settlement Area (Sahtú Heritage Places and Sites Joint Working Group. 2000: 15)

Research Purpose and Outline:

The purpose of this thesis was to examine how hunting strategies and food sharing networks contribute to social-ecological resilience towards a decreased availability of barren-ground caribou. Regarding hunting strategies, I focus specifically on the dynamics of autumn community hunts from 2007 to 2010, seeking to understand the processes by which they are organized to address community needs at a time when caribou may be more difficult to access. Regarding sharing networks, I then consider whether different forms of hunting organization (a community hunt versus a series of household-scale hunts) lead to different patterns of distributing the harvested meat. The format of this thesis is as follows: first, a theoretical framework (Chapter 2) connects hunting and sharing dynamics to theories of social-ecological resilience. A literature review (Chapter 3) follows, exploring how the theoretical framework is a useful lens by which to consider mid-range theories discussed in ethnographic material on hunting organization and food-sharing within northern Dene groups. Chapter 4 then describes the methodology used in this research, while Chapters 5 and 6 present study results in the form of stand-alone papers on community hunts, and food-sharing dynamics. Chapter 7 offers conclusions.

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Chapter 2: Theoretical Framework

My research was guided by social-ecological resilience theory. In essence, I was interested in the extent to which the hunting and sharing strategies used by households are flexible in coping and adapting to ecological variability, such as a decreased availability of barren-ground caribou. The availability of subsistence wildlife resources to households in northern communities is a function of animal numbers and location, the ability of hunters to access them on the land, and also the dynamics of local norms of sharing the resulting meat. Thus, adequately characterising household access to country foods such as caribou necessitates a framework whereby social processes of food acquisition and distribution are nested in an ecological context: a 'social-ecological system'. Alessa et al. (2009: 31) consider social-ecological systems as "complex, integrated systems of humans within the ecosystem…" which encompass feedbacks between "human values, perceptions, and behaviours and the biophysical components of the ecosystems in which people live."

Resilience Theory:

The concept of social-ecological resilience has developed from broader theories of resilience. Adger (2000: 347) summarizes three concepts of resilience briefly, as "…the buffer capacity or the ability of a system to absorb perturbations, or the magnitude of disturbance than can be absorbed before a system changes its structure by changing the variables and processes that control behaviour… [or] the speed of recovery from a disturbance..." Social-ecological resilience, then, is "the capacity of linked social-ecological systems to absorb recurrent disturbances… so as to retain essential structures, processes, and feedbacks" (Adger et al. 2005: 1036). In terms of maintaining the capacity to access food resources from the landscape in the context of a decline in one of those food sources, social-ecological resilience theory provides a useful lens, with its treatment of productive systems in terms of their capability to maintain a function (i.e. providing food for households), rather than their maintaining a specific level of output of a commodity (Adger et al. 2005, Langridge et al. 2006). There are many other definitions of resilience, however, that have been proposed analytically, heuristically, and metaphorically (Carpenter et al. 2001). This diversity is explained by Davidson (2010), who charts resilience theory's origins in pure mathematical models to its

eventual application to ecological, and finally to social systems. A trend towards normativity has accompanied this development, which has been somewhat contentious and questioned in light of the theory's positivist roots (Brand and Jax 2007). Social-ecological resilience is considered a 'hybrid' concept within these variations of resilience theory, with both positive and normative facets (Brand and Jax 2007).

The normative value of resilience theory has been explored by Berkes and Jolly (2001), who applied the concept in a community context and in doing so highlighted their objective of increasing community capacity for learning and adaptation. It therefore seems to offer a more welcome approach to community-based research in contrast to its antithetical field: 'vulnerability' (Chapin et al. 2006). But it is important, then, to be cognizant of exactly how this research characterizes the social-ecological system in terms of resilience, and how it is premised in an underlying normative view that wishes particular aspects of that system to be resilient (Nadasdy 2007). Here, I see continued hunting by community members in Fort Good Hope as a good thing, and that a trajectory towards a state where this is no longer possible would be undesirable. I believe this is consistent with the popular attitude of people in Fort Good Hope, based on my work with local youth and the frequency with which elders comment on the importance of traditional harvesting practices (this is described further in the 'Methodology' section below).

In order to deploy this conceptualization of social-ecological resilience, we refer to the adaptive cycle model that underpins much of the field of 'resilience' more broadly as a useful heuristic for considering the cases at hand. Ecologically, the basic model of an 'Adaptive Cycle' (Figure 2-1) holds that systems are inherently dynamic, and naturally undergo adaptive cycles of 'release' and 'reorganization', such that multiple equilibria are possible, and system evolution over the longer term is inevitable (Gunderson and Holling 2002). This is complexified in the 'Panarchy' (Figure 2-2) model which includes sub-systems that undergo the same processes, with variable and surprising linkages feeding back and forth between layers. Both the adaptive cycle and the related panarchy model predict that systems tend to increase in complexity over time, which also gradually increases their fragility and susceptibility to external shock. Such shocks then force complex systems to collapse and reorganize (Gunderson and Holling 2002,

Lyon 2011). Adaptive cycles are therefore characterised by four phases: the α phase applies to the reorganization of a system after a shock; the r phase marks its exploitation of a particular arrangement; the K phase then describes the system building on and conserving this arrangement, while the Ω phase sees its collapse, or 'release' following another shock. The panarchy model extends this to include multiple adaptive cycles that interact with one another, and describes feedback processes that can lead changes in smaller systems to either delay or propel the collapse and reorganization of large systems.

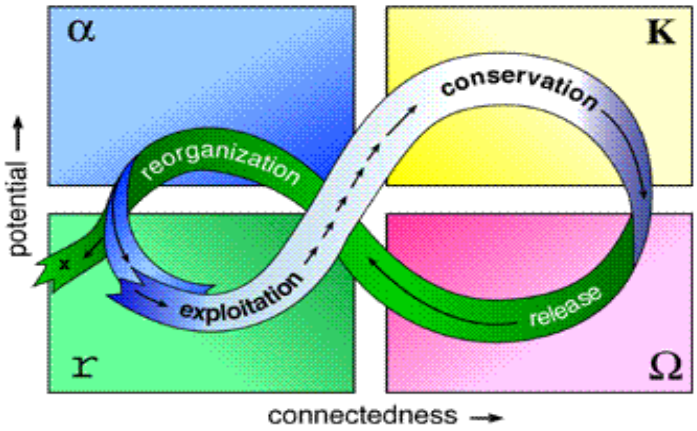

Figure 2-1: The Adaptive Cycle (Resilience Alliance 2011)

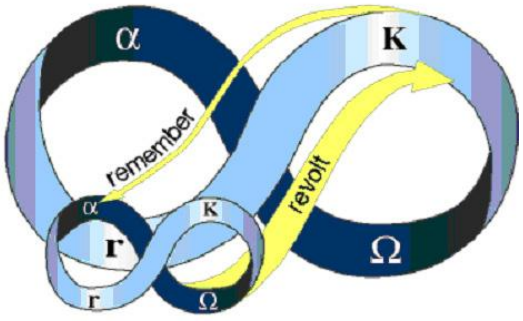

Figure 2-2: The Panarchy Model Connecting Systems (Resilience Alliance 2011)

Regarding the application of the panarchy model to systems involving human groups, Adger et al. (2009), and Davidson (2010) question whether the existence of thresholds, or 'tipping points' that have been well-established in ecological transitions between stable states can be as easily applied to social systems. Davidson, for instance, highlights the capacity of humans to foresee and obviate challenges, which she finds inadequately addressed in deterministic models of resilience. Exploring such agency, Lyon (2011) adapts Archer (1995, 1996) to find a place for agency in the 'backloops' or reorganization phases of the adaptive cycle. Indeed, the normative character of resilience as it pertains to social systems is inherent in the agency that contributes to such feedbacks. While feedbacks in ecological cases may be considered in terms of structural processes, social feedbacks also certainly involve purposive actions individually and/or collectively (Adger et al. 2009, Davidson 2010). Social feedbacks are therefore an essential part of any consideration of a social-ecological system over time, and have been incorporated into the resilience models through theories of adaptive learning (Davidson Hunt and Berkes 2003). This reflects that the ability of an individual or group to maintain the adaptive capacity to purposefully contend with challenges is contingent on their ability to recognize such challenges, and to plan, reorganise, experiment, and adopt novel solutions (Marshall and Marshall 2007).

In an Indigenous context, Davidson-Hunt and Berkes (2003: 1) relate adaptive learning to traditional knowledge. They define adaptive learning as "a method to capture the two-way relationship between people and their social-ecological environment". Adaptive learning for social-ecological resilience "requires maintaining the web of relationships of people and places. Such relationships allow social memory to frame creativity, while allowing knowledge to evolve in the face of change. Social memory does not actually evolve directly out of ecosystem dynamics. Rather, social memory both frames creativity within, and emerges from, a dynamic social-ecological environment" (Davidson-Hunt and Berkes 2003: 1). The authors even describe a learning process in their own research, as they gained a better understanding of how Traditional Knowledge of the Anishinaabe Cree is premised in an experiential relationship with the land.

> "Institutions of knowledge, as they emerge from the Anishinaabe case, comprise rules and values about how the process of adaptive learning may occur; the culturally correct way in which memories can be transmitted from one individual to another; the way in which an individual develops his or her own competency; and how individual creativity may lead to authoritative and legitimate knowledge. Adaptive learning does not occur in the abstract. It emerges through individual action situated in a social-ecological environment. A person does not learn a classification of habitats in the abstract, but learns about habitats through experiences on the land… These places become known as a person travels within the land…" (Davidson-Hunt and Berkes 2003: 16).

The 'web' of relationships active in learning thus includes both the ecosystem, and people. The social processes involved in learning the authors then define based on Kai Lee (1993), as a combination of adaptive management and political change (bounded conflict). Basically, management techniques are considered experiments and 'bounded conflict' provides corrective direction. The degree, or depth of such experiments has been parsed out by Armitage et al. (2008: 88), who outline 'social learning' based on group-learning processes, defining it as "a process of iterative reflection that occurs when we share our experiences, ideas, and environments with others. Social learning includes single-loop (correcting routines), double-loop (correcting errors by examining values and policies), and triple-loop learning (designing governance norms and protocols)". [1]

Adaptations and learning within a human group thus play a critical part in the maintenance of a resilient social-ecological system. As noted above, these processes do not occur in the abstract, but are directed by cultural norms and expectations. They are also normative in that at every moment the actors are pursuing a set of objectives, which contextualize their deliberations of routines, policies, or governance norms to address a 'shock' (Adger et al. 2009). Winterhalder (2001), for instance, offers an example of how hunting objectives such as the transmission of knowledge to youth can

[1] Reed et al. (2010) seek to define the gold standard for recognizing social learning, claiming that it must be demonstrated that: "1)… a change in understanding has taken place in the individuals involved; 2)… this change goes beyond the individual and becomes situated within wider social units or communities of practice; and 3) occur through social interactions and processes between actors within a social network." Such a level of specificity is beyond the scope of this project, however.

influence where and how hunts are conducted. An awareness of actors pursuing multiple objectives then underscores that their responses to 'shocks' are complex. And as objectives and disruptions operate at various time-scales, feedbacks such as those identified in the panarchy model become important. For example, fewer caribou may affect harvesters' ability to access meat, and also their ability to pass along essential knowledge of hunting strategies to a younger generation. Over longer time scales, such a 'shock' might then lead to a less-experienced group of harvesters who would be less able to cope and adjust to subsequent shocks.

In addition, less access to meat will inevitably have repercussions within the distribution system that may in turn affect priorities for subsequent hunting efforts. Whereas analyses of hunting dynamics most commonly focus on the efficiencies of finding and processing meat, they do not often account for the characteristics of its distribution. Who is the meat for, and what sort of meat is appropriate? Food-sharing practices in northern communities have been often characterised broadly as a coping mechanism to mitigate the effects of variability in resource procurement (Berkes and Jolly 2001, Nuttall et al. 2005), and in local settings in terms of 'insurance' (Jarvenpa 2004), and equity (Berkes et al. 1994). Sharing systems therefore operate in conjunction with hunting systems, neither being complete without the other. Ingold (1983: 563) illustrates this well when he contends that 'sharing' encompasses many material and non-material relations and is in fact "built into the productive relations of hunting". Sharing patterns are therefore affected by the processes of production, and vice versa. Moreover, within the adaptive cycle model, sharing systems are characterised by the same features as hunting strategies, such as learning processes that facilitate adaptive changes.

Summary:

At a large scale, the social-ecological system may be characterised by the livelihood of hunting- the ability to procure food from the landscape by harvesting, and may be considered in terms of an adaptive cycle. Accounts of the importance of flexibility in hunting infer that frequent re-assessments are made of hunting strategies, based on a multitude of factors. Graphically, this may be represented by the 'remembering' feature of the panarchy model (in Figure 2-2, above) whereby large systems prevent collapse

(the inability to harvest) by reorganizing smaller systems (experimenting with and changing harvesting techniques). This process is itself contingent on social processes of generating and maintaining the knowledge and skill necessary to experiment and carry out such changes in diverse conditions over the long term. The 'remembering' feature may then be conceptualized as an additional adaptive loop-of-learning (or double-loop), by which experiments are conceived and deliberated. These levels are also connected to other systems, both ecological (such as the dynamics of barren-ground caribou), and social (such as the distribution norms for harvested meat).

Altogether, production and distributional systems that provide traditional foods to members of northern communities can be conceptualized in terms of a panarchy. It is not the intent of this study to measure or assess the robustness of these systems, nor to identify 'tipping points' beyond which they are untenable, but to employ them heuristically to describe a data set pertaining to collective hunting and sharing harvested foods in Fort Good Hope. Resilience to ecological change is therefore defined here as maintaining the capability of people in Fort Good Hope to harvest country food from the surrounding landscape and distribute that food effectively, in the context of ecological scarcity in this case represented by a reduced availability of barren-ground caribou.

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Chapter 3: Literature Review

I employ the framework of social-ecological resilience to explore the ways in which hunting and sharing systems are responding to ecological change. It is also a useful tool for bringing together mid-range theories regarding hunting and sharing systems that emerge from ethnographic literature on northern Dene groups. Such theories include explanations of different the forms of hunting that were traditionally used in relation to various species, the patterns of sharing that pertained to different species or sizes of harvest, and accounting for continuity and change over time. Ethnographic theories also locate hunting and sharing practices within the Dene cultural value system, and these are critical to understand for the purposes of this study. Thus, I first explore literature on *K'asho Got'ine* hunting and sharing systems in terms of a *K'asho Got'ine* value system (as explained by ethnographers) that itself appears highly compatible with the resilience framework outlined above. I then review the ways in which hunting (especially cooperative hunting) and sharing dynamics have operated historically, and identify both changes and continuities over time. This is important in the context of a discussion of social-ecological resilience in order to assert that the practices themselves have been resilient in the wake of the profound social and political changes that have occurred in the Canadian North in recent history.

Ethnographic information used here to illuminate the historical conditions and social structures of the *K'asho Got'ine* peoples are drawn from works related to that group specifically (Petitot 1893, Osgood 1932, Savishinsky 1974, Barnaby et al. 1977, Savishinsky and Hara 1978, Smith 1986, and Fajber 1996), and also accounts of neighbouring groups (Osgood 1970 [1936], Asch 1977, Sharp 1977, Rushforth 1977, Ingold 1983, Rushforth and Chisholm 1991, Helm 1965, 2000, Jarvenpa 2004, and Smith 1978). While there are almost certainly particularities of the *K'asho Got'ine* peoples which go unrecognized as a result of utilizing accounts of other groups, this is necessitated by a basic shortage of information. Some authors also note numerous similarities between northern Dene groups. Rushforth and Chisholm (1991: 71), for example, assert that norms, values and beliefs among 'Hare', Slave, and Sahtúot'ine groups are "virtually identical… [and] ethnographic descriptions of other Athapaskan groups from northern Canada demonstrate that Dogrib, Chipewyan, Beaver, Kaska,

Tahltan, Tutchone, and Kutchin People ascribe to similar beliefs, values, and norms." Also supporting the premise for inter-group similarities, Savishinsky and Hara (1978: 315) and Helm (2000: 16) actually describe the *Satuot'ine* peoples as peripheral descents of the 'Hare'.[2]

Hunting and Sharing in *K'asho Got'ine* Culture:

K'asho Got'ine peoples traditionally lived as hunter-gatherers in the northern boreal forest. As such, this livelihood was resilient for as long as oral history records, and was central in their value system. Ethnographers have summarized social organization within *K'asho Got'ine* groups as remarkably flexible, which facilitated an array of hunting strategies through the seasons. Such flexibility they attribute to fundamental social values of autonomy, cooperation, and generosity. We review two accounts of the importance of these values in order to highlight their compatibility with the 'social-ecological resilience' paradigm, and to contextualize the contemporary dynamics of hunting and food-sharing in Fort Good Hope.

Autonomy, Cooperation, and Generosity:

Ethnographic literature emerging from Dene contexts consistently illuminates that social relations are substantially founded in flexible values of autonomy, cooperation, and generosity. This may be reflected in the flexibility of the social organization of *K'asho Got'ine* peoples, such as their norms of opting in and out of collectives through different seasons. Savishinsky (1974: 47) explores this in greater detail, explaining that,

> "Social structure was fluid, and it was based upon a multiplicity of kinship ties which individuals could utilize as circumstances warranted. For the 'Hare', as for other Athabascan peoples in the region, intermarriage, trade,

[2] A caution against imputing too much from neighbouring groups in the realms of hunting (production) and sharing (distribution) is evident, however, in Ives' (1985) PhD. on the socioeconomic variability of northern Athapaskan groups; he revels in the conclusion that "…starting from the same premises in group formation, many different economic solutions to an astonishing diversity of environments have been shaped. Yet, some of these different economic solutions have been enacted in effectively the same physical environment. Principles of group formation and developmental processes thus have an active and not a passive role to play in the formation of economic alternatives" (320). Concrete examples of this may be found in potlatch ceremonies that are described among the 'Kutchin' (Gwich'in) (Osgood 1970 [1936]), but which are absent in records of the *K'asho Got'ine*, and also their markedly different land tenure arrangements featuring open-access hunting and trapping areas, as opposed to family-based arrangements as in other Athapaskan groups (Lanoue 1981).

> and economic interdependence during times of scarcity, were factors which linked local groups with one another. The flexible nature of social organization thus allowed people to shift their group membership as social and economic conditions necessitated… While there were cultural, linguistic, and geographical differences which gave identity to regional bands, there was no formalized leadership to bind bands together in the aboriginal period, nor were there 'tribes' to explicitly distinguish larger groupings from one another. Social organization, in many respects, was thus not political in nature. Nevertheless, the regional bands who were collectively designed by the term 'Hare' did gather several times a year for ceremonial purposes, for arranging marriages, for cooperative fishing during the summer and fall, and for joint hunting expeditions during the caribou migrations."

Savishinsky (1974: 44), in fact, outlines "four dominant cultural orientations which are shared by many northern groups, and these involve a strong emphasis on 1) kinship ties, 2) generosity, 3) emotional restraint, and 4) behavioural flexibility". From their work in nearby Déljne, Rushforth and Chisholm (1991: 3) also identify four primary Dene values they describe as persisting through the extensive recent changes that have occurred in Sahtú society: 1) individual industriousness, 2) individual autonomy, 3) emotional restraint in social interaction, and 4) respect for generosity and cooperation. Rushforth and Chisholm go to some lengths to unwind the contradictions apparent between values of 'autonomy' and 'cooperation'. They hold that industriousness, self-reliance, and 'knowing how to do things' are connected with the option to 'opt out' of a social group and 'travel with someone else'. Thus, cooperation does not contradict the value of autonomy, as individuals exercise 'behavioural flexibility' (consistent with Savishinsky's account) in choosing whether or not to participate. Rushforth and Chisholm (1991: 23-24) elaborate on the interconnected themes they identify.

> "All of these traits are frequently associated with the highly respected capable person, dene ehdadiyee. Such a person is not dependent on others in any way. Rather, the capable person is able and willing to support and provide for himself of herself and possesses the skills necessary to do so. Bearlakers also place an extremely high value on generosity- that is, on the willingness to provide others with aid and support whenever necessary and possible… Expressed informally, these values are associated with and motivate general operational norms that establish for Sahtúot'ine legitimate, diffuse expectations about appropriate behaviour. First,

> Bearlakers believe that individuals (especially adults, but even older children) should be personally responsible for their own welfare. They rightfully assume that men and women will participate in necessary economic activities and provide for their own needs and those of their families. Bearlakers feel that people should avoid dependency on others. Second, Sahtúot'ine believe that individuals should provide support and air to others and cooperate with others in tasks that require it. Associated with this, Bearlakers expect that people will reciprocate for the aid, support, and cooperation given them. Third, Bearlakers affirm that people should avoid gratuitous interventions into the lives of others. They feel strongly that individuals should be free to control their own lives and determine their own actions as they see fit."

This prompts a question as to the mechanisms of socially enforcing values of generosity while also maintaining values of autonomy. Savishinsky (1974: 78) indicates mechanisms by which social norms are enforced in Colville Lake, that

> "The band recognizes no real political authority among its members, and such devices as gossip, embarrassment, humour, temporary ostracism, and the withholding of generosity and hospitality, are among the most efficacious ways to bring a person back into line. These non-political modes of social control are made possible by a cultural ethic of flexibility, interdependence, generosity, and restraint, whose themes thus exhibit a high degree of consistency and accommodation with one another: each contributes to the maintenance of the social system while it reinforces the validity of the other values."

He does note, however, that expectations for generosity were not always easy to meet, and were sometimes experienced in terms of stress.

> "The ad hoc, fluid nature of each individual's social network leads to a certain amount of tension among the people as a result of the wide-ranging and pervasive expectations for generosity among kinsmen and sagot'ine. This situation affects patterns of emotional expression within the community because in cases where non-kin stand closer to a person than some of his own relations, there is room for ambiguity and ambivalence whenever the issue of that person's responsibility to kinsmen and friends is raised. The villagers [of Colville Lake] are very conscious of their own and other people's behaviour in the areas of hospitality and reciprocity, and they are anxious both to receive their share of others' largesse, and also to

> maintain their own status and reputation for magnanimity. When the actions of individuals do not coincide with what others expect from them, strong sentiments are raised which must be dealt with in some way. Stinginess, and the failure to cooperate and provide hospitality, thus put the themes of interdependence, generosity, and emotional containment to an acid test, for these values are among the primary cohesive forces uniting the community" (Savishinsky 1974: 70-71).

Through these works of Savishinsky (1974) and Rushforth and Chisholm (1991), it is possible to roughly envision how social organization within *K'asho Got'ine* groups was historically maintained, and to appreciate that the fundamental values of autonomy, cooperation, and generosity appear to be highly useful for coping with the challenges of ecological variability and resource scarcity. I now turn to literature elaborating on the specific ways in which hunts were conducted and organized.

Hunting Organization:

One of the most basic ways in which hunting techniques can be flexible is represented by the option to hunt individually, or cooperate within a group of hunters. These strategies reflect the themes of autonomy and cooperation outlined above.

The Solitary Hunter:

Thorough descriptions of individualism in Dene societies are given by Christian and Gardner (1977), and Ridington (1988), who highlights the importance of knowledge, power, and individual intelligence in the 'adaptive competence' of northern hunting peoples (108). The point is reflected in various accounts of hunting. Savishinsky (1974), for instance, tends to relate hunting as a relatively solitary endeavour, with 'the harvester' being provisioned by his family and supplying their group with meat, while Osgood (1932) and Hultkranz (1973) also indicate individual hunters stalking dispersed moose during the winter. Although most accounts of caribou hunting involve cooperating hunters, one of Petitot's records (1893: 393) indicates that a single hunter would also sometimes target caribou by imitating them. It is worth including his description at length:

> "Hidden behind a clump of green spruce which shielded us from the view of the caribou, Dattonhi drew from his net gamebag a caribou hide complete with its hair, to which was attached the head of the animal surmounted by its antlers. He rigged himself out with this, placed the openings of the caribou's missing eyes in front of his own eyes, loaded his gun, took it in his arms ready to use, and, with a piece of caribou antler that he held in his right hand, he struck the stock of his gun with little blows to imitate the noise made by a caribou rubbing its antler against lower branches to detach it. At the same time, signalling us to stay hidden downwind behind the spruce, he showed himself to the astonished caribou, all the time making certain contortions with his head to imitate the movements of these graceful animals. His costume being entirely of caribou skin, fur outwards, he was able to approach them until a short distance from his prey. On seeing him, the caribou stopped, looked with curiosity, and came forward. The old man quickly shouldered his gun and fired. Then, when the caribou bolted, he pursued them. He stopped when they did, called them back to him by the same ploy of pretending to be a caribou in rut, and fired again. In this ingenious fashion, Dattonhi killed five caribou in short order."

Cooperating Hunters:

Although caribou were sometimes stalked individually, many ethnographers have documented larger-scale harvesting techniques. Osgood (1932: 40) describes that "caribou were formerly killed in great quantities on the barren grounds. The methods included stalking, decoying, impounding, snaring, and spearing. The hunting was done generally by a band or group as a communal affair initiated by either of the two most important men, the best hunter, or the oldest man." Hultkrantz (1973: 119) indicates that "The early spring in April, and the late autumn in August and September, when the caribou stayed close to the woodland limits, were the regular times for hunting." Savishinsky (1974: 47), and Duffy (1979: 25) also note that groups of 'Hare' Dene would also move onto the tundra in the summer and early autumn to hunt caribou. These processes of collectively harvesting large number of caribou are described by several authors, including Osgood (1932, 1970 [1936]) and Arnold (1989: 14), who writes about the 'caribou eaters':

> "Impoundments were constructed in clearings or on frozen lakes or rivers. The corral portion of the impoundment was built of brush, and ranged upwards to one-and-a-half kilometres around, and sometimes even larger. Inside were shorter brush fences, which were set up to resemble a maze,

> with babiche snares in the openings. A narrow entrance was flanked on either side by a row of brush opening into a wide 'V'. The wings of some impoundments extended outwards for several kilometres. This type of construction took considerable energy to build and maintain, and was most economically done by a large number of people working together. The hunt itself was also a community affair. When caribou were spotted, almost everyone in the camp positioned themselves to drive the caribou first into the gathering lane and then into the corral. While the women and children circled the fence, shouting to prevent the caribou from breaking through, the men speared the animals with had become entangled in snares and shot those still loose using bow and arrows."

Thus hunting was conducted at many different scales. Indeed, diversity in resource use has been seen as correlated with a range of social orders, such as bands and task-groups, whose composition rested on effective systems of cooperation (Helm 1965, Ives 1985, Ingold 1988). And with seasonal variability of resources, these social formations also assumed seasonal characteristics (Savishinsky and Hara 1978, Rushforth and Chisholm 1991), with the largest gatherings being facilitated in the summer by fish camps along the Mackenzie River, and the autumn caribou migrations near Horton Lake. Ives (1985: 25) describes that while on the barrens for caribou, the 'meat camp' featured "15-50 families gathered close to the largest accessible caribou herd. These groups persisted throughout much of the winter…"

The frequent accounts of flexible hunting strategies in ethnographic literature on hunting in northern Dene contexts raise questions of how such strategies were organized. Helm (1965) outlines bi-lateral kinship principles of group formation, and emphasizes the fluidity of leadership roles, describing that people of particular skill and ability to provide for a group became leaders based on the willingness of others to follow them (see also Christian and Gardner 1977: 91-2). Rushforth and Chisholm (1991) relate much the same in their remarks on the Bearlake Dene tendency to militate against attempts to entrench authority. Osgood (1932: 74), however, describes that within some groups of 'Hare', a more established arrangement of 'two chiefs' provided leadership. "The first was the 'Oldest Man' and it was unlucky not to obey him. The second was the 'Best Hunter' of moose and caribou. When the 'Oldest Man' gave inadequate advice, then the 'Best Hunter' was turned to, but the latter never equalled the first chief in power."

As such, the literature is inconsistent on the ways by which cooperating harvesters organized themselves, which is unsurprising given the theme of 'flexibility'. Nevertheless, sources are in agreement that hunting in groups was an important strategy regarding autumn and winter harvests of barren-ground caribou. I now turn to accounts of the contemporary versions of collective hunts, in which formal community institutions sometimes play a role.

Contemporary Collective Hunting:

Both Rushforth (1977) in the *Sahtúo'tine* community of Déljne, and Castro (2011: Pers. comm.) in the Innu community of *Sheshatshiu* in Labrador summarize two forms of contemporary caribou hunting, differentiated by the role of community institutions. 'Community-organized' (Rushforth), or 'Communitarian (Castro) hunts are supported and organized through formal agencies, while 'Individually-organized' (Rushforth), or 'Cooperative' (Castro) hunts are not organized or supported through them.

Castro (2011: Pers. comm.) describes several possible processes of decision-making regarding the 'cooperative' type of hunting. Hunters may visit one another to check potential contributions of equipment and willingness to participate, or sometimes a more opportunistic consensus can form based on travel and hunting conditions. One account of such a hunt (organized within an extended family) in Fort Good Hope is given by Smith (1986: 54) who joined a family at their camp beside Loon River for 'spring hunt'. She emphasizes that

> "Spring hunt had a number of foci. In a productive sense, there were two major objects: the spring hunting of beaver and rats in open water along river banks for furs and meat, and the hunting of birds at various points along the Mackenzie River on their way north. However, spring hunt is also considered a very special activity in a social and personal sense. It is valued as a time when people get together to enjoy the coming of warm weather, new company, a change in diet, and a different location. Spring hunting activities are considered exciting, enjoyable, and something that is good for families to do together, or even for children to be sent on with relatives."

She also describes the importance of such group activities for their learning components (1986: 64):

> "Bush activities were also valued for what might be called their cultural aspects. Young people expressed pleasure in being with older people and learning from them. Slavey-Hare was spoken over half of the time (depending on the participants), and history and old stories were told in the context of daily bush activities. Values such as hard work, skillfullness in bush activities, and sharing were features of daily life. These features, together with the enjoyment of the beauty of the land around them, were spoken of often. As well, stories were often related of incidents that occurred to some friend, relation, or ancestor at a particular place, tying the present bush activities to those of others. Often, these stories were the subject of reverence, and through them were an important expression of respect."

Regarding the second type of hunting, Rushforth (1977) explains that community-organized hunts lasting three to four weeks targeted primarily barren-ground caribou, were supported by the Game Management officials of the government of the Northwest Territories, and occurred both in the late winter and late summer. He relates the development of community-organized hunts in a positive light, explaining that they played a role in facilitating continued harvesting by families who faced increased difficulties accessing their previous hunting areas given their permanent residence at Déljne.

> "Since people no longer live on the North Shore and around Hottah Lake, it is more difficult, nowadays, for them to hunt barren-ground caribou than it was in the past. In response to this, new kinds of technology (e.g. snowmobiles, larger boats, and chartered aircraft) and new kinds of work groups (e.g. hunting groups organized by the Band Council and Hamlet Trappers Association) have made it possible to continue to hunt for caribou" (Rushforth 1977: 35).

The characterization of collective hunting strategies as assisting hunters in accessing the land is also made by Kruse et al. (2004: 824), who consider a 'trigger' for community hunts in the Gwich'in community of Old Crow in cases where less than 50% of the community need for caribou is met. They characterise such efforts as the pooling of household resources to hunt collectively in areas where caribou have been seen in sufficient numbers. Castro (2011: Pers. comm.) describes two foci for communitarian hunts in *Sheshatshiu*, Labrador depending on which institution is involved. The local band council organizes them to acquire meat for those people less able to provide for

themselves- especially the elderly, while the regional co-management board utilizes them to promote cultural knowledge, skills, and assert autonomy (9). Notably, the latter objectives share many themes with Smith's (1986) account, above.

Within the literature exploring historic and contemporary collective hunting practices, continuity is evident in that hunters still go hunting in groups. The way in which they do this, however, has changed in some cases through the formal role of community institutions. In addition, descriptions of contemporary collective hunts identify at least two purposes: they can help people in settled communities access country meat, and they can provide a means for passing along cultural traditions to younger generations. In terms of social-ecological resilience, contemporary collective hunts can be characterised as a binary tool- they are a form of organization that can be deployed to maintain hunting as a viable pursuit in the context of a community that cannot relocate in conditions of resource scarcity, and also a tool to bolster the skills involved in hunting so as to promote the continuation of the livelihood's viability for younger generations. However, ethnographers' accounts of the latter objective also reflect that younger people may not be seen to possess sufficient hunting skills, and as such that the resilience of the livelihood is considered to be in question.

I now turn to the role of distribution (food-sharing) in the social-ecological resilience of *K'asho Got'ine* peoples. There is much literature on the dynamics of food-sharing, compared to that on hunting patterns, and many descriptions as to how sharing processes change in different conditions, and over time.

Hunting and Food-Sharing:

My objective of identifying changes in sharing patterns between collective and household-scale hunting, is premised in anthropologist Tim Ingold's (1988: 282) point that "responsibility for both production and distribution lies neither with the individual (outside society) nor the society (outside the individual), but with the person constituted as a wilful agent within a matrix of intersubjective relations. This conclusion serves to introduce... sharing, as an experience of intersubjective involvement". In this way, sharing as companionship brings together the realms of distribution and cooperative procurement of resources into one construct. Sharing "…does not come into play at the

end of production, but rather constitutes the common purpose that people bring into the productive process itself. This purpose both originates with, and seeks fulfilment through, the community as a whole" (Ingold 1988: 283). Sharing is also important in a practical sense, as for people in northern community hunts who have not recently hunted, their access to country foods such as caribou rests on others and is therefore mediated by the dynamics of sharing. Sharing can also have particular ecological motivations; for many Aboriginal groups the idea of a separate 'natural' (ie. lacking humans) environment is incoherent and thus the landscape and wildlife are understood in social terms (Ingold 1986). Feit (1991) therefore nests Algonquin sharing practices in an overall ontology of reciprocity with the earth. In the Sahtú community of Déljne, Rushforth and Chisholm (1991) also describe sharing as part of respecting the animals harvested, which if neglected, will lead barren-ground caribou to avoid a person or community the following year. The holistic perspective of the environment (encompassing social and physical realms) is inherent in the statement: "that is why we share caribou, because one of us turned into one" (Rushforth and Chisholm: 1991: 29). Thus the realms of distribution, production, and even the characteristics of the resource itself have been argued to be one ontological entity.

Insurance and Reciprocity:

The ethnographic material regarding food-sharing in northern Dene societies is relatively consistent in characterising the practice historically as a form of insurance (Helm 1965, Osgood 1970 [1936], Savishinsky 1974, Asch 1977, Sharp 1977, Jarvenpa 2004). In Colville Lake, Savishinsky (1974: 162) remarks that "the successful hunter or fisherman helped out his less fortunate fellow villagers because next month, or perhaps next year, their respective positions may be reversed". It is on this basis that sharing arrangements have been summarized in terms of resilience theory as a practical 'coping mechanism' to address short-term inequities in resource availability (Berkes et al. 1994, Nuttall et al. 2005). With this 'insurance' lens also comes an assumption of reciprocity, which has been widely interpreted in communities throughout the north, although it is a much-contested term in academic analyses (Hunt 2000, Hovelsrud-Broda 2000). The term has been recently applied in Fort Good Hope, however, with Kulchyski (2005) characterising the social relations of food distribution there as 'generalized reciprocity'.

Sharing after a Hunt:

Savishinsky's (1974) and Christian and Gardner's (1977) accounts distinguish patterns of sharing based on different expectations for generosity depending on the type of harvest: moose, caribou, or fish, and the degree of shortage experienced by the group. Although small and plentiful species such as fish or even caribou might be given to socially close members of a community and to those who requested it, moose entailed a complex distributional system as "everyone wants some of this large animal" (Christian and Gardner 1977: 265). Savishinsky reports that in Colville Lake large game such as moose taken in a lean season would be 'given' to another (socially close) person, who would supervise the butchering and distribution at the kill site. Osgood (1932: 40), however, seems to implicate this form of sharing more broadly, that when hunting parties were organized by the best hunter, or oldest man, "Whatever meat was procured was given to the latter for distribution".[3] Osgood's most detailed description of such a process is within the Peel River Gwich'in group (1970 [1936]). Notably, this entailed the recipient's responsibility to actually orchestrate its retrieval from the bush; it is worth presenting his description at length,

> "Immediately after a hunter kills any one of the four large game animals [caribou, moose, Dall's sheep, and bear], he butchers it and then caches the meat, generally by hanging it in a tree. If seriously in need of food he will take some of the meat to his camp but otherwise he will return to his camp without it. If he has a family, he will tell all the people that he has killed such an animal and then present the carcass to some respected hunter, often a member of his wife's clan but sometimes of his own. If the person who kills the game is unmarried, he tells his father of his success and the parent makes a speech commending him before the people and afterward giving the meat away. In either case, the individual receiving the meat must send his friends to bring it into camp and afterwards make a feast for all. In discussing this method of disposing of all large animals killed, a practice typical of Northern Athapaskan tribes, my informant pointed out the fact that the custom saved many people of the tribe who would otherwise starve because of some incapacity to kill game for the themselves" (Osgood 1970 [1936]: 28).

[3] Hultkrantz (1973) seems to take this as an indication of collective ownership of the harvest.

Savishinsky's (1974) account differs somewhat from Osgood's in terms of the responsibilities of the recipients. Whereas Osgood's description has meat brought back into camp, Savishinsky reports villagers in Colville Lake going to the site of the kill (by boat, dogsled, or on foot) where the meat was distributed to them by the person given the meat originally.[4] But both Osgood (1970 [1936]) and Savishinsky (1974) give the impression that sharing processes are related to maintaining harmony with a group. Osgood, for example, subtly mentions that among Crow River Gwich'in, formal sharing arrangements deliberately bridged clan lines. Meanwhile (and more overtly) Savishinsky proffers that rewards to the harvester occurring through a gift from another smooth out potential grievances within the group regarding a disparity in luck. Notably, both authors also assert that sharing played a critical role in ensuring the survival of northern Dene groups.

> "The meat and hide received by the successful hunter ultimately come to him as a gift from the distributor rather than as a direct windfall, and envy of him is thus less concentrated. The distributor, who also retains a sizeable percentage of the animal, similarly comes off in a good light as the man who is generous with other people's largesse. This variation on redistribution, by deflecting envy, dilutes it. The egalitarian outcome of the situation maximizes band survival by guaranteeing people a minimum level of access to the food" (Savishinsky 1974: 72).

It was also common to share meat in response to a request (Osgood 1970 [1936], Savishinsky 1974: 71, Christian and Gardner 1977: 68, Rushforth and Chisholm 1991: 53). This subtle art is best described by Helm (1965: 34-5):

> "[P]restations from one household to another are occasionally volunteered but usually solicited… Solicitation appears often to take the form of a simple statement of lack, or need; that this is a request is understood. Generally, there is no promise actual or implied, or repayment in kind or value. Those families that seldom ask others for goods seem to be those more likely to voluntarily 'repay' in some form equivalent at a later time, but 'repayment' or counter-prestation is not seen as obligatory, or even to be expected."

[4] Christian and Gardner's (1977) description is more alike to that of Savishinky than Osgood, although they are ambiguous as to the community from which their research emerges.

Regarding more formal collective hunting activities, Helm (1965) describes a process of centrally-distributing the harvested meat. Her account details that fifty or sixty Dogrib Dene hunters would depart in canoes on hunting expeditions for caribou annually in August or September, and that a consensual hierarchy was evident within the group.

> "Once in the hunting grounds, the crew splits up daily or overnight into parties of two or three hunters each, each party going a different direction upon the advice of the leader and consensus of the group. The 'boss' of each crew, as a part of his role, oversees the even distribution of each day's kill to all members of the crew, after the food for the day has been set aside. The hides are taken by the slayer of each animal. In this large scale hunt may be perceived a somewhat different mode in group distribution. Here allocation proceeds not from one household to others, but under the aegis of the focal figure who treats production, regardless of which small hunting party actually kills the game, as the enterprise of the whole group of which he is the consensually recognized director and allocator. Except that the hide 'belongs' to the slayer, all distribution is equal" (Helm 1965: 36-7).

In such hunts supported by community agencies in Déljne, Rushforth (1977) describes that the large harvests were stored in a community freezer, but unfortunately does not elaborate on the processes by which the meat is distributed. He only notes that "About ninety of the caribou were placed in the community freezer for distribution among all of the Bear Lake people, with the remaining seventy-five or so going to individual hunters' families" (Rushforth 1977: 35).

Sharing and Resource Variability:

Clear in the above material is the role sharing plays in levelling disparities of resources within a group, a role that becomes more complex as the quantity of a harvested resource (and therefore the potential disparity) increases. But this then begs elaboration on the various conditions of scarcity in which such patterns of sharing operate. In the historical context of the *K'asho Got'ine* this question may be all the more relevant, as the ethnographic literature seems to indicate particularly harsh subsistence conditions in their region (Osgood 1970 [1936]: 60, Hara and Savishinsky 1978: 317, Johnson and Ruttan 1993). Rushforth and Chisholm (1991) are particularly infuriating in relation to questions relating to resource variability, as they offer

systematic accounts of peoples' expectations for reciprocal assistance in Déljne without any illumination as to what conditions might justify those particular expectations. Jarvenpa (2004) includes eloquent and meaningful stories of some 'hard times' experienced by his Chipewyan participants, and his account of their travails is one of them searching for a more prosperous winter staging community, but he does not illuminate the actual detail or process of the assistance expected/received/accessed. Sharp (1977) is more helpful here, in linking Jarvenpa's account of groups' dependence on one another to their collective subsistence strategies, describing that 'Caribou-eater' Chipewyan would harvest excess caribou in order to distribute the surplus to less fortunate neighbouring groups.

In addition, alternative subsistence options are investigated by Smith (1978) who focuses on information networks between bands essential for Caribou-eaters' ability to locate alternative herds for hunting in the event that an expected herd is diminished. This recalls a similar point as Ingold's (1988) above, that food sharing between groups was/is only one facet of their social relations (1978: 82). Savishinsky (1974: 76) also links hunting and sharing strategies to ecological conditions in Colville Lake, emphasizing the flexibility that the universal ethic of generosity inculcates.

> "If one compares the way in which the generosity ethic operates in regard to moose, caribou, and fish, to take just three examples, it is evident that the system is flexible enough to allow different kinds of expectations to be in force according to the degree of scarcity of the various commodities. The system is flexible, however, not only in terms of the scarcity of goods and services involved, but also in regard to the varying needs that people have at different points in time. An individual's friends, close kinsmen, and distant relatives may each experience shortages of the need for assistance during different parts of the year, and the ethic permits the individual in question to act generously in accord with current necessities and his own circumstances. Conversely, a family that is in need of help can usually call upon, or choose from, a wide range of kin and non-kin to assist them, basing their choice upon the current economic position of their various sagot'ine, and their past history of mutual cooperation… Since a person's possession of surplus food, time, or equipment is partly a function of his luck in a somewhat unpredictable environment, a rigid set of rules that bound him to dispensing his goods and services through a rigid network of kinsmen might not benefit those who were most in need at any particular

> moment. Conversely again, a family that could only rely upon specific relations in order to obtain assistance might find themselves, at certain times, without access to those persons in the band who could help them most in their current distress… therefore, one can suggest that a flexible implementation of generosity as a cultural value allows for the redistribution of scarce goods and services in a way that maximizes the well-being of all concerned."

Other techniques of addressing historical scarcity besides food-sharing are explored in some ethnographic material. Janes (1991: 134) takes it as obvious that rationing was traditionally practiced by northern Athapaskans, but offers no details. He also only briefly remarks on the use of food-caching, although this is described somewhat better by Osgood (1970 [1936]). Their accounts are generally consistent with Woodburn's (1998) emphasis that sharing should not be considered a result of difficulties preserving harvested food, as Indigenous cultures have generally mastered such methods. In a similar vein, Ingold (1983) illuminates the importance and diversity of norms of storage and rationing in hunting cultures, and stresses that the necessities of storing food should not be considered the cause of sociality, that the two phenomena may just as easily have evolved separately. Ingold does, however note that when sharing is phased between people, it can mitigate the need for storage, but that 'practical' storage (the common understanding of the term) does not necessarily alter social obligations to share. In contrast, Ingold's (1983: 561-63) concept of 'social storage' is premised on a store being "considered in its aspect as property or wealth, and storage as a concomitant of social relations of distribution", and thus is "the direct negation of sharing". He in fact proposes a theoretical definition of a hunter-gatherer society as one in which social storage and labour designed to appropriate a natural stock do not occur. But at this point, it is critical not to characterise contemporary *K'asho Got'ine* society simply as modern hunter-gatherers, but to recognize the mixed economy from which people gain their livelihoods. How are the ways of sharing functioning in communities currently?

Contemporary Sharing:

In this contemporary context, a 'scarcity' of harvestable sustenance does not carry with it a looming threat of starvation for northern communities; store-bought food

substitutes are certainly available. However, as the GNWT Wildlife Division (2008) website points out, "Even though people will no longer starve when there is a shortage of caribou, declines will still bring economic and social hardships." Such an effect is understandable upon considering the wide literature on the values of country food to contemporary northern communities, including their connection to spiritual and cultural values (Wein et al. 1996, Nuttall et al. 2005), health and wellness (McGrath-Hanna et al. 2003, Parlee et al. 2007), nutritional benefits (Usher 1976, Kuhnlein et al. 1994, Guyot 2006), and economic value (Berkes et al. 1994, Usher et al. 2003, Nelson et al. 2005). Alternative store-bought foods are also often highly expensive, reflecting the relative isolation of northern communities (Todd 2010). A scarcity of country foods thus may have direct implications on peoples' ability to meet their dietary needs, despite the presence of store-bought alternatives. Regarding food-sharing arrangements and conditions of scarcity that occur in contemporary northern Dene communities, Parlee et al. (2006) employ a framework of common-property to discuss the norms of sharing berry-harvests in Fort McPherson. The authors account for social rules related to accessing berry patches, and sharing harvested berries, describing that rules generally become more flexible with the increased abundance of the resource. In contrast, rules of access (such as a family's claim to a particular berry patch) or sharing (such as who are considered acceptable recipients) are tightened in times of scarcity. Notably, the authors describe that information-sharing on berry-picking sites follows an inverse trajectory (much information-sharing in times of scarcity, and less in times of abundance). It is unclear, however, if this is consistent with Sharp's (1977) and Smith's (1978) work with the Chipewyan, which indicates material as well as informational cooperation between groups to combat scarcity. Although Parlee et al.'s account relates to variations in resource context, there have been other observations of sharing norms adjusting based on variations in hunting context. Castro (2011: Pers. comm.), for instance argues that contemporary communitarian hunts in an Innu community are problematic as hunters are paid for their efforts as under a contract, which he critiques for leading to the potential alienation of traditional sharing norms through the introduction of a central intermediary that finances the hunt and is also responsible for distributing the resulting meat.

The available ethnographic literature seems relatively consistent that the transition to sedantarized larger communities has had profound social implications for Dene peoples, but is less unanimous in terms of observing continuity and change within food-sharing norms. Helm (1965) follows Sahlins (1965) in noting a more conscious and measured norm of reciprocity operating in larger 'fort communities', while Savishinsky (1974) laments the disintegration of an ethic of generosity in the almost-urban Fort Good Hope. Jarvenpa's (2004: 154) informant also speaks of his community's condition in the 1990s. "My Silot'ine, my relatives, are pretty much all right here in the village, you know. I don't have to go far to find them. But we don't help each other the way we used to in the bush." Other authors are keener to observe continuity, however. George Barnaby et al. (1977: 120) describes the *K'asho Got'ine* sharing system as continuingly egalitarian "whether it be a settlement or a trapping camp", while Rushforth and Chisholm's (1991) study is prompted by the observation of the stability of Bearlake sharing system despite significant other social changes. In large settled communities Asch (1977: 54) describes sharing as operating in part according to families' former proximity, "between families that had once co-resided within a single local group", and contends that sharing within the traditional economy continued in segregation from the newer wage economy. He does, however, also mention a 'surplus' of meat being necessary for sharing, which was absent from his account of bush-settlements (Asch 1977: 16). Helm herself, despite the observations of changing social norms in sedentary settlements, does also note that <u>expectations</u> for meat among potential recipients were unchanged from the former bush-camp context (despite that a hunter's ability to meet these expectations might be strained in a larger community) (Helm 1965: 36). Nelson et al.'s (2005) research in a Northern Alberta Cree community also records that reduced harvesting in modern Indigenous communities impedes remaining harvesters' abilities to look after the wider group, forcing them instead to focus on their own families. The authors do recognize mechanisms to ameliorate this, however, noting that in some James Bay communities harvest subsidies were introduced that led families to produce more meat for themselves, which reduced stress on sharing networks. Thus, although there is little disagreement about the sedentarization of Indigenous groups entailing profound social changes generally, conclusions are less unanimous about continuity and change in Dene (and Cree) food-sharing arrangements.

Linkages with the Wage Economy

Often described in tandem with the increasing permanence of communities are observations of the interrelationships between Dene food-sharing practices and features of the wage economy. These are also diverse in their conclusions, with Asch (1977) proffering the complete separation of the two spheres of interaction while Janes (1991) notes early linkages between the two. Summarizing Richardson (1852), Janes (1991: 95-6) states that "When a deer (caribou) had been killed, it was divided among the Native group, with the exception of the tongue and ribs. These pieces became the property of the hunter, and were then processed by his wife for the sole purpose of trade". Savishinsky (1974) considers the commodities related to the wage-economy (traps, rifles, household items) as subject to norms of generosity, but are considered property and thereby loaned (often reciprocated with a gift of food) as opposed to given. In an investigation of the impacts of a more recent industrial development, Bone (1985: 19) finds no evidence of changes to country food consumption in Norman Wells following the construction of the Zama oil pipeline in 1982, and actually seems to infer an expansion of sharing networks to explain how wage-earners were provisioned with food. In Ulukhaktok, however, Collings (2011) describes wage-earners contributions within sharing networks as less extensive, focussing more on close kin than full-time harvesters who share more broadly. Given these inconsistencies, it may be most prudent to conclude with Todd (2010), who describes that (in Paulatuk) few clear-cut relationships can be discerned between hunting and wage economy participation.

Social Relations and Food-Sharing:

Although many patterns of sharing have been discussed in relation to hunting techniques and resource variability in historical and contemporary communities, the ways that sharing norms operate in different societies are rife with additional layers of social meaning. Some of these are evident in the above descriptions of how specific ways of sharing help to maintain social harmony within a group. In this vein, two major themes are evident within literature on sharing: the respective influences of kinship structures, and power. I explore these in order to give them due consideration as explanations for sharing, although their dynamics are beyond the scope of my study. I

also review work that highlights the complexity of meanings potentially active in sharing interactions in different cultures, using the example of sharing in response to a request.

Kinship:

Kinship structures have often been cited as a primary influencing factor in the sharing of resources, and are reflected in Osgood's (1970 [1936]) indications above, that meat-sharing norms deliberately bridged clans among some groups of Gwich'in. Many sources, however, consider 'the group' as the fundamental unit of sharing historically; this is also demonstrated by Osgood's (1970 [1936]: 112) note that "hospitality between members of the same group almost goes without saying. In regard to meals, people may be found eating in almost any neighbour's house, for they like to gather together and gossip". According to Jarvenpa's (2004) retrospective of the Chipewyan, the social structure of northern Dene groups (re-formed annually) was itself underpinned by a 'Silot'ine' kinship pattern whereby a prospective joiner was 'sponsored' by immediate kin already in the group, but he also makes a point of recognizing the agency with which people chose to assert kinship connections. "…[C]onsiderable confusion in kinship analysis has arisen from blurring the distinction between cultural categories and social groups (or action groups). Accordingly, we need to distinguish between, on the one hand, *silot'ine* as a significant construct in Chipewyan ontology and, on the other, *silot'ine* as actual networks of kin who assist individuals in specific times of stress or crisis" (Jarvenpa 2004: 154). This relates to a similar description given by Savishinsky (1974: 76), who also acknowledges that kinship and social closeness can clash in many cases, and create ambiguities in terms of responsibilities for generosity (70-1). Honigmann (1946 [in Rushforth and Chisholm 1991: 22]) also separated food-distribution from kinship as drivers of social cohesion in Déljne, although Rushforth and Chisholm themselves describe in 1991, that less meat is shared with more-distant kin. Finally, Ingold's (1988: 282-3) redefinition of sharing itself (as companionship) is specifically "contrasted with the idiom of kinship which implies the placing of people under obligation, creating mutual dependency rather than preserving the personal autonomy of those involved". Thus, although kinship is almost always described as important, there are many indications that family structure is not the only organizing factor in food-sharing arrangements.

Harvester Acclaim and Power:

No thorough discussion of sharing dynamics can avoid commenting on how power is potentially involved. Savishinsky (1974) above characterizes a central distributive sharing pattern as deliberately mitigating the accumulation of power. Helm (1965: 38), Savishinsky (1974: 161), and Rushforth and Chisholm (1991) all agree that Dene social organization militates against the entrenchment of authority, and that 'chiefs' would often be reluctant to take actions that could be interpreted as authoritative. Osgood (1932), however, notes the esteemed position of the 'best hunter' within a group. Rushforth and Chisholm (1991) also link harvester acclaim to particularly difficult and dangerous subsistence prey such as moose, describing that "the successful moose hunter who shared his kill among the people was accorded great prestige". In addition, Osgood (1970 [1936]: 53) and others have noted that festive practices occurred in honour of a young hunter's first kill. Material benefits linked to hunting success are proposed by Asch (1977: 48), describing that "there was apparently some formality concerning the way in which certain animals were shared in that specific parts were reserved for the hunters and persons closely related to his or her immediate family. In this way, individual ability could be recognized, but not at the expense of the collective good". Ingold (1983: 563) warns, however, that prestige and authority need not imply material accumulation, as it is unnecessary if a successful hunter becomes 'renowned', and social-material relations are 'mystified' by a disconnect in social perspectives: the group's right of collective access, and a hunter's sharing as enlightened generosity, which lead to the same material result. Helm (1965), agreeing that status accumulated to those best able to provide for others, considers that such 'enlightened generosity' might have been augmented through the fur trade, noting that someone seeking greater authority within a group would make especially generous gifts of food to all within it.

At another scale of power- that between communities and external forces, Feit (1991) ponders Algonquin sharing as a symbol of cultural self-distinction. Asch (1977: 54) also notes continuity of sharing even in the context of "official counter-pressures against the ideology of reciprocity- for example, through government supervision of the distribution of game kept in community freezers". Kulchyski (1992) offers a slightly different lens on

this, considering that 'subversion' against unpopular external authorities is often implicit in ubiquitous practices such as sharing.

Interpreting the Social Roles of Sharing:

Identifying social influences in sharing patterns based on observed interactions is thus a complicated task. One form of sharing in particular that has been the focus of a variety of fierce debates in sharing literature from a multitude of cultural contexts is sharing based on a request or demand. What does a request signify? Osgood mentions that for the Gwich'in, direct requests were considered bad form and involved a loss of pride for the needy party (1970 [1936]: 112). In some cases, Rushforth and Chisholm (1991) note that children in Déljne may be employed as intermediaries for adults in request-making processes. These authors offer an exceedingly detailed and nuanced examination of the meaning of demands, elaborating on the complex meanings that they can signify. They explore three questions.

> "How can one Bearlaker attempt to direct the actions of another while simultaneously respecting the culturally legitimate autonomy of that individual?... Second… how can a Bearlake speaker perform directives without implying that he or she is somehow deficient in self-reliance and personal autonomy? Third, how can one Bearlaker (an addressee) legitimately refuse to comply with the directives of another while simultaneously appearing generous and cooperative?" (Rushforth and Chisholm 1991: 39).

In reconciling these apparently contradictory cultural norms, Rushforth and Chisholm delve into the speech patterns of the Slavey language, and contrast formal indirect speech where the recipient must infer meaning from context, with blunt direct speech that symbolises close friendship. Their participant explains, "This is telling someone to do something so it is like a command… it is rough. A [person] would never say anything like this to his father or his older brother or to his grandfather…. To your friend, however, you can say anything… This would not be an order to a friend, it would be an invitation. To friends use any words, rough or smooth… it stand for friendship…" (Rushforth and Chisholm 1991: 43). This relates to a point made by Peterson (1993) who compiles accounts of 'demand sharing' in various Indigenous societies, and

surmises a diversity of meanings for 'a demand', which in some cases may even be interpreted as a gift.

Summary:

A running theme in the sharing literature summarized above is the extent of distribution in different resource contexts and social contexts. Some accounts describe the distribution of meat being used as a tool to maintain social harmony, and seem to imply that a greater harvest bounty necessitates a wider distribution for it to be agreeable (Osgood 1970 [1936], Savishinsky 1974). Others examine linkages between sharing patterns and relatively stringent resource contexts (Nelson et al. 2005, Parlee et al. 2006). Essentially, the overall story is consistent, the former authors showing a wider distribution of relatively plenty, and the latter a narrower distribution in circumstances of scarcity. Their accounts of the degree of attentiveness (i.e. how strictly social norms are applied) to distributive processes are less consistent, however, which may be due to resource availability being not only a function of the resource itself, but also relative to group size. Nelson et al. and Parlee et al.'s works emerge from larger settled communities, whereas Osgood and Savishinsky were based in smaller, less settled groups. Larger community size has a problematic effect on sharing patterns according to Helm (1965), as individual obligations to share with a group can be stretched when the group is bigger. Also, Rushforth (1977) notes that the settling of communities has reduced harvester access to some of their traditional harvesting sites. Large sedentary communities would then seem to be more likely to experience stringent resource contexts, and increased pressure on sharing networks.

Such challenges have necessitated supporting harvesters through new social institutions such as community-organized hunts (Rushforth 1977), and in some cases support has extended into the facilitation of teaching/learning traditional knowledge and skills. Community hunts can therefore be considered a response to social change, and clearly play a role in addressing contemporary ecological variability. These attributes thus warrant my use in this thesis of a framework of social-ecological resilience in considering community hunting and food-sharing dynamics. But the dynamics by which such hunts are organized (i.e. the specific processes by which they are deployed to address the challenges outlined above), and the patterns of sharing that emerge from them also

require clarification.[5] Indeed, as Ingold (1988) asserts, production and distribution are two parts of the same construct, and thus 'sharing' is not just what happens at the end of production, but partially constitutes its purpose in the first place. In addition, just as collective hunting efforts may include multiple objectives, the dynamics of sharing are layered with social meaning, wherein additional forces and motivations are active.

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[5] While Castro (2011: Pers. comm.) does explore these matters, his work emerges from an Innu context which is rather distant from the *K'asho Got'ine* community in focus here.

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Chapter 4: Methodology

> *(Me) What's the most important question that I should ask about the meat distribution in Fort Good Hope, or the... the way that people help each other out?*
>
> *(Participant 08) ...I think you're doing ok, but... it's going to be up to you to change it, as you understand it more, by talking to peoples... and how they answer you, or how they answer your questions. You learn to understand: ok this is how I should do it, or this is how I should broaden the question... But it's going to be up to you to see it for yourself what you should change... your scope is so limited, you know what I mean?... But it's going to be you. By talking to peoples you'll know better, you'll see it better.*

This project was guided by the literature on community-based participatory research (Fletcher 2003), while mixed methods characterised its data collection. The bulk of data collection was in qualitative form, through focussed ethnography, participant observation, and semi-structured interviews. Additionally, quantitative surveys were conducted with many interviewees to provide data regarding social-economic household indicators, and meat-sharing actions. Two community workshops were also held as part of the data-validation process, and a community organization (the Renewable Resources Council) continuously provided feedback regarding emergent study results.

In his reflection on cultural perspectives about the future, Bates (2007) makes an example of 'the research plan' and its limited ability to meet the novel challenges of fieldwork in the Canadian North. Bates contends that 'the research plan' is a product of a particular (western) orientation to the future, which often clashes with the Indigenous philosophies of flexibility and immediacy that are far more appropriate in northern environments. In the North plans indeed go awry, and the methodology that appears here is not exactly what I had first intended. It has been adapted, adjusted, and sometimes reversed in response to emergent conditions in the field (hopefully for the better), and it is thus a necessarily simplified version that follows. Appendix 1 offers a summary of data sources used.

Methodological Background:

Research guides on social science research contexts continually emphasize the need for the researcher to be cognizant of any power differential between themselves and research participants (Francis 1992). Sensitivity to power dynamics is made more complex in cases of cross-cultural research, however, as the researcher is less familiar with their various and changing forms. Power relations can be implicated in innumerable ways across a spectrum from overt obvious domination to covert structural inequalities, paradigms, and epistemologies (Lukes 2005), and much has been written highlighting the ways in which power structures between researchers and Aboriginal peoples have been deeply problematic.

Smith's (1999) treatise on the history of Aboriginal perspectives on the western scientific paradigm persistently exposes the inequitable dynamics of power embodied in much of the research that has concerned Aboriginal populations since the contact era. She argues that the prevailing scientific paradigm emanates from a paternalistic sentiment that presupposes a linear path of 'development'. Such paradigms have characteristically positioned Aboriginal peoples as the 'objects' of research, often in a context of the social engineering objectives of non-Aboriginal governments. Smith (1999: 67) is critical of anthropologists in this regard, as their ethnographic work at one time comprised the leading edge of imperialism. In the Canadian north, Smith's concerns are reflected in research conducted in the context of federal policies designed to increase Aboriginal participation in the wage economy (Nuttall et al. 2005). This has included the sedentarization of Aboriginal communities, imposition of western education systems, and restrictions imposed on Aboriginal wildlife harvesting practices (Usher and Wenzel 1987, Usher 2004, Nuttall et al. 2005). Cumulatively, such breaks with traditional systems have had profoundly destabilizing social implications for many communities, while participation in the wage economy often remains a challenge (Anderson and Poppel, 2002). The complicity of researchers in some of these developments is troubling enough, but their work has also been shown to be flawed in some cases (Fletcher 2003). Regarding caribou harvesting, for instance, policies that limited Aboriginal harvesting were founded on wildlife studies that never clearly demonstrated that Indigenous harvests were a threat to the survival of the herds

(Freeman 1992). Such problematic studies have led to an interrogation of research methodologies concerning northern Canadian Aboriginal communities. Freeman (1977: 71), for example, has chastised some researchers for:

> "Failure to seek permission from the community before subjecting its members, their activities or their immediate environment to detailed examination; failure to consult with residents as to whether, in their view, the study is appropriate or could be modified so as to cause less stress to them or their environment; failure to keep them informed of the course of the investigation thus precluding any mature involvement with them, or the degree of recognition or respect for their intellectual curiosity. As a final *faux pas* the departing investigators, after assuring some local people that a copy of the results will be sent to them, will only too likely fail to send back any report on the work they have carried out."

Fletcher (2003: 36) considers these characteristics "offensive at an individual level," and indicative that Aboriginal culture has too often been considered a lesser priority to scientific 'objectivity'. Such objectivity is challenged by Fletcher and Smith (and others) on the basis that no knowledge exists in a vacuum, and the assumptions made by western scientists are not neutral but stem from specific cultural influences that are not necessarily appropriate for research in Aboriginal communities.

Methodological Theory:

This study utilized a methodology involving a core qualitative 'focused ethnography' informed by a participatory approach, which Fletcher (2003) argues is appropriate for conducting cross-cultural social research in northern Indigenous contexts.

Participatory Action Research:

There have been numerous recommendations of mechanisms to remediate these incarnations of colonialist mentality in research. One stems from the qualitative ethnographic approach of 'Action Research' (Richards and Morse 2007: 59). While many forms of action research have been espoused in different contexts, they share a common goal of local empowerment (Johnson 1992, Hoare et al. 1993, Fletcher 2003). This normative theme in action research seeks to combat the historical legacy of paternalistic research through closer and more meaningful collaboration between

researchers and local groups (it is also referred to as community-based participatory action research).[6] Smith (1999: 125) refers to community based action research specifically as one pathway towards advancing an Aboriginal research agenda. Hoare et al. (1993: 51) advocate participatory action research (PAR) as "an integrated approach involving the participation of community members to investigate social reality, build local skills and capacity for the purpose of increasing community autonomy through a process of praxis... It relies on the experience of the people, it values the culture, and it builds human capacity within the community". Other authors make the more ontological point that "Knowing is an engagement with the world, rather than a reflection of the world" (Tuan 1979 in Kendrick 2003: 249), and thus that all knowledge is essentially participatory. Kendrick relates this to the Dene concept of *inkonze*, translated as 'little bit know something' (2003: 248), which also emphasizes the experiential nature of knowledge. Participatory styles of research might then be seen as more culturally appropriate in the context of Dene communities. Indeed, PAR approaches are well-precedented in the context of the Canadian north, first deployed on a grand scale through the Berger inquiry of the 1970s (Fletcher 2003). They have since been highly developed especially in studies of traditional knowledge which challenge western scientific epistemological and ontological assumptions.

Related to participatory research is 'community-based action research', which has similarly been espoused on the basis of actually reversing historical inequalities. This entails community members engaging directly in the design and implementation of a project, receiving training to allow the independent administration of future projects, and retaining control over study results (Johnson 1992, Fletcher 2003). Such arguments have been criticized, however, on the basis that this degree of 'participation' might

[6] Heron and Reason (1997) also argue that all research is actually participatory. They explore this paradigm of participatory inquiry in their critique of the constructivist position as it relates to research methods. The authors contend that constructivism is unsatisfactory as a basis for qualitative research, as it excludes knowledge derived from experience, and therefore contains no mechanism for justifying the arguments of the field-researcher over those of others. The researcher clearly must be able to express some special degree of connectedness with the phenomena of study if qualitative inquiry is to be a worthwhile enterprise. The authors then outline an ontological framework that considers perspectives of reality formed through an interpenetrative relationship between the universe, and one's mind and presence. Thus, people know reality through their participatory shaping of it. This permits an 'inter-subjective' basis for understanding and communication based on mutual experiential knowing. Operationally, this requires democratic dialogue between the researcher(s) and study participants regarding both the study goals and methods. This goes some way to address the concerns voiced by David (2002) that constructivist approaches to research can lead to uncritical advocacy.

actually compromise the integrity of research. Involvement by local groups may risk distortions of the facts, inclusion of inaccurate information, and more susceptibility to local political influences (Hoare et al. 1993, David 2002). Qualitative research guides (and intuition) recognise peoples' interest in 'looking good' as a factor researchers should be aware of. Other guides also relate researchers' feelings of disempowerment in unfamiliar situations- especially novice researchers, which may facilitate partisan interests swaying methods or results.[7] Given these diverse power dynamics potentially operating between the researcher and community members, 'participation' can be a tricky path to negotiate.

Caine et al. (2007) address the issue of knowledge-power relationships in participatory research in the Canadian north by outlining a new 'space of resistance' created through academic institutions, which counters those knowledge-power relationships. This space is formed through somewhat bypassing corporate/governmental organizations, establishing instead direct community-university relations that are more responsive to community concerns while maintaining the benefits of a distanced perspective.[8] The 'academic outsider' is then uniquely positioned, according to the authors, to facilitate meaningful dialogue in power-laden scenarios. Participatory inquiry, in this case, ensures that the researcher is sufficiently grounded in community concerns, while their need to maintain academic integrity balances against bias. Davidson et al. (2006) describe that this can be an uncomfortable journey for the novice researcher, forced by their academy to implement ethical formalities that may be inconsistent with local custom. But the 'new space of resistance' articulated by Caine et al. (2007) revisits the idea of the value of an outsider's perspective.

Ethnography:

Ethnographic grounding contributes to the rigour of a participatory research approach. Ethnography is premised on the idea of the 'outsider, and although challenged by Smith (1999) as historically representing an imperialist project, is not inherently inconsistent

[7] Davison et al. (2006) describe some of the ethical dilemmas confronted 'in vivo' by novice social researchers in the Canadian north, who must balance the ethical guidelines enforced by their academic institutions with what seems right according to local custom.

[8] Caine et al. (2007) acknowledge the issue of increasing private funding to universities potentially compromising the autonomy of those institutions.

with the point that local perspectives must be respected. Indeed, some ethnographic grounding seems necessary if any social researcher is to be effective working in a cross-cultural context. Ethnographies certainly remain a popular means for exploring cultural phenomena and qualitative research guides assert that they are "best conducted by researchers who are not part of the cultural group" as many assumptions, beliefs, and behaviours are embedded, and thus not always evident to those within the culture (Richards and Morse 2007: 53). Focussed ethnographies for their part are appropriate when the research concerns a particular sub-population or special topic (Richards and Morse 2007:58). Ethnographic data collection strategies enable the researcher to describe cultural norms and perspectives on the study topic (Richards and Morse 2007: 55). These often include observations, and interviews. The authors also highlight researchers' reflexive awareness of the influences of their own culture on their perceptions during data collection (56). In some cases, authors have argued that 'multiple reflexivities' must be employed in order to keep track of power dynamics between the researcher and participants (Nicholls 2009).

Rigour

Noting the debate within qualitative academia regarding the terminology of rigour, this study is premised on the typology outlined by Lincoln and Guba (1986), which addresses credibility, transferability, dependability, and confirmability. Ethnographic methods best address the first three criteria, while a participatory approach to community research facilitates the fourth. Credibility is achieved in ethnographies as they entail 'prolonged engagement' with the study group. This includes 'persistent observation', wherein the researcher observes study phenomena repeatedly, and cross-checking data from different sources such as observations, discussions with community members, and other researchers (Hoare et al. [1993] also specifically advocate this). 'Negative case analyses' (of those informants which do not fit emerging typologies) are used to adjust or reconstruct those categories. Transferability of data is addressed in ethnographic studies through 'thick description' narrative. The more detailed the description, the better emergent data may be assessed by other researchers for applications as they see appropriate. Dependability in ethnography is contingent upon the ability to show that study results are emergent from the data. This requires that exhaustive notes be kept of

observations, and recordings or transcripts made of interviews. Confirmability aligns with Lincoln and Guba's (1986) notion of 'fairness', which relates directly to discussions of ethical issues surrounding power that justify a participatory community based approach. Fairness they define as "a balanced view that presents all constructions and the values that undergird them", and includes ongoing negotiations with stakeholders regarding the potential applications of study results (Lincoln and Guba 1986: 79).

Other studies relating to wildlife harvesting and food-sharing in the Canadian north have utilized both ethnographic and participatory community-based methods (see, for example Wenzel 1995, Condon et al. 1995, Collings et al. 1998, Bates 2007, and Collings 2011). Bates (2007) refers to ethnographic methods when he attributes a greater understanding of Inuit environmental management to the time spent traveling with Inuit hunters, while Condon et al.'s (1995) study encouraged community participation in study design, and describes that past familiarity with local people was helpful in their participant selection.

Research Topic:

My first glimmer of this project began in January 2008, when as an undergraduate student I was offered work as a research assistant for my (future) supervisor Dr. Brenda Parlee, analysing the results of a wildlife harvesting survey undertaken in the Sahtú Settlement Area between 1998 and 2003 (SRRB 2004). The survey had been commissioned by the Sahtú Renewable Resources Board, a co-management institution, which sought to use it to analyse harvest patterns and the socio-economic effects of caribou population decline (SRRB 2009: pers. comm). My work was funded through Dr. Parlee's research grant "Community Perspectives and Changing Caribou Populations", which was made in the context of barren-ground caribou population surveys showing a drastic decline in the Bluenose East and Bluenose West herds that migrate through the Sahtú region annually (Fisher et al. 2009). I entered the harvest details into an Excel spreadsheet format and organized the data quarterly, by community, and by edible weight (preliminarily using Usher 2000). According to the resulting histograms (Appendix 2), a noticeable trend of declining caribou harvest per capita was evident throughout the SSA over the duration of the survey. The communities differed, however, in that Tulita and Fort Good Hope appeared to be harvesting more moose over

the study period whereas Déljne and Colville Lake did not.[9] I was interested in sampling one community within each type as a potential Master's thesis looking at country-food substitution, and began the M. Sc. program in Rural Sociology in September 2008.

Selection of Community:

Given the harvest data I had worked on, and the existing contact with the Sahtú Renewable Resources Board Director, from an early stage I was interested in conducting fieldwork in a Sahtú community. Although I had initially hoped to compare wildlife harvesting in two communities, my supervisor advised me that one study community would be more suited to a Master's level project. As another student working for Dr. Parlee made her way to Déljne investigating travel-cost models, I looked elsewhere. 'Doing my own thing' seemed valuable ethnographically as I would not have a default social escape; it would also increase our research team's community connections in the NWT. I therefore considered Tulita, Fort Good Hope and Colville Lake as study communities. From the harvest data it was clear that Colville Lake residents harvested significant amounts of barren-ground caribou per capita (second only to Déljne), and from discussions with the SRRB director I understood that residents there practiced a more land-oriented lifestyle than other communities. I did get the feeling, however, that this might also involve a degree of social insularity, especially given its small size (barely 120 people). In addition, I gathered that the Board's advice to develop regional caribou harvesting quotas might be controversial in Colville Lake, and I was unsure as to how my affiliation with the Board would affect the willingness of the community members to participate in my study. In short, Colville Lake as a study community seemed risky, whereas Tulita and Fort Good Hope seemed less so. In addition, the latter two offered a contrast to Déljne in terms of their increased harvest of moose, which I discussed with my colleague in Déljne in terms of a potential collaboration. Between Fort Good Hope and Tulita, Fort Good Hope harvested substantially more caribou per capita (and more country food in general) according to the harvest study. It is also geographically and socially closer to Colville Lake, which I thought might provide opportunities to develop a better understanding of that community. Finally, Fort Good

[9] Norman Wells was omitted from the analysis as my focus was on Aboriginal communities.

Hope evidenced a more 'generalist' pattern of wildlife species harvest over the study period, which I found appealing.

Research Approach:

During my Master's coursework I became more aware of the controversial history of Northern research, reflected in some of the literature above. I read Nuttall et al. (2005) describing Northern research supporting the federal plan of Aboriginal sedentarization, and Freeman (1992) exposing flawed wildlife studies that according to Usher and Wenzel (1987) and Usher (2004), were employed to restrict Aboriginal harvesting. Also influential was Freeman's (1977) critique of Northern researchers who failed to seek permission from local communities before conducting studies, failed to consult with communities regarding appropriate research methods, and failed to keep communities apprised of research findings and conclusions. Such descriptions of Northern research being experienced by Aboriginal communities in a negative way were daunting. As a prospective Northern researcher myself, it seemed necessary to follow a more participatory framework whereby Northern communities might collaborate in the direction and conduct of research. This was also a strategy exemplified and encouraged by my supervisor.

My own background growing up in Northern British Columbia and working in the forestry sector sensitized me to northern renewable-resource issues, and their relationship to Aboriginal communities. Despite this, however, I had not spent an appreciable amount of time living in an Aboriginal community, had never before visited the Canadian Territories, and had never hunted in my life. A fieldwork season in the Sahtú therefore presented several levels of novelty, and seeking to be as careful as possible regarding my interpretations, I considered an ethnographic approach whereby I would attend as many events and activities as possible related to caribou harvesting and food-distribution, as well as general community functions. Although ethnographers often spend years in their communities of study, and write about the importance of such familiarity to the rigour of their work (Collings 2009), for my Master's level project my supervisor and I settled initially on a field season of two months. Due to circumstances in the field, this would eventually be extended to 3.5 months, from August 16th to November 30th 2009.

Scoping:

Fletcher (2003) makes the point that 'making contact' is the most critical phase of a research project, as it lays a foundation for developing working relationships and trust. It thus seemed a daunting prospect in February 2009, when I made a presentation to the Sahtú Renewable Resources Board regarding my (tentative) research proposal. The SRRB- a regional co-management organization comprising local Renewable Resource Council (RRC) members along with territorial and federal representatives was essentially the body through which I had to negotiate access in order to develop connections with the Fort Good Hope RRC. The Council would be my primary research partner in Fort Good Hope. The SRRB meeting was held in Norman Wells, so following my presentation I took the opportunity to make my first visit to Fort Good Hope. This eight day scoping trip was instructive on many levels. Fletcher (2003: 38) recommends to "focus research onto issues of import to community members", and my intent was to find a specific research question that would be meaningful and useful to the community; what 'social impact' of caribou population change were people actually concerned about? From a skidoo trip down river with hunters after moose, community functions and elders' meetings, it became evident that the younger generations were viewed with particular concern. There were sentiments that knowledge and skills essential to the 'Dene way of life' were less prevalent among the youth, the implication being that the community would suffer if traditional ways were forgotten. These concerns were articulated in many different ways, in terms of culture, identity, health, provision of food, education, and equity. While not crystallizing a research question per se, clearly some focus on the youth in Fort Good Hope would increase the relevance of any social research there. It is with some disappointment, then, that I do not include a youth focus in this thesis, although younger peoples' perspectives have been highlighted in other work, in the form of a book chapter provisionally entitled: "Youth Perspectives on Caribou and Learning Skills on the Land in Fort Good Hope". Given that academic articles may not be as accessible for community members, a book chapter may in fact be a more appropriate medium to address their specific priorities.

Refining Research Topics:

The topic of food-sharing was one highlighted by Dr. Parlee very early in the research process. With little personal experience in the north to go by, I was at a loss for way to decide what issue to focus on in the context of changes in the caribou herds. I needed to specify this for the purposes of a research proposal, and so the implications of animal scarcity on food-sharing became the provisional topic. Once in the community, it became clear the importance of food-sharing to peoples' livelihoods, and that there was a willingness to talk about it generally, so it remained one focus of this project. As it turned out, getting insight on the specifics of sharing was much more difficult.

The topic of community hunting was one I arrived at through participating in the community. I was fascinated by the process of organizing the 2009 hunt and the pains that organizers took to make the hunt amenable to the community, and I was also increasingly aware that it was somewhat contentious. The 'methodology' section of Chapter 5 (paper 1) outlines the process of forming specific research questions relating to community hunts in more detail. My persistence with this topic represents an attempt to respond to community needs, although doing so inherently undertakes a degree of risk. It must be said that no community members explicitly requested that this topic be researched, but as I frequently sought feedback on the nascent idea, neither did anyone explicitly advise against it. I am of the opinion that results from this study may be beneficial to the community.

Research Design:

Comparative Case Studies

That my research would comprise some form of case-study was evident early on. The need for comparative case studies has been highlighted by Nuttall et al. (2005), and it was my initial intention to compare two Sahtú communities in terms of peoples' changing access to country food. Reconsidering the scope of a Master's project, however, my supervisor and I narrowed the study to a single community- Fort Good Hope. The study structure was then intended to account for meat distribution from the autumn community hunt, which I understood to be targeting barren-ground caribou as well as other species. In actuality, the specifics of the community hunt were debated by

prospective participants until the day before their departure, finally resulting in a location more suited to mountain caribou, moose, and Dall's sheep. During these discussions, however, I slowly realised that given the season, barren-ground caribou were never seriously considered as a hunting option at the time.

There were two major consequences of this misunderstanding: it led to my interest in comparing different community hunts over several years (the results of which are presented in Chapter 5), and it led to a comparative analysis of meat-distribution from household-scale hunts on barren-ground caribou (the results of which are presented in Chapters 6). Regarding the former, I sought information regarding the most recent autumn community hunts. Regarding the latter, in order to maintain as much similarity as possible between the two sets of data, I calculated roughly the amount of meat brought back from the community hunt (Usher 2000), and restricted my sample of barren-ground caribou to a comparable amount, which I gauged to be between 20 and 30 animals. Hunters bringing in the first 28 barren-ground caribou to Fort Good Hope over the month of November 2009 eventually defined the second sample. See Appendix 3 for an overview of final estimates of the edible weights used here.

Level of Analysis:

This sharing portion of this study was conducted at two levels: that of the household and the network. Household-level analyses are well-precedented in northern communities (Usher et al. 2003, Chabot 2003). Chabot interprets a 'household' as comprising the people that reside in a common space, but in some cases they do not convey the fluidity of social arrangements. Magdanz et al. (2002: 3-4) note some methodological implications of inter-household family structures in Alaska, highlighting the shortcomings of household-level analysis. Systematic household surveys often failed to properly account for inter-household relationships, and the authors support the use of participant observation strategies. Wenzel (1995: 52) also criticizes household level analyses as having led to mistaken conclusions, while Collings (2011) examines sharing between individuals. No level of analysis is perfectly suited to studies on food-sharing, given the flexible nature of social life in small communities. Hovelsrud-Broda (2000) describes the methodological awkwardness with units of analysis in kinship-centric sharing contexts. In her account, she shifts

> "…the focus between the individual household members and the unit of the household. Both are equally representative of 'The Household' being considered. Since 'The Household' itself is not an actor with kinship-ties I must turn to the individuals who are the actual connecting factors between households. But I also consider 'sharing' as pertaining to the household as a unit, because the goods, in this case country foods, are pooled (or shared in) within the household. In other words, the individual recipient is not the sole consumer of the received food-stuffs. So even though transactions take place between individual actors, and often because of how these actors are related, it is 'The Household' which is the ultimate beneficiary" (Hovelsrud-Broda 2000: 197).

Given Hovelsrud-Broda's description of intra-household resource pooling, a household unit of analysis was chosen for this study. In terms of a network analysis, considering households as nodes within a food-sharing network also helped identify where the meat was accumulating.

Network analysis techniques are especially useful to integrate several levels of analysis, simultaneously identifying a group, the positionality of sub-groups, and membership properties of the parts that compose them (Moody and White 2003). As such, the network analysis portion of this thesis, while it identifies households as units, helps to gain insight into how households are related to one another at the sub-community level.

Participating:

My participation in Fort Good Hope life fits broadly into the six themes of: tagging along with hunters, working in the RRC office, attending community functions, social visiting, conducting an introductory biathlon program, and 'hanging out' with younger people.

The core of my participation in community activities related to country-food harvesting and distribution was to attend the September 2009 community hunt, and November 2009 caribou hunt. The community hunt took place at Tabasco Lake in the mountains southwest of Fort Good Hope, which we reached by chartered twin-otter. Eighteen people attended the hunt, including myself and two veterinary researchers from the University of Calgary; the other fifteen were from Good Hope. The hunt lasted nine days, during which we enjoyed agreeable weather, spectacular scenery, and fresh country-meats. My goal (besides observing) was to be as useful as possible and 'muck

in' as best I could. Not having hunted before was a challenge, but my proficiency with four-wheelers and general fitness were definite assets. I helped construct the camp, cut firewood, build fires, haul water, spot game, canoe, cook, and quad. A complete lack of tracking ability and knot-tying skills were fairly embarrassing, but I generally seemed to make a good impression. After we returned to Fort Good Hope, the community hunt participants remained some of my best acquaintances for the remainder of my visit.

Attending the caribou hunt was rather different, as 'the hunt' was an uncoordinated series of individual (or small group) excursions, rather than a centrally organized and subsidized endeavour. Such hunts began when caribou were reported to be on the North end of Colville Lake in early November 2009. Typically, hunters would then assemble the resources necessary to travel to Colville Lake and make the round trip in 2 to 3 days by skidoo. Not knowing how many opportunities would be available to participate in a caribou hunt, I resolved to go as early as possible. When the opportunity arose to join two experienced harvesters for a weekend's hunt in early November, I eagerly agreed. Although my proficiency with skidoos left much to be desired, an attitude of self-sufficiency is often expected by hunters, and I therefore rented my own skidoo, sleigh, bought provisions, fuel, and oil, and assembled as much warm clothing as possible. Despite my best efforts, however, I required significant assistance from the hunters during the trip; this involved plucking me out of an icy creek, starting my uncooperative skidoo, and recovering my damaged sleigh. And once again, the intricacies of knot-tying eluded me. As such, classifying my actions as 'participation' would not be correct; indeed, to call it 'tagging along' would be generous. Nevertheless, I was present for the most part during the tracking, stalking, shooting, and skinning processes, thus able to make observations, and to ask questions.

While staying in Fort Good Hope, I required some basic office facilities in order to administer the research, and this was helpfully provided by the RRC. I would use their office for 3 to 4 hours in the morning most weekdays before the RRC's part-time secretary came in for the afternoons. The RRC office proved a valuable place to be based, as it facilitated my becoming acquainted with the most active harvesters in the community. I helped out with answering phones in the morning, composing posters and emails, and was allowed to 'hang out' during discussions and meetings. I could not have

asked for a better location for developing a sense of the diversity of opinions regarding country-food harvesting in the community. In addition, it provided a continuous opportunity to casually explore my research ideas with the RRC, which also facilitated their understanding of my project and confidence in my methods.

Community functions provided opportunities through which I was able to meet people in the community, and observe the course of life. Cookouts in the field were popular in the summer, and I was invited by a few families to share their fish, moose, and caribou. Meetings such as the Sahtú Secretariat Incorporated Annual General Meeting, Sahtú Renewable Resource Board meetings, and justice meetings concerning a rash of arson incidents were key events through which I gained a better understanding of peoples' opinions and priorities. My attendance of drum dances and festivities (including a karaoke night) helped make me a familiar face around town. Organized sporting events such as volleyball and indoor soccer held most evenings at the school gym were popular, and through these I became more acquainted with some local youth. In August, the down-river community of Tsiigehtchic hosted their annual 'Canoe Days' festival, which I attended along with about twenty Good Hopers.

Social visiting is a central feature in community life, and so I made sure to 'drop by' occasionally at acquaintances' households. Given that many of my visits with people involved a formal interview, I tried to meet most of them again on a more social basis; I did not want to be known simply as a 'researcher'. I believe most people appreciated this. I also became more connected to peoples' family life and routines. I did feel awkward, however, about dropping by without any warning (my residence did not have a telephone), or particular excuse. Pursuing the spirit of food-sharing, but without country-food of my own to utilize, I decided to make bannock for people. Whether the bannock itself was enjoyed or not, recipients seemed to appreciate the gesture (or at least were entertained by it). I did also receive some guests at my own residence, although this happened relatively seldom.

My research proposal had included my intention to coach introductory biathlon sessions as a way of meeting interested youth, and contributing something unique to the community. I have competed and coached the sport for many years and saw the combination of cross-country skiing and shooting as potentially aligning with the

recreational interests of community members. There was indeed much verbal interest, but little turn-out. After several attempts to organize practices, I did finally convince two youth (both aged 12) to attend, providing their own .22 calibre rifles. We met at a gravel pit, aimed at makeshift targets, and jogged rather than skied. One youth signed up for Arctic Winter Games trials in Hay River November 19-22, 2009 for snowshoe biathlon, so I registered as a coach/chaperone. We made the trip, the athlete placed 2nd in his competitions and qualified for the 2010 Arctic Winter Games in Grande Prairie AB. This was quite significant for the athlete, and so I believe coaching biathlon was a worthwhile endeavour. However, it did not really facilitate connections with community members in my particular study demographic.

Data Collection:

Field Notes:

Field notes are the primary technique of data-formation in ethnographic research, providing descriptive accounts of the researcher's interactions in their 'field' in as much detail as is possible. There are, however, few guidelines on the 'best' or correct ways of compiling them (Swain 2006). The test of good field notes, Swain argues, is whether or not they are useful (this would seem to imply some relationship with other sources, however).

Interview Sample and Recruitment:

Community Hunts

Regarding interviews for the community-hunting topic, they began with two members of the RRC in 2009 who were key informants on the context of the community hunt, and recent history of caribou hunting. This was initially done to gain a sense of context about the 2009 community hunt to better understand the food-sharing. Additionally, a caribou harvester interviewed volunteered a description of a previous community hunt he had organized. As an emergent topic, in 2010 during the data validation phase for the food-sharing data, I interviewed four additional organizers of community hunts. They were purposively selected on the basis of being knowledgeable on the process of organization behind the 2007, 2008, 2009, and 2010 community hunts (the last of which

did not actually occur). See the Methodology section of Chapter 5 (paper 1) for more on the specific methods pertaining to community hunt interviews.

Food-Sharing

Regarding food-sharing questions, other studies in northern communities investigating sharing patterns relating to country foods have used longitudinal survey-interviews conducted at regular intervals over long periods (Magdanz et al. 2002, Collings 2011). My task was somewhat different: to track the sharing of meat from two specific hunting events.

Research participants were thus identified based on their inclusion within food-distribution networks resulting from the two hunting activities. The sample was purposive on this basis. To track the distribution of country meats from the two hunts, I attempted to interview a member of each household included in those distributions. I first interviewed the hunt participants themselves. My own participation in the community hunt and caribou hunt ensured my familiarity with the first few interviewees; contacting them for interviews was relatively straightforward. Contact was made either by telephone, or by a visit to their residence, and a time/place was established to conduct an interview. In some cases, interviews were rescheduled several times. In total I interviewed twelve participants from the community hunt, and seven harvesters from the caribou hunt. An interpreter was used in one interview.

After the initial harvesters were interviewed, I then attempted to interview a member various receiving households, identified by a 'snowball' technique (that is, harvesters told me who they shared meat with). Snowball sampling techniques have been described as especially useful for network studies (Hanneman and Riddle 2005), although the authors note some limitations such as their inability to locate isolate clusters, and a tendency to over-emphasize solidarity. These interviews were undertaken in order to spot-check the validity of information from the initial interviews, and also to investigate the possibility of subsequent sharing by recipient households. All interviewees in these recipient households were either the household head, or their partner. I contacted them either by telephone or by a visit to their residence (depending on what I judged necessary or appropriate), and scheduled a time/place for

an interview. In some cases individuals declined to be interviewed. In total I conducted nine interviews with people identified as receiving meat from the community hunt, and four interviews with people identified as receiving meat from caribou hunt participants.

In two instances (both relating to the community hunt), interviewees described as receiving meat denied that they had in fact received any. I completed the interviews with them anyway (excluding obviously-irrelevant questions), but was not able to resolve what particular miscommunications led to the situation. Thus, two interview participants may have been incorrectly recruited.

Initially, the scope of this research covered only the community hunt, and the resulting distribution of meat into Fort Good Hope. A lack of barren-ground caribou harvested during the community hunt necessitated extending the scope of research to an additional hunting event. Such changes are often necessary in qualitative inquiries as the researcher's understanding of the situation grows (Richards and Morse 2007: 76). As noted above, the number of informants selected regarding the second hunting scenario (for barren-ground caribou around Colville Lake) was based on achieving equivalency with the community hunt in terms of quantity of meat harvested (See Appendix 3).

Interviews/Surveys:

I conducted all the interviews myself, orally. While some questions were survey-style, it was valuable to talk through them with participants as their responses often indicated complexities that would be lost in a written format. Working through questionnaires orally is well-precedented in northern research (Berkes et al. 1994, Chabot 2003), and facilitates a more comfortable experience for participants. I also recorded responses to survey-style questions in handwritten notes, and all but one interview in audio format.

The interviews included both close-ended and open ended questions. I tried to remain as conversational as possible during interviews to facilitate a comfortable experience for participants. The order of questions was therefore altered in some cases depending on the conversation flow, and additional/unique questions were asked to some participants depending on their perspectives and circumstances (see Appendix 4 for interview

guide). Each interview ended with an opportunity for participants to voice any opinions that they wished, and most did.

I often struggled with the specific wording of questions, and many were posed slightly differently to participants. I did feel, however, that flexibility was important in the interview process as the comfort of my participants was a primary concern. The critical and sensitive question of who the participant shared his/her meat with was generally (though not always) answered, after specific assurances of confidentiality. My questions were sometimes met with the counter-question: "What do you mean, exactly?" I then would provide examples. These 'leading' questions being potentially a problem for the reliability of data, I asked follow-up questions if responses closely matched my example. There was a tendency among some participants to simply say 'yes' after a question had been posed, which did not necessarily indicate their views. Once I realized this trend, I would ask follow-up questions in these cases.

Leading questions are problematic in interview settings, given that they are seen as potentially swaying participants' responses. Strategic leading questions have been reframed, however, by Collings (2009) as 'phased assertion', which can mitigate what the author refers to as 'standard responses'. These are answers that have developed through the extensive exposure to research that many northern communities have experienced. By indicating that you already know something about a topic (such as that standard opinion), participants can be inclined to offer a more thoughtful response. Johnson and Ruttan (1993) describe similar issues- that if an informant senses the interviewer is not knowledgeable, he/she may decide that there is no point in explaining details (59). I also found that in a small number of cases, such assertions can also be used to slightly provoke participants if the knowledge claim being made is deliberately wrong. As such, deliberately misinterpreting a situation can incline some participants to correct you in more detail. Johnson and Ruttan (1993: 71, 101) also emphasize that a researcher should not pressure people about quantitative information, and to be sensitive to participant boredom or fatigue.

Consent:

Davison et al. (2006) contend that the formality of consent forms can be inappropriate, even offensive to members of some Aboriginal communities. Indeed, the point-in-time contract seems to contradict the notion that consent should be ongoing. Despite this, before the interview all study participants received a written and oral description of the study objectives, and the type of questions included in the interview. I informed them of the expected duration of the interview, their option to pass on any questions they wished, and option to end the interview at any time. Participants were made aware that they could remain anonymous in any publications resulting from the study, or could choose to be identified by name. They were also given the option to have their interview transcripts either destroyed upon the conclusion of my work, or stored and owned by the local RRC. Finally, I informed participants that I would meet with them at a later stage to double-check their consent to using their interview data in the context of my thesis and peer-reviewed publications. In cases where participants could not, or chose not to read the consent form, I went through the document orally with them, checking the response options according to their preferences. See Appendix 5 for the consent form used for this study. Interviewees were also given a copy of the project summary to keep for their own records.

Consent at the beginning of the interview was counter-intuitive for some informants, as they were not sure of exactly what they would say before they said it. In some cases, then, informants would not sign the consent form until the conclusion of the interview. In some cases, informants seemed to consider the consent forms tedious, and I felt the need to apologize for having to insist they be completed. Davison et al. (2006: 6) note that written consent forms could be perceived as mirroring the "signing of treaties between Aboriginal and non-Aboriginal people in earlier times."

My being considered a friend by some may have impacted some informants' inclinations to accept or decline the interview. Some of the informants also seemed to consider the interviews as a personal favour to me, in support of my education goals. Education is considered among many in the community to be the most valuable pursuit of young people. Their interest in my actual research questions were potentially less influential in their decision to participate in my study. Similar notions are expressed by other

graduate student researchers in Davidson et al. (2006). In addition, the financial compensation for informants' time seemed to be a key factor for some in their consideration of whether or not to agree to an interview.

Compensation:

Interviewees received compensation for taking the time to participate in my study. This compensation was either $40 or $60 depending on the length of the interviews, which ranged between 30 minutes and 80 minutes. Compensation for the participants of the focus group session (90 minutes) was $60 each, except one attendee who arrived late and was compensated $40. Community workshop participants entered their names in for six draw prizes of $100 value (two for groceries, four for fuel), which were drawn at the end of the workshop.

Data Validation:

Interview material relating to food-sharing was transcribed by the researcher, and taken back to Fort Good Hope in September 2010. I returned a copy of each participant's transcript to them (to those who still resided in the community), along with a plain-language summary of the food-sharing chapter. If they wished, we went over a draft of the food-sharing paper, and their contributions in some cases were integrated into it.

Interview material relating to the community hunt was transcribed by myself, and taken back to Fort Good Hope in September 2011. I returned a copy of each participant's transcript to them, along with a plain-language summary of the community hunt chapter.

A community workshop was held in September 2010 to discuss preliminary findings on food-sharing, and to get a better perspective on the historical importance of food-sharing traditions. This workshop was attended predominately by elders (a bus was sent around the community to facilitate their participation), and required a local interpreter. A consent form was signed by all attendees after its content was explained orally, and the workshop recorded in audio.

Analysis:

The specifics of data analysis are discussed in the Chapters 5 and 6. More generally, constant analysis of emergent data was ongoing while in the community, and again in the process of transcription (done by myself using Digital Voice Editor 3). Data coding proceeded on the basis of Burnard (1991).

Data Management:

Anonymity:

Davison et al. (2006) refers to the difficulty ensuring anonymity and confidentiality in the north because research is often conducted in small communities, and that in research involving Aboriginal peoples it may not be respectful to not identify who has shared their knowledge with you. Fletcher (2003) notes that often, people do not live in isolation from those around them, so anonymity can be a foreign concept. As described above in the 'Consent' section, pains were nevertheless taken to ensure the anonymity of interview participants, although they were informed of the impossibility of guaranteeing their anonymity in published material, given the small size of the community (see Appendix 5). Almost all participants chose to remain anonymous. Participants' names were each assigned a numerical code, and this has also identified transcripts used in the resulting documents including this thesis.

Storage:

For the duration of the research, recorded information was stored on the researcher's laptop hard-drive and transcripts of the recorded information in a locked filing cabinet in the researcher's office. Copies of interview transcripts were also given to all accessible participants during the data validation trips.

Copies of surveys (completed by the researcher during interviews) are stored in a locked filing cabinet in the office of Dr. Brenda Parlee for five years after the data was collected, as per the ethics guidelines at the University of Alberta.

Ownership:

Interview transcripts that participants have consented to be stored and owned by the Fort Good Hope RRC will be given to the RRC at the conclusion of the study.

Collaboration:

Participatory Action Research involves the shared directing of research priorities between the researcher and their community partners. In the case of Fort Good Hope, a fundamental concern of this research is to highlight the continuing importance of traditional hunting rights, which is also certainly a priority for the Fort Good Hope RRC. The RRC is the primary local research partner, its jurisdiction over renewable resources in the *K'asho Got'ine* district being legislated in the Sahtú Land Claim Agreement. In ongoing discussions with the RRC, 'collaboration' was my goal, although I have doubts that the reality could be labelled that. The project focus was determined significantly at the outset, and even regarding my decision to focus on community hunts, it was my own decision. Although I attempted to get advice on whether or not it was prudent, responses were ambiguous.

Fletcher (2003) suggests a Local Advisory Committee for constant information flow between the community and researcher. This was unrealistic on a formal basis. To the extent that they were willing to have a conversation, I tried to consult with members of the RRC, my research assistant, elders, and many others regarding emergent topics.

Benefits:

It is impossible to adequately convey all the ways that this research has been of personal benefit to me. Besides it being central to a Masters' thesis and three published papers, the opportunity of spending time in Fort Good Hope has given me a truly treasured perspective on many things. I am also now employable, for a change.

My supervisor and the University of Alberta will benefit from this study as it will be the basis for three academic publications, which are an important metric for professional advancement in academia, and university status.

People in Fort Good Hope have also benefited through this study, although perhaps not as much from its results as other circumstances generated through it. The results may

have been useful to the Renewable Resources Council, to whom I made a detailed presentation, but it was hard to tell. My intent was to highlight especially the multitude of benefits of the community hunt to members of the community, many of whom seemed to focus predominately on the supply of meat it generated. But this was always my own perspective, and may have been wrong. More optimistically, in a public presentation of study results in September 2011 (not very well attended), one audience member premised a question in the following way "I have no doubt that this research is beneficial to the community, but…" (I don't remember the actual question- I was so elated by this statement!)

Some community benefits resulted from my willingness to participate and contribute in different functions, basically helping out where I could. More specifically, my coaching biathlon to two youth in 2009 was key to one of them qualifying for the Arctic Winter Games, and seems to have later played a part in their joining the Junior Rangers, and continuing to improve their marksmanship. This has been very good to see. Also, the youth activities I coordinated during an on-the-land assembly at Airport Creek in September 2011 (such as tea-boiling, plant gathering and identification, and fishing) were much appreciated by everyone in camp.

Other benefits stem from the various other projects that my supervisor is involved in, and my position to connect them with people in Fort Good Hope. For instance, community members' participation in a workshop in Edmonton in 2010 (the Arctic Peoples, Culture, Resilience, and Caribou Workshop) seemed to be very interesting for them. A canvas wall-tent was also provided to the RRC in 2011 with an infrastructure grant to promote community-based wildlife monitoring.

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Chapter 5: Community Hunting and Social-Ecological Resilience in Fort Good Hope NWT.

Hunting societies in northern Canada have always experienced uncertainty in the availability of valued resources such as barren-ground caribou (*Rangifer tarandus groenlandicus)*. Over time, groups of hunters including those from the *K'asho Got'ine* Dene community of Fort Good Hope (66˚ 15'N, 128˚ 37'W) have developed strategies for coping with variability in the animals' location and abundance. Research carried out with the Fort Good Hope Renewable Resources Council including interviews with households (September-November 2009, September 2010), provides a lens for understanding how these collective hunting strategies contribute to the resilience of the community to a local scarcity of caribou. Specifically, we discuss the decision-making processes involved in the organization of community hunts in 2007, 2008, 2009, and 2010. Drawing on semi-structured interviews with hunters and organizers, as well as participant observation, we outline the recent history of community hunting practices, the challenges faced by hunt organizers, the objectives of participants, and perspectives of non-participants. By analyzing hunt organizer's decisions about where, what and how to hunt, we conclude that community hunts are a hunting strategy that demonstrates social-ecological resilience through organizers' responses to ecological, socio-economic, and political conditions.

Introduction:

Research in many parts of arctic Canada has revealed the resiliency of Dene and Inuit communities to changing ecological conditions (Berkes and Jolly 2001). The adaptability of caribou hunting techniques has always been particularly characteristic of northern communities (Smith 1978), including those in the Sahtú region of the Northwest Territories. Although this capacity to cope with uncertainty and unpredictability of caribou is well-researched in historical ethnographies, present-day strategies to deal with problems of caribou scarcity are of growing relevance (Parlee et al. 2005), particularly in the context of barren-ground caribou population decline in the western arctic (Fisher et al. 2009, GNWT Wildlife Division 2011) .

For the *K'asho Got'ine* Dene community of Fort Good Hope, caribou from the Bluenose West herd are a significant source of country meat, harvested predominately in the

autumn and winter (SRRB 2004). Recent population studies on the Bluenose West herd have revealed their numbers to be dwindling by as much as 80% over the past twenty years, however, and although natural population fluctuations within the herds are precedented (Fisher et al. 2009), harvester responses to the contemporary scenario of population decline are not well understood.

This paper investigates the 'community hunt' to understand more about the resilience of Fort Good Hope residents to this variability in population and distribution of the Bluenose caribou. Such hunts are common in many communities in the Canadian Arctic. By pooling resources and organizing the hunts with the support of local institutions, the costs of hunting to individuals is reduced, the chance of harvesting success is augmented, and a substantial influx of meat can then be widely distributed. As such they appear to be a versatile tool in an array of hunting techniques that communities may employ depending on their circumstances. But little investigation has been conducted into how they pursue such objectives, if they pursue additional objectives, how they are organized, and how they might be changing. This is particularly true in Dene contexts. One annual form of community hunt occurs in the autumn, and is organized either by the Fort Good Hope Band Council, Renewable Resources Council (RRC), or a group of interested hunters.

Considered here are four case studies of autumn community hunts occurring between 2007 and 2010. Using semi-structured interviews to explore the organization of the four hunts in addition to participant observation with organizers themselves in 2009 and 2010, we highlight their similarities and differences in terms of their organizing body, purpose, location, duration, participation, harvest, and distribution of meat, as well as look into why these dynamics changed from year to year. Through this, we demonstrate that organizers adapt community hunts to a diversity of environmental and social factors, which suggests that the hunting institution is relatively resilient and moreover that it contributes to the social-ecological resilience of hunting livelihoods in Fort Good Hope more generally.

Theoretical Approach:

The focus on social and ecological influences on hunting dynamics stems from our interest in social-ecological resilience and social learning. While 'resilience theory' broadly observes that systems respond to change through adaptive cycles of collapse and reorganization (Adger 2000), social-ecological resilience is useful to incorporate how systems at different scales interact to support key functions. Social-ecological resilience specifically, is "the capacity of linked social-ecological systems to absorb recurrent disturbances… so as to retain essential structures, processes, and feedbacks" (Adger et al. 2005). In this case, at a large scale the system of interest is the livelihood of hunting in Fort Good Hope: the ability to procure food from the surrounding landscape by harvesting, which is well-understood to be important for the health, culture and economies of northern communities (Usher et al. 2003, Berkes et al. 1994, Nuttall et al. 2005, Parlee et al. 2007). One of the ways in which hunting livelihoods have been resilient is through flexibility in harvesting strategies (Walker et al. 2006, Chapin et al. 2006, Brinkman et al. 2007), which are possible through 'functionally diverse' ecosystems (Elmqvist et al. 2003). According to a regional harvest study (SRRB 2004) hunters in Fort Good Hope rely on a relative diversity of species such as barren-ground caribou, moose, fish, and small game (inhabiting several different ecotypes), compared to nearby communities. It is thus a valuable community from which to draw case studies.

It is important to emphasize, however, that making choices between multiple resources is not easy. In this vein, Brinkman et al. (2007) clarify that responses to changing availabilities in resources are not simply technical processes. As Nadasdy (2007) and Adger et al. (2009) describe, adaptation choices are often contentious within social and political groups. We note these works in order to highlight that systems of harvesting are interlinked with other social, economic, and political systems in addition to ecological ones. A particularly important social system related to harvesting dynamics in northern Dene communities is the system of food-sharing. Ingold (1983: 563) illustrates this well when he contends that 'sharing' encompasses many material and non-material relations and is in fact "built into the productive relations of hunting." Sharing patterns are therefore affected by the processes of production, and vice versa.

Adjustments to harvesting strategies occur at both short-term scales in terms of making particular decisions, and at longer-term scales when changes to the rules and institutions themselves are involved (Berkes and Jolly 2001). At either scale, adjustments can be considered experiments designed to procure foods in different ways depending on ecological and social conditions (Berkes 1998). Experimentation itself, however, is premised on social subsystems that generate and maintain the knowledge and skill necessary to experiment, and thus to be able to carry out the changes that may be required. Experimentation and learning can operate at an individual level (when harvesters hunt alone) and at a collective level when harvesters cooperate to hunt together.

Theories of 'social learning' inform the conceptual framework employed here to think about the year-to-year changes in collective decision-making. Social learning is defined as a group-learning process, or "a process of iterative reflection that occurs when we share our experiences, ideas, and environments with others. Social learning includes single-loop (correcting routines), double-loop (correcting errors by examining values and policies), and triple-loop learning (designing governance norms and protocols)" (Armitage et al. 2008: 88). The iterative and participatory aspects of these loops are thus highly compatible with the resilience paradigm (Berkes 2009); in fact, resilience might be considered the end point or desired outcome of effective social learning.

Community Hunts:

There are few details about the processes by which historical collective hunting strategies have become formal 'community hunts' in Northern communities, and the hunts themselves are broad in definition and practice (Helm 1965, Rushforth 1977, Castro 2011: Pers. comm.). Castro in fact parses out two varieties of community hunt based on research in the Innu community of Sheshatshiu, separating 'communal' (voluntarily-cooperating) harvesters from 'communitarian' harvesters (centrally-organized by community institutions). The latter type evidences that where communities now are highly integrated into the wage economy, funding to compensate organizers and harvesters may be expected, although this has sometimes been seen as altering the traditional social relations of hunting and sharing harvested meat (Kishigami 2000, Gombay 2009, Castro 2011: Pers. comm.). For the purposes of this paper, we

define a ‘community hunt’ as any collective hunt that involves support from or coordination through community institutions, and is designed to benefit the wider community (although we acknowledge that perspectives regarding the ways it does this might differ).

The decisions about if, when and how a community hunt should be organized are also complex; one key deciding factor is the degree of consensus about community need. Kruse et al. (2004: 824) for instance, suggests there is a ‘trigger’ for a community hunt in Old Crow, Yukon if less than 50% of the community’s ‘need’ for meat is met (although they are vague as to how this is decided). Another influential factor can be the availability of funds for travel and for compensating participants for hunting (Castro 2011: Pers. comm.). In addition, other objectives of the hunt such as promoting transmission of traditional knowledge and skills related to living on the land may influence its logistics in terms of group decisions about where to go and what animals to seek (Smith 1986, Winterhalder 2001, Peloquin and Berkes 2009, Castro 2011: Pers. comm.).

The instructive purposes of community hunts may be of increasing importance, as youth participation in harvesting is an area of concern in much of the north as well as a focus of academic inquiry (Savishinsky 1974, Condon 1990, Collings 1994, Ohmagari and Berkes 1997, Salokangas and Parlee 2009; Pearce et al. 2011). Berkes (1998: 106), for instance, offers a concrete example that less-skilled Cree hunters limited to travel by road were stymied in one instance, when others competent in stalking caribou in the bush enjoyed a successful harvest. This underscores that in order to experiment with different harvesting strategies, foundational skills and knowledge must first be in place. Effective processes of knowledge transmission require good relations between elders and youth, after which skills can be developed through continuous on-the-land practice (Pearce et al. 2011). Many scholars have reported the extensive concern within northern communities that neither of these processes is occurring to a necessary extent (Nelson et al. 2005, Furgal et al. 2006, Ford et al. 2007).

Background:

Fort Good Hope (*Radilih 'Koe*) is a community of 557 people in the Sahtú Region of the Northwest Territories, Canada. It is located on a peninsula between Jackfish Creek and the east bank of the Mackenzie River, about 145 km (90 mi) northwest of Norman Wells. Fort Good Hope is represented by the *K'asho Got'ine* Community Council (commonly called the 'Band Council' although it combines the duties of a Band Council and Charter Community Council) and belongs to the Sahtú Dene Council; the two principal languages are North Slavey and English. The community is accessible by air from Norman Wells and Inuvik, by boat on Mackenzie River in the summer, and by skidoo or vehicle on a winter road between December and March.

The location of what is now Fort Good Hope has been a seasonal gathering point for *K'asho Got'ine* peoples for as long as oral history records. Hunters foray from the community along the Mackenzie River and its tributaries as far as several hundred kilometres for moose, while other parts of the district are valuable habitat for barren-ground caribou, woodland caribou, mountain caribou, and Dall's sheep. The diversity of resources has always provided the community with tremendous flexibility in where, when and what to hunt.

Hunting in formally-organized groups is characteristic of the *K'asho Got'ine,* and has been described in some ethnographic literature (Osgood 1932, Savishinsky 1974, Duffy 1979, Arnold 1989), although many sources tend to focus on hunting as a solitary endeavour. In various conversations with people in Fort Good Hope about community hunts, some described that in pre-contact times families would undertake a seasonal movement from the Mackenzie Valley to the barren-lands every autumn (a journey of 300km) to intercept caribou from what is now called the Bluenose West herd, migrating south for the winter. Descendants of these families now live predominately in the satellite community of Colville Lake (population 115), and continue this practice. They travel (now by Twin-otter) to the edge of the barrens around Horton Lake for caribou in August or September, leaving only a handful in Colville at this time. Hunters from Fort Good Hope with strong family connections to those in Colville often join them at Horton Lake, although the trip is expensive. In some years individual costs have been reduced

through aircraft charters subsidized by the Fort Good Hope Band Council, making the efforts formal community hunts. More recently, several factors have reduced support for formally joining in the Horton Lake hunt. Socio-economically, the expense involved in aircraft charters has led to social tension around who is selected to go and the amount of meat they are expected to return. Ecologically, there have been concerns about the availability of fire-wood around Horton Lake, and also that the repeated harvests potentially impact the migration of the Bluenose West herd.

Methodology:

Collaborations were developed between the Sahtú Renewable Resources Board and the Fort Good Hope Renewable Resources Council in 2008 as part of a larger research program on the social dimensions of caribou population change (Social Sciences and Humanities Research Council and the International Polar Year Program). Our decision to ask questions around resilience to caribou population decline in Fort Good Hope was based on a review and analysis of data from the Sahtú Harvest Study (SRRB 2004), which suggested the importance of barren-ground caribou harvests from 1999 to 2002 while at the same time indicating the community's use of a diversity of other species including fish, birds, small game, and especially moose.

Questions about community hunts emerged as a result of the lead author's participation in meetings related to the organization of the hunt in 2009. Subsequent to the hunt, interviews were carried out with seven organizers and members of the Renewable Resources Council about the history of community hunts (including details about their organization in 2007 and 2008). In 2010, the lead author was again present in the community to observe the process of planning another hunt, although those plans did not ultimately come to fruition. Interviews were subsequently arranged with the organizers to discuss the challenges that had prevented it. Analysis of the interview transcripts was led by an interest in determining why and how the community hunt changed significantly each year from the 2007 to 2010 period. A second level of analysis focused on the social and ecological factors which influenced these changes. Estimates of the quantities of meat harvested on each hunt have been adapted from several

sources, outlined in Appendix 1 (Usher 2000, Ashley 2002, Larter and Allaire 2009, Veitch pers comm. 2010).

Table 5-1: Data Sources for Hunt Descriptions:

	River Hunt '07	Tabasco Lake '08	Tabasco Lake '09	River Hunt '10 (plan)
(total people interviewed=7)	Relevant interviews (n=3)	Relevant interviews (n=2)	Relevant interviews (n=4)	Relevant interviews (n=4)
			Participant observation	Participant observation

Results:

This section first gives an outline of how the first 'community hunts' were organized in Fort Good Hope in the 1970s, and a summary of why they continue to be important. Following this, four subsections describe each autumn hunt (in 2007, 2008, 2009, and 2010) in terms of their purpose, organizing body, location, duration, participation, harvest, and distribution of meat, and the ecological and social factors which influenced changes in these characteristics.

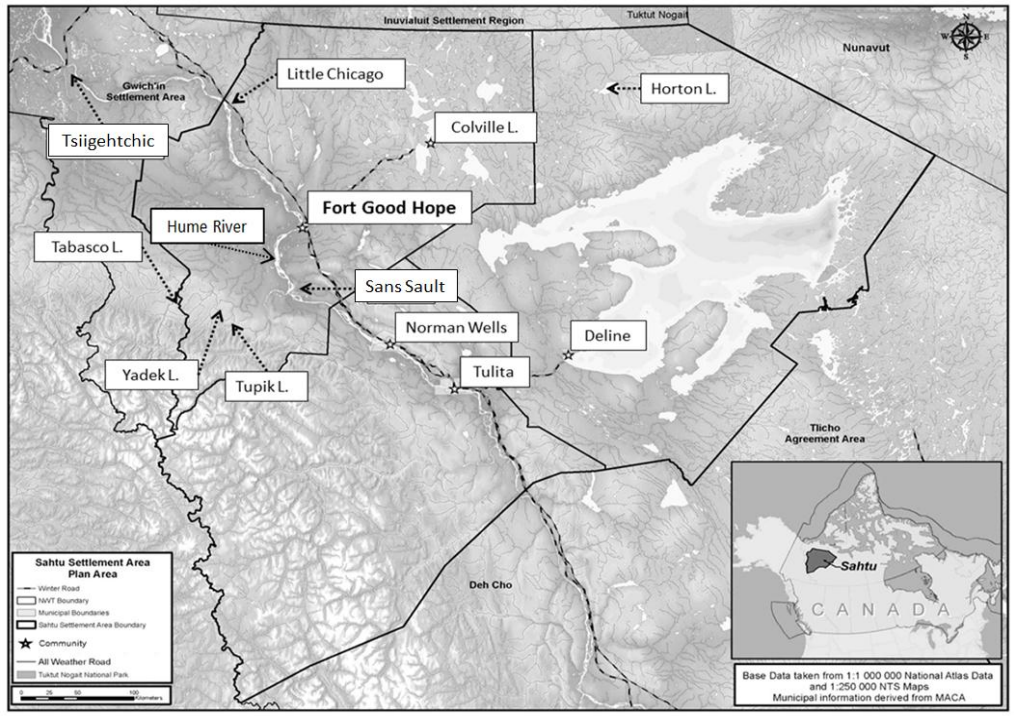

Figure 5-1: Map of Locations around Fort Good Hope (Adapted from SLUPB 2011)

Community Hunts in Fort Good Hope:

The phenomenon of 'community hunts' in Fort Good Hope is likely an adaptation of what was historically a practice of communal hunting by groups of *K'asho Got'ine,* some of whom travelled together in the autumn over 300 kilometres to the barren-lands to intercept caribou from the Bluenose West herd. The first 'community hunt' that study participants identified was organized in the 1970s during one winter when supplies of meat in Fort Good Hope were particularly low. At the time, it was especially cold and difficult for hunters to go out hunting by themselves. 'Even if you made a kill, everyone wanted some, so the idea was that everyone would go and make a lot of kills so everyone would have enough meat to last them' (44 pers. comm.). The group effort also reduced the work for individual hunters and increased the chances of making kills (44 pers comm.). At the time, there was no Band support for hunting; families each had one person join the group to travel together with their dog-teams to access caribou wintering northwest of Colville Lake (42 pers comm.). The group split into various self-organized hunting parties, coordinated by the chief and senior elders who had decided before-hand which areas the parties would hunt in (44 pers comm.). The meat was hauled back and stored by the Band, which also conducted a weekly distribution to all households in the community (33 pers comm.).

In recent community hunts, Fort Good Hope organizers have subsidized travel costs, supplied some ammunition, and on occasion provided a camp cook, basic kitchen, or ATV. But harvesters have not been paid for their efforts, and are typically expected to provide their own tents, stoves, food, and hunting gear; in many cases they also bring their own tools such as chainsaws, carpentry equipment, generators, and sleighs. In 2009, interviews asking about the purpose and importance of a contemporary community hunt revealed contrasting views between those who had attended community hunts in the past, and those who had not. Participants of community hunts responded that they are important to learn and practice traditional skills, and to become more familiar with culturally-significant locations on the landscape, as well as to provide meat to the community. Those who had not participated in community hunts more commonly focussed on its benefits in terms of providing meat to the community.

Notably, however, both groups emphasized that elders and those in need should be prioritized to receive meat from community hunts.

River Hunt 2007:

In September 2007, a group of *K'asho Got'ine* hunters applied for funding from community institutions, and organized a community hunt at the confluence of the Hume River and Mackenzie River (Figure 5-2). It was undertaken specifically to make up for some perceived shortcomings of a previous hunt. Participation varied as the hunting camp was easily accessed from Fort Good Hope, with as many as 40 people visiting over the five days. The hunt resulted in the harvest of 8 moose (approx. 1400kg of meat) which was subsequently distributed by the Renewable Resources Council to almost all households in the community.

The decision to go to Hume River was made during a meeting arranged by three lead hunters with others in the community interested in participating and those particularly familiar with the hunting prospects there. The location selected was on the Mackenzie River 20-30 miles upstream from Fort Good Hope. During interviews, it was suggested that this location was chosen because of the diversity of nearby tributaries with good moose habitat; in addition, islands at the site are also habitat to many smaller game including arctic hare. Hunters primarily used their own boats with fuel being subsidized by community organizations, although one scow (a flat-bottomed boat designed for travel in shallower creeks) was bought locally for the occasion. Being relatively close to town, boats were also able to go back and forth, delivering people, supplies, and meat as needed over the five days

> *It went good- that one was a real success, everybody came together and whatever ideas they had- worked together right through- right from the start when it was said to do the community hunt right to the end, the bitter end- everybody was pitching in doing their share of the work* (43).

Twelve to fourteen hunters in six boats were the core of the enterprise, with up to forty people visiting the camp. One interviewee highlighted the significant participation of local youth, recounting that a number of young people were brought up to the camp and shown trails to fish-lakes, river-islands good for rabbits, and joined the hunters after

moose. With a concentrated group of people, the hunters were even able to haul an entire moose back to the camp.

> *...We had an old elder, skin it for these young guys… ya, they all helped them… they all took part, like they were watching and then they were cutting and helping... And then we showed them how to cut it up, butcher them, like... cut it all up into pieces (33).*

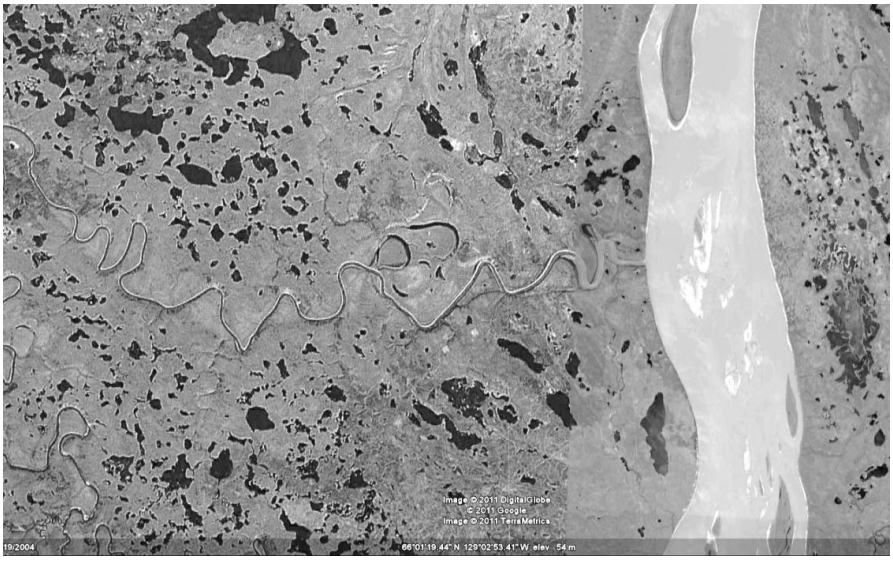

Figure 5-2: Hume River Confluence with the Mackenzie River

Eight moose were harvested during the hunt, and the resulting meat was cut up in camp and some divided for later sharing. Interviewees reported that on the last day, the meat was brought back into town on the boats and unloaded at 'The Point' (where the river is most commonly accessed, and where river-boats are tied up). Some organizers reported that their original intention had been to drop the meat off at a location in the community especially nearby the residences of some single mothers, however, in the end the Renewable Resources Council took over the distribution. Meat was loaded into the back of the RRC truck and an employee drove around town passing it out, apparently to one-hundred and twenty households. The RRC employee made one conservative pass around the community, and then a second pass with the leftover meat. In general, it was reported that this manner of sharing the meat worked well, with the priority groups being looked after and almost every household in the

community receiving some meat (approximately enough for an oven-roast). The process, however, seemed to catch the hunters off guard.

> *We had an agreement that we would take some, but not much for ourselves. But when we came back, everybody- all the hunters forgot to grab a chunk for themselves so everybody was running after the truck- haha!... They left themselves out! I was chasing after that truck too, myself! Haha!* (43).

The only serious problems mentioned by interviewees concerned equipment costs associated with navigating shallow creeks searching for moose. Some outboard motor-props were damaged, and boat-owners approached community organizations afterwards seeking recompense, which then stretched those agencies' fiscal accounts.

Tabasco Lake 2008:

In September 2008, a number of factors aligned to motivate a community hunt at Tabasco Lake in the Mackenzie Mountains (Figure 5-3). It was organized by the Renewable Resources Council, which funded the chartered aircraft necessary for the 6 day trip. The harvest included 10 mountain caribou, 2 moose, and 3 Dall's sheep (approx. 1825kg of meat) which was distributed in a similar fashion as in 2007. The RRC solicited interest in the hunt by posting a sign-up sheet which filled with 50 or 60 names, although 20 people finally went on the excursion. Participants included active harvesters, elders and youth. With additional funding provided by the Land Corporation, two ATVs, fuel, a canoe, and some building material were also brought to the site, and stored there over the winter.

A key emphasis of the 2008 hunt was the rekindling of familial and historical relations between the *K'asho Got'ine* and the Gwich'in of Mayo, Yukon. Prior to settlements becoming more permanent (c. 1960s), people from the two groups were reported to have travelled back and forth, intermarried, and traded goods. The main travel route between them was a traditional trail through the Mackenzie Mountains. The trail begins near Good Hope just above the Ramparts, runs through the upper Arctic-Red River valley passed Tabasco Lake, and on into the Yukon (Auld and Kershaw 2005: 14). Tabasco Lake itself is near the contemporary boundary of the *K'asho Got'ine* district- significantly distant from Fort Good Hope- and is no longer visited by hunters very often

by their own means, although some adults and elders recall having lived and trapped in the area. Occasional trips organized by community agencies have therefore been important in maintaining familiarity with its unique landscape. In the 1970s, the community Chief chartered a plane to take a group there, but by 2008 many of the attending elders from this trip had passed away. One RRC organizer noted these factors and the historical significance of the area as his reasons for supporting a hunt there. "*The hunters from here have been using that lake for... maybe hundreds of years. Actually that lake is named after my grandfather, so... I put a big push behind it to... go to check it out again, eh… Actually the trail from... ah, the Ramparts up here goes all the way there. Ya, so actually it's our traditional hunting place."*

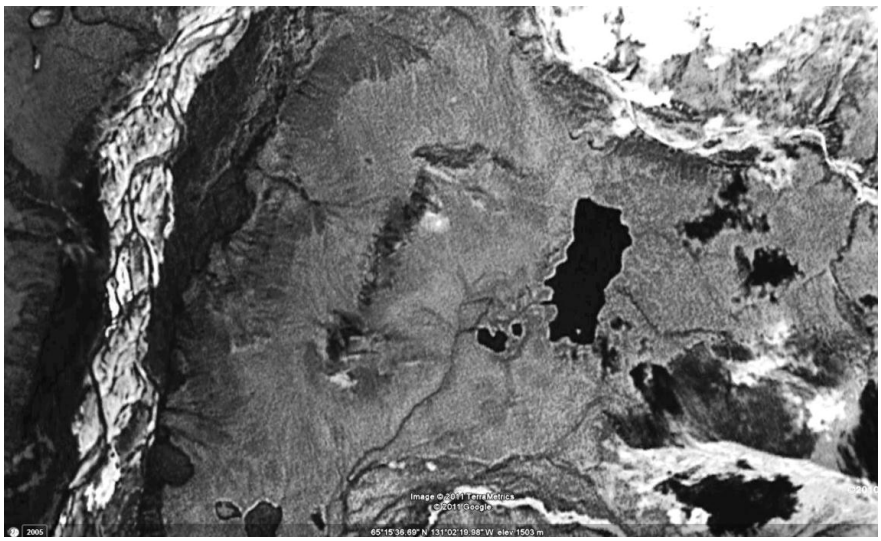

Figure 5-3: Tabasco Lake

One interviewee suggested that hunting in areas like Tabasco Lake (which is located in the overlap between the Sahtú and Gwich'in settlement areas) was also key to demonstrating sovereignty in areas that may not be commonly used by individual hunters. By using areas around (or just outside) the district boundaries, the informant felt that leaders might be better able to negotiate mutual land-use agreements with neighbouring groups, potentially strengthening First Nation control of lands in contiguous areas of the Yukon, which operates under a different land-claim agreement.

While an option to travel instead to Horton Lake (300km from Good Hope) was discussed for the 2008 community hunt, a key concern was the cost of an air charter.

Travel to Tabasco Lake which is located only 160 km away, was thus seen as comparatively inexpensive. One organizer also noted that in light of reports of declining populations of Bluenose West caribou, it would be good to help them recover by pursuing other species instead (42).

In 2007, community leaders working on a regional protected area strategy had visited the Tabasco Lake area, and brought back pictures of the impressive landscape spurring interest among hunters. As mountain landscapes are visible, but tantalizingly distant from Fort Good Hope, many participants of the hunt were clearly drawn to the location for its beauty and power. Related to this was an interest in experiencing the unique landscape in terms of the specialized hunting techniques necessary there, and teaching these to younger generations.

> *I just noticed lately there's lot of young people... trying to learn... like reapply the traditional way of life, like because they're brought up in the community. And, like you... even though you're like in the community you don't experience... or they've lost their culture, especially the youth now, some of them can't even make a fire out in the bush, out on the land there- they don't know which tree is... you know... which trees to burn. I guess... like I noticed there's a few other programs they bring some of the youth out, girls and boys and they really enjoy that… in order to teach our culture to our youth we have to bring them out. On-hands training, to experience that. Only way to teach. Can't be taught in... school, gotta be taught out on the land* (42).

But other than prioritizing these age groups, RRC organizers were adamant that it was not their role to direct or restrict hunt participation. It appears as though a previous trip to Horton Lake arranged by community institutions had involved some restriction in terms of participants which led to controversy, and the RRC was at pains to avoid a similar situation.

Another factor in the decision to locate the hunt at Tabasco Lake was the possibility of meeting with a nearby big game outfitter to discuss potential business collaborations, and retrieving some meat left over from their hunts. Big-game hunters often utilize only the trophy parts of harvested game, and outfitters deliver excess meat to communities such as Norman Wells and sometimes Fort Good Hope (Larter and Allaire 2009). A Renewable Resource Council member describes,

> *I told the chief at the time- we should get in touch with this guy… and every time he... has excess meat we could get RRC to charter a plane out there and bring the meat back to the community for the people. Set up that... [so] I talked about the idea of going... going out there and doing our own hunting... they can explain to the big game outfitter about the excess meat, and plus they could, you know, go out and just do a community hunt. And [get] a variety… of sheep, caribou, moose (42).*

But despite this interest, no meeting with the outfitter took place.

Over the hunt, the group did harvest ten mountain caribou, two moose, and three sheep. The meat was dried and some portioned into zip-lock bags. Participants were informed that the meat would be distributed out to the wider community upon their return. Similar to the 2007 distribution, an RRC employee loaded the meat into a truck and distributed it carefully out to as many households as possible, but in this instance problems emerged. These resulted from issues about the quantities of meat reserved by hunters for their families, versus community expectations for provision. In a subsequent interview, one organizer appeared frustrated that anyone should have expected more than a small piece when six or seven hundred people were involved. Another mentioned that the quality of pieces distributed was also contested.

> *Ya, [we]... instructed the office manager… to make sure that they bring back meat and distribute it among the people. And, when the plane came back and the meat was distributed, there was complaints about it was bad meat... there was some... because of... there's not much shot… But then everybody got... we made sure that everybody received a piece of meat, but then there was some complaints about funny meat given out, and... the amount… ---- didn't like that... just about ran the RRC board out of office, there- from gossip (43).*

Tabasco Lake 2009:

The priorities behind the September 2009 community hunt closely resembled interviewees' descriptions of the previous year, however, as the lead author was present during the organizational process, it is offered here in more detail. The Renewable Resources Council were again the main organizers, and the mountains again the location of primary consideration, being less expensive than travelling to Horton Lake for caribou. The hunt resulted in the harvest of 4 moose, 3 mountain caribou, and

1 Dall's sheep (approx. 1470kg of meat) by 15 community participants over 9 days. In contrast to the previous year, the meat was distributed primarily by the hunters themselves.

A meeting was held in August with members of the Council and interested hunters to form a plan. As in previous meetings, the discussion was often in Slavey and included the use of paper and digital maps (such as Google Earth) to discuss potential locations. Hunters each weighed in with their own personal experiences hunting and trapping in the areas of interest. There were a number of intertwined economic and ecological factors that influenced the decision to hunt at Tabasco Lake again. Some hunters supported a return there as it already had two ATVs and a canoe on-site, as well as salvageable supplies from the old camp. But organizers remained concerned with the expenses involved in chartering an aircraft, and deliberated over ways to reduce travel costs. To this end several alternative hunting locations in the Mackenzie Mountains were considered. Some favoured Yadek Lake, although others (most notably the lead hunter) raised concerns about the availability of game there. The nearby Tupik Lake was then proposed, and seemed to receive general support. But after a call to Northwright Airways to see if a Twin Otter could land there, organizers were informed that the lake was too risky to access by plane. The organizers then settled on Tabasco Lake.

As in 2008, the 2009 community hunt at Tabasco Lake created access to game not easily harvested by individual hunters. The opportunity to hunt mountain caribou and especially sheep, were key factors drawing some hunters, while others supported it for the large moose found there, only a few of which would be needed to provide sufficient meat for the community. The political importance of using peripheral areas of the district, and the historical significance of the traditional trail between the Mackenzie River and the Yukon as described in the 2008 hunt above, were also factors in selecting this site a second time.

Once the decision to go to Tabasco Lake was made, a sign-up sheet was posted at the RRC office during the last week of August to solicit interest from potential hunters. A total of 29 people signed up with 15 finally participating in the hunt. This consisted of 4 elders, 5 adults and 6 youth (plus 3 researchers who also contributed finances towards the cost of the trip). In line with reports by interviewees about the previous year, the

lead author was aware of no obvious mechanism of 'selection', and in fact many questioned about this were also somewhat perplexed as to why so many people dropped off the list. Subsequent questions to non-participants regarding this gleaned that medical, financial, and time constraints were the most common reasons. Some hunters also asserted that the mountains were 'rough country' for hunting, that the availability of game there was uncertain, and that the narrow mountain valleys were not conducive to a large group hunt.

Introducing youth to this area was again a priority for the organizers. Several interviewees highlighted the importance of continuity-of-use in maintaining a proper relationship with the land, which necessitated participation by both youth and experienced elders. The hunt leader summarized it best.

> *Well, in the old days there was a lot of our elders that had their own traditional grounds… So, the land is becoming important, but after all our elders are disappearing or deceased... then those traditional grounds are abandoned. And now I see a lot of it. And I get sad because once that was really happy hunting ground. Everywhere you would hear dogs barking, because there was so much people around they used to visit each other with dog team, it's just lively. But now you see it's like all abandoned, where is all those people that... It's like that, so... I know it's very important to use the land, cause that was the old teaching. By being on the land you keep the land alive and the land keeps you alive. It's like an exchange. And so, the land, like us... my grandfather's side we are the Mountain people, and so you always talked about the mountains. Now, they enter land claims, self-government, I'm saying, like... we should leave kind of marks on the land, where we've been. And so our kids, that way they can use those places. And now my grandchildren… was with us, he knows more about that surrounding where we were, Tabasco Lake area. It's true that, true that area, that's where the trail ran to Mayo, and so it's important that he... he's just beginning to understand that land a little bit more (05).*

Considering ways to reduce the cost of traveling by plane to the lake, councillors discussed the possibility of taking boats part way up Ramparts River and flying a shorter distance from there, but ultimately decided against it. Such a trip would be hard on participating elders, and finding a landing site for the plane remained problematic. Concluding these discussions, the Council voted to fly hunters directly from Fort Good

Hope to Tabasco Lake as they had the previous year, and allocated funds for three trips each way by Twin Otter.

During the hunt, several people observed that there were not as many women in attendance as organizers had hoped, which was significant as women undertook most of the laborious task of drying and preparing the harvested meat. Hunters thus stayed in camp rather than hunting for 2 days during the trip to help the women work on the meat, as they were otherwise at capacity.

On the last day of the 2009 Tabasco Lake hunt, preserved meat was distributed amongst all the participants by the hunt leader. "*I just kind of find that balance, really quick. I know a lot of them have families too, and some of them are single, but they still have big families back home... children. So I was thinking about all those things. And I know who is reliable and who can hunt... for themselves. Kind of look at that balance"* (05).

Previous to allocating the meat out among participants, some meat was put aside for the Renewable Resource Council, which amounted to four large coolers packed with bags of organ meat, 'fry meat', and 'stew meat' as well as dried meat from the tepees. During the distribution of meat to harvesters, some additional meat was set aside for the RRC by the hunt leader. He later explained, "*Well, whatever was left we had to give it into RRC, and they do what they want with it. And they could do a feast with it, or have cookouts down in the field. It's up to them"* (05).

This effort to redistribute some of the meat through the RRC was likely part of a strategy to ensure that the hunt would be more acceptable to the community. A few conversations between harvesters during the hunt about how to placate the community upon returning evidence this. One hunter expressed that at least four moose would be needed, "*then it'll be good*" (field note September 4, 2009). The RRC, however, had sought to leave it to the hunters to distribute the meat, and had only wanted enough to provide lunches at a regional meeting of the Sahtú Renewable Resources Board. *"I think this year... what we wanted was the hunters to... do their own hunt and keep whatever they wanted. All I wanted was some meat for... upcoming assembly. But they sent out more than... I guess we got more than what... we needed for that meeting..."* (40). In this case, both the hunt leader and the RRC seemed to be delegating each other to

assume a larger role in the distribution of meat, reflecting a concern regarding perceptions of the hunt within the wider community. As the RRC found itself responsible for more meat than they had expected, an employee and assistant shared it out. Five of the eight households that the RRC reported sharing meat to were elders' residences, although in some cases they gave amounts of meat to elders in the understanding that they would then share it out to other elders.

> *Well, we just gave it... uh, to some of the elders, eh. We tried to stay with elders that have no hunters with them. No hunters for them. Ah, that's about it. I think we went to about 6, 7 different households… we dropped off maybe, some bags to some elders. Then [they can] share with their friends… Like the elders… I gave maybe a 50 pound bag to one person, one elder. And he was supposed to share it with all his friends around there (40).*

Notably, almost all the elders given meat by the RRC were not reported to have received meat from other hunt participants. Potentially, the distributor took into account the family structures of the hunt participants, and selected elders who would be less likely to receive meat through those structures. Other concerns of equity revolved around the recipients of meat from an earlier collective hunt:

> *Well one of the reasons I went only to the elders... cause the last time… I think it was about middle of July, somewhere in there we sent out a couple of boats, to get meat for the community. [They] came back with… 3 moose and 1 caribou. And what we did was we dropped it off- the whole thing in the middle of the field. And it was gone within a couple hours. And then the elders ended up with nothing. This time around I wasn't about to drop it off in the field again; that's why I went to the old-folks home, and a few other houses. Tell them to share it with their friends (40).*

In terms of public reactions, criticisms were again apparent, mostly to do with the cost of the hunt relative to the amount of meat retrieved. As the researcher would mention the community hunt in casual conversations fairly often in the weeks after we returned, many would retort that they had not received any meat out of the hunt. Others were frustrated at the persistence of such complaints, particularly those they considered to emanate from households with able young people who could have attended the hunt.

> *... Pretty sure they have hunters... young hunters that can go out. They're doing nothing. Walking around... Don't see anybody working… I talked to some of the hunters when they came back; they said 'There's a lot of young able hunters in town, why didn't they come, and then work on their own meat?' That's what it was all about. And apparently they want a couple of plane-loads of meat, and that's not the point... why should this group of hunters work that hard?... It's not an easy job. Why should they work that hard for the community when they're going to get nothing out of it?* (40)

At a public meeting in mid-September, an RRC councillor summarized that 'the idea was to harvest your own meat, but when they came back, a lot of people didn't like it. The board of directors is getting tired of it' (Field note September 15, 2009). This followed discussions among hunt organizers about whether to actually change the title of the hunt to something other than a 'community hunt', as it was unrealistic to expect such small groups to harvest meat for a community of 557. Thus, organizers faced challenges in terms of the necessity of recognizing the work harvesters accomplished during the hunt and also meeting the expectations of a large community.

River Hunt 2010 (Plan):

A community hunt was again planned for September 2010. The hunt was to be located on the Mackenzie River at Sans Sault, a few kilometres above the location it was held in 2007. The hunt was planned by a group of hunters, including the new president of the district Land Corporation, who requested support from the Band and Renewable Resources Council. In terms of participants, one lead organizer assumed responsibility for the sign-up list. Although there was again little indication of a process of selection, younger people were explicitly discussed as a priority group to bring along- at least three male and three female youth. Funding would also be set aside for an elder to participate and specifically to teach the youth. One organizer expressed later,

> R*ight away I wanted youth go on there. I wanted to get some youth to come forward and say 'ya we wanna go on a hunt'. It's kind of losing its tradition, hunting. Not a lot of youth are wanting to go hunting anymore, dunno why… what happened there. So that was my main priority for the hunt. Get youths out. Every so many years, people do the hunt and... not a lot of youth... youth benefit from these hunts- they kinda get left out* (43).

The RRC would be responsible for the meat distribution, although one hunt organizer mentioned later that, *"I would have told them… to visit the single mothers first, to visit single parents... more in need of help. There was a lot of couples out there that could wait. Not saying they wouldn't get anything, but they could wait till after all these people who need help... get their share anyway*" (43). Backup plans for meat distribution were also discussed in case only a small amount of meat was harvested. One of the objectives being to bring the community together, a cookout in the field or community feast would be arranged in this case.

As in previous years, one purpose of the hunt was to secure meat for the community, and the intent was to harvest moose known by elders and hunters to be abundant in certain areas in the Mackenzie River islands and tributaries. An organizer also described collective hunting as potentially bringing the community together in a broader sense.

> *I don't know me, I was just trying to show the people that there is all these people out there at the end of the day... like usually when people do stuff like that everybody comes out of it with a negative view of it, saying 'oh these people are only there for themselves'… Those are the reasons I see to do a community hunt, is just to bring the community closer together, and then at the end of the day the elders and the single mothers have a sense of comfort that there is people out there that are going to bring some wild meat back at the end of the day (43).*

The process of planning the hunt involved eight organizers/prospective hunters discussing the key concerns of its timing, cost and location. The most cost-effective option was likely hunting from the Mackenzie River, however, the availability of moose in this area was perceived as uncertain. An elder, exceedingly familiar with many of the tributaries, who was specially requested to participate in the planning, referred sceptically to the number of wolves in the area at the time (which obviously had negative implications for the prevalence of moose). There were also concerns about low water in the creeks which would make them un-navigable for river-boats without risking damage to their propellers.

To increase the likelihood of success, hunters also debated setting up camps at two locations, however, this would have created additional complications in terms of the

camp equipment and boats necessary, and thus Sans Sault was eventually agreed upon as the sole location. Backup plans were also discussed in the event of not finding enough moose, including the possibility of sending boats to Tsiigehtchic or Fort McPherson to access Porcupine caribou around the Dempster Highway. In a later interview, a hunter noted that the Gwich'in had *"…asked us to hunt there and they said as long as we... have some [of] their peoples with us… And they said: 'take what you guys need'"* (41).

Despite this careful planning, the hunt did not take place in 2010. Leadership in the hunt's organization was described as a key impediment. Notwithstanding the 2010 hunt-organizer's significant efforts, the 2009 hunt had been led by a local leader of particular esteem, who regrettably passed away in the summer of 2010. His presence was certainly missed, one interviewee ruminating that "*Every hunt needs a head hunter. When [he] was alive, he made the arrangements and people followed him*" (40).

A fuel shortage in Fort Good Hope also led to reluctance among some organizers to push ahead with a large-scale hunt. The other significant issue concerned hunters providing their own boats (and props) for hunting activities in shallow creeks. Members of the RRC recalled hunters' requests for compensation for broken props following the 2007 hunt, and explained that this was one reason they chose not take a central role in the 2010 case. "*A few years ago we you know we spent a whole bunch of money organizing a community hunt, and after the community hunt we had to pay for... somebody's... outboard motor foots... props, a whole bunch of them* (42).

Expenses from the 2009 Tabasco Lake hunt had also stretched the RRC budget such that winter trapping programs were cut back, and in 2010 the Council preferred to make a major investment in trapping, rather than in another community hunt. This may be part of a wider shift in Council policies regarding collective hunts, as explained by one member,

> *Well mostly we sponsor all the hunts… But this year we didn't because it's getting harder and harder to sponsor community hunts. Take float planes for example- it's 2200 dollars an hour. That's the cheapest- that's not counting gas. Then… you try to put a whole bunch of boats together, nobody wants to go up the*

> *creeks and wreck their outfit. It's too expensive, they all wanna get paid. It's getting harder and harder to find volunteers to do community hunts. So what we do is, maybe give somebody money for gas, or give them 30 gallons or something. 'Share with your friends whatever you shoot', that's the idea behind it now (40).*

Discussion:

The community hunt is a contemporary harvest strategy used by many Dene and Inuit communities throughout the arctic and subarctic of Canada. In increasing the chance of harvest success while reducing the individual costs of hunting, contemporary community hunts seem to serve the same purposes as collective hunting strategies described in early Dene ethnographies. As such, the practice is not new, but the formal organization of hunts through community institutions can be considered a long-term adaptive strategy applied to historical collective hunts. This is most likely interwoven with the broader socio-economic and political changes occurring in northern Canada, such as the settlement of land claims and increasing economic development. Organizers' use the hunts to assert territorial rights and to facilitate on-the-land teaching to youth thus have beneficial implications for the social-ecological resilience of hunting livelihoods in Fort Good Hope. The cases explored here also evidence that community hunts are adaptive to local ecological and socio-economic conditions. This can be seen through organizers' deliberation, experimentation, and learning through iterations of hunt planning in situations characterised by various socio-economic and ecological challenges. Such processes demonstrate that community hunts as a strategy are somewhat resilient, although clearly difficulties continue for organizers in addressing social challenges to the hunts.

Ecological Factors influencing the Organization of the Community Hunt (2007-2010)

There are several patterns that demonstrate how organizers adapt community hunts to ecological conditions. Altering hunt location and the species targeted represents a short-term coping strategy in this regard, and also reflects a concern for ecological management.

Changing hunt locations and the species targeted were premised in recognition among some organizers that continuing to go back to the same places every year presents ecological problems. For example, people were concerned that Horton Lake was no longer a good place to hunt because of the shortage of fire-wood, and that hunting there may disturb the migration of the Bluenose West caribou herd and inhibit their recovery. As this research was carried out with an interest in understanding more about adaptations in Fort Good Hope to declining barren-ground caribou populations, the fact that the hunts did not target barren-ground caribou is important. Although there was some discussion in the context of planning of the 2010 hunt to go to the Dempster Highway to harvest from the Porcupine barren-ground caribou herd, and an implicit recognition each year of an option to go to Horton Lake, in the end neither Bluenose West nor Porcupine caribou were a focus of Fort Good Hope community hunt activities from 2007 to 2010. Thus, besides coping with ecological conditions, organizers also integrated a degree of ecological management directed at improving those conditions.

Choosing between alternatives in hunt location and species also rested on well-developed ecological knowledge of organizers about the suitability of different areas for hunting; the cases presented here demonstrate that this knowledge was filtered through discussions between harvesters on the ecological attributes of potential hunting sites. As one informant noted, "*I guess around here we've been hunting moose so long, so everybody goes to one-another for advice and knows the exact time when to go out. Same thing with Colville too, they know the exact time when the caribou start migrating eh, so. They have the time right on... and we have it timed right on"* (43). Ways of using ecological knowledge to inform decisions are messy, however, in the sense that not all observations are accepted as fact, and a peer-review process plays a role in interpreting the accuracy and relevance of observations and knowledge. Some elders are more influential than others in part because of their age and experience hunting, but disagreements can also prompt others to double-check their recommendations for future contingency. Decisions can also be affected by the capabilities of transportation mechanisms to cope with ecological features such as shallow creeks, and small lakes (for example Tupik Lake, which was considered unsafe to land on by a North Wright pilot in 2009).

Table 5-2: Ecological Factors in Deciding Hunt Location:

Year	Ecological Attributes of Potential Hunting Locations:
2007	"[From the cabin across from where Hume River flows into the Mackenzie] people could go [for moose] up Ramparts River, Hume River, Mountain River, whatever they wanted… and then hunt through the islands if they wanted to, for rabbits" (33).
2008	"[At Tabasco Lake] they could, you know, go out and just do a community hunt. And [get] a variety… of sheep, caribou, moose" (42).
2009	Although some people wanted to go to Yadik Lake, the hunt leader opined "there's nothing there". A mix of available species was a key benefit to locating the hunt at Tabasco Lake. This included hunters' preference for Dall's sheep and mountain caribou, balanced with the availability of large moose that would provide sufficient meat for the wider community.
2010	Hunters travelling on the Mackenzie river had seen few signs of moose in the locations accessible for hunting. An elder noted the numerous wolves in tributaries of the river, which meant there would be fewer moose.

Socio-Economic Factors influencing where and what to Hunt (2007-2010):

In each of the 2007-2010 community hunts, dynamics differed in terms of organizers' responses to two interrelated socio-economic parameters: the costs of the hunt versus the amount of meat harvested, and the amount of meat to allocate to participating harvesters versus the wider community. These issues received much attention in the planning phases of each hunt, as organizers were clearly aware that they were the focus of strong community perspectives. Various coping strategies were employed in responding to these concerns, including trying to ensure a sufficient harvest by carefully choosing the hunt location (especially in 2007), extending its duration (in 2008 and 2009), and encouraging more participation (in 2009), while also trying to minimize travel costs each year.

In 2007, socio-economic issues were addressed through situating the hunt at an easily accessible location nearby the community where moose were abundant at the time. This hunt was relatively successful vis-à-vis a prior one at Horton Lake, and resulted in meat from 8 moose (approx. 1400kg) being widely distributed. In 2008 the RRC organized the hunt with several objectives in mind that warranted locating it at the more-distant Tabasco Lake. Its duration was also extended from the previous year. The

hunt resulted in a greater harvest (approx. 1825kg of meat), but although it was widely distributed, there were concerns about its quality and cost. In an effort to increase the yield of meat when the hunt was again organized at Tabasco Lake in 2009, its duration was extended from 6 to 9 days; costs were also lower as some supplies had been left on-site in 2008. Fewer people attended the hunt, however, despite a revised meat-distribution strategy to recognize the efforts of harvesters. Fewer participants (especially women) limited the amount of meat that could be effectively processed during the hunt (approx. 1470kg), while public concerns about its cost remained significant. With budget constraints in 2010, the RRC's promised contribution to the hunt was substantially less, and the hunt was finally cancelled. Through these iterations, the RRC clearly attempted to adapt hunting dynamics to the immediate socio-economic context of the community, but also collectively reflected on their role in hunt planning, and the purpose of the hunt itself. From the standpoint of social learning theory, it is apparent that yearly discussions among hunt organizers are consistent with the 'single loop' learning model, wherein the missteps of previous hunts were collectively reviewed and procedures altered accordingly. Over the four year interval it is also evident that broader discussions among organizers about the rationale and feasibility of 'community hunts' resemble the 'double-loop' model of social learning wherein values and policies are re-examined.

A second major socio-economic factor influencing the organization of the hunt was the tension between different perspectives about community needs and benefits. Organizers were constantly looking at finding ways of obtaining broader community benefits besides just improving food security. In this respect, the demonstration of Aboriginal interests and rights regarding lands and resources defined in the Sahtú Dene and Metis Land Claim Agreement was important. In asserting the territorial claim of the *K'asho Got'ine* people and maintaining an active connection between local people and landscapes such as Tabasco Lake, not commonly used by individual hunters, the community hunt was adapted to political complexities of overlapping Aboriginal rights in the region. Given the growing pressures of industrial activity in the Mackenzie basin, decisions regarding the location of community hunts (in 2008 and 2009) may be seen as responsive to a broader set of political and economic conditions. Another social need clearly identified by hunt organizers in all four years

was that traditional livelihoods within the community should be bolstered- that youth want to learn traditional skills and opportunities should be created to support that process. The objective of organizers to prioritize certain participants- especially elders and youth on the hunts (particularly in 2008, 2009, and 2010) was premised in this view. Participation was difficult to ensure, however, given the controversy about participant selection reported after the 2007 Horton Lake Hunt. But in all the hunts considered here, a balance did result whereby participants included skilled older hunters essential for a successful harvest, and younger hunters who were the focus of teaching efforts. The repeated use of the community hunt to bolster interest and capability in harvesting techniques among young potential hunters and also to assert territorial harvesting rights indicates that it contributes to the resilience of hunting livelihoods more generally in Fort Good Hope.

Although hunt organizers were apparently responsive to community perspectives, the values of experiential learning, skill-development, and re-acquaintance with important landscapes expressed by hunt organizers and participants were not often referenced by non-participants of the hunt. In terms of resilience theory, considering these relationships in terms of feedbacks, it could be that a social feedback operates between the community and hunt organizers, but not vice-versa. That is, organizers and participants are influenced by community perspectives, but not the other way around. This is potentially problematic, if the values and objectives sought by participants and organizers are beneficial to the community in terms of contributing to social-ecological resilience by bolstering knowledge and hunting capability. Alternatively, the range of potential benefits could be well-understood, but interviewees may simply disagree about which are more important.

Limitations:

The characterisation made here of community hunts as a resilient strategy for hunting in the vicinity of Fort Good Hope is based on a relatively short time series, and given that the difficulties described above led some organizers to question the feasibility of such hunts, we recognize that alternative characterisations besides 'resilience' may fit. Importantly, however, community hunts are also undertaken at other times of the year (such as the 'spring hunt'), and as such this sample is unable to track their seasonal

flexibility, nor do justice to potential differences in their organization between seasons. Further studies would be necessary to incorporate these dynamics and to broaden the data such that elements of an adaptive cycle might be better identified.

Conclusions:

Like other hunting societies in northern Canada, *K'asho Got'ine* people in Fort Good Hope have always had to deal with uncertainty in the availability of valued resources such as caribou. Though group hunting strategies have been described in detail in the ethnographic literature, 'community hunts' are less understood, particularly as strategies for dealing with contemporary problems resulting from ecological uncertainty. With this in mind, this paper explores community hunting practices of the *K'asho Got'ine* with the aim of understanding more about the social-ecological resilience of Dene communities to decreased availability of barren ground caribou in the 2007 to 2010 period.

Research carried out with the Fort Good Hope Renewable Resources Council resulted in detailed descriptions of the autumn community hunts between 2007 and 2010. By analyzing hunt organizer's decisions about what, where, and how to hunt, we conclude that community hunts are flexible and adaptable to changing socio-economic and ecological arctic conditions at short-term scales and likely long-term scales. From year to year, socio-economic and ecological conditions resulted in different choices in terms of hunt's organizing body, its location, duration, participation, species harvested, and meat-distribution strategy. These choices were made through deliberations by experienced harvesters and can be considered a series of experiments consistent with processes outlined by theories of social learning. Moreover, the experiments were undertaken in the context of hunt objectives such as territorial assertion and the transmission of traditional knowledge and skills that contribute to the resilience of the community to changes in local resources such as barren-ground caribou.

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Chapter 6: Hunting Organization and 'Ways that People Help Each Other Out and Share What they Can' in Fort Good Hope NWT.

Social inquiry into hunting dynamics in northern Indigenous communities in Canada have tended to focus on hunting individually or in small kinship groups, although there is also an increasing recognition of the role of more formal community hunts. Descriptive data on community hunt organization is limited in the context of Dene communities, however, and also regarding the mechanisms by which harvested foods are shared out. This paper considers whether or not the dynamics of sharing meat differ between a community hunt (September 2009) and a series of household-scale hunts (November 2009) in the *K'asho Got'ine* Dene community of Fort Good Hope NWT (*Radilih Koe*). We consider how sharing might differ in terms of interactions initiated by a request from a recipient (discussed elsewhere as 'demand-sharing'), versus those initiated by a harvester (giving). Results reveal that the number of reported sharing interactions was similar in each case, representing substantial proportions of the total harvests, but that requests for meat were more common after the community hunt which may indicate an augmented scarcity of meat. At the same time, these requests were made especially by elders and those in need, reflecting complex norms of resource management and flexible social networks. This study affirms the continued relevance of the Dene institutions of sharing within contemporary communities while at the same time providing additional depth on a social dimension of community-based resource management.

Introduction:

Barren-ground caribou from the Bluenose West herd migrate through the Sahtú Settlement Area of the Canadian Northwest Territories (NWT) annually, and are harvested for subsistence by several Indigenous communities within the region. While natural population variability is precedented within the herd, there is much concern about concurrent declines in the population estimates of several barren-ground caribou herds, including the Bluenose West (GNWT Wildlife Division 2011). This raises the question of how Indigenous harvesters are responding to a potentially-reduced availability of caribou, which remains a highly valued food. Importantly, availability

issues as they relate to communities can stem from variable herd movements in addition to changes in overall population numbers. Caribou may not be perceived as scarce *per se*, but simply as having moved further away. A previous chapter has outlined a time-series of autumn community hunts arranged in Fort Good Hope NWT (2007, 2008, 2009, and 2010), and proposes that such collective hunting strategies may play a role in coping with and adapting to ecological changes such as a reduced availability of barren-ground caribou. Also outlined are the difficulties organizers faced in conducting the meat-sharing processes after these hunts in a manner acceptable to both the broader community and the participating harvesters, which underscores that other coping mechanisms in communities such as sharing norms are simultaneously dynamic. At the end of the 2009 hunt, harvesters from ten households were allocated most of the total meat (about two thirds), while the rest was reserved for a community organization- the Renewable Resource Council (RRC) to distribute to elders and those in need. While the decision to allocate most of the meat to the harvesters seemed to be part of respecting their considerable effort over the course of the hunt, harvesters also clearly expected to share much of it with the wider community as well. This study shows that they did so, but that the sharing mechanisms differed from a comparative series of household hunts.

While much contemporary research in northern communities documents the importance of sharing to northern communities, few reports detail how norms of sharing can vary according to social, ecological, or organizational circumstances. Accounting for variations in sharing practices was certainly a focus for some ethnographical work during the last century (Helm 1965, Osgood (1970 [1936], Savishinsky 1974), but more recently many of the references to food-sharing norms have only broadly indicated their importance for arctic peoples in buffering against variations in resource availability (Berkes and Jolly 2001, Nuttall et al. 2005, Chapin et al. 2006). The recent literature that does in fact examine the variations and dynamics of sharing in contemporary northern communities also usually focuses on Inuit groups (Condon et al. 1995, Collings et al. 1998, Bodenhorn 2000, Wenzel 1995, 2000, Magdanz et al. 2002, 2004, Kishigami 2004, Ford and Beaumier 2011, Collings 2011), although some exceptions include Berkes et al. (1994), Nelson et al. (2005) and Parlee et al. (2006). Nelson et al.'s (2005: 291) account in a Northern Alberta Cree community

records that reduced levels of harvesting impede remaining harvesters' abilities to look after the wider community, forcing them instead to focus on their own families, while Parlee et al. (2006) indicate in a Gwich'in Dene community the variable extent of berry-sharing networks in different contexts of resource availability. While in plentiful years berries were shared more widely, in lean years social norms are shown to restrict sharing to special groups and close family. Our study therefore makes the contribution of showing that the organization of resource production processes may also potentially influence the dynamics of their distribution.

Literature Review:

Harvester Organization:

Household Hunts

Hunting individually, or in small kinship-based groups has most often been the characterisation of Dene harvesting patterns in ethnographic literature. Although Helm (1965) does describe collective hunting forays made by groups of Dogrib Dene hunters, Osgood (1970 [1936]), Savishinsky (1974), Christian and Gardner (1977), and Rushforth and Chisholm (1991) relate hunting as a relatively solitary endeavour, with 'the harvester' being provisioned by his family and supplying their group with meat. An individualistic model of the 'forager' also seems prevalent in the behavioural ecology literature, despite Winterhalder's (2001) claims to the contrary (Wenzel in Hawkes et al. 1993).

Community Hunts

Community hunting strategies may be increasingly important practices, however, particularly in the context of highly variable resources and sedentary communities. Rushforth (1977) explains that *Déljne* harvesters who faced difficulties accessing traditional hunting areas were assisted through community-organized hunts supported by Game Management officials, while Kruse et al. (2004: 824) tie community hunts directly to shortages of meat in Old Crow, Yukon, considering them 'triggered' if less than 50% of the community 'need' for caribou is met (although they are vague as to what constitutes 'need'). They then describe households as 'pooling their resources' to

hunt collectively in areas where caribou have been seen in sufficient numbers. Fort Good Hope community hunts are typically sponsored by local institutions, such as the Band Council and Land Corporation, however, and thus they would be better characterised as the community pooling its resources. The trigger described by Kruse et al. is also not quite borne out in the Fort Good Hope community hunt examples given their annual pattern. Other important aspects are certainly similar to descriptions of community hunts in other areas of the north, however, such as providing opportunities for intergenerational knowledge transmission (Peloquin and Berkes 2009), and reducing local inequities in access to Dene foods by bringing back meat for elders, single mothers, and those in need (Kishigami 2000, Castro 2011: Pers. comm.). But whereas these other accounts describe monetary payments made to harvesters and the centralized redistribution of harvested meats, the 2009 Fort Good Hope autumn community hunt saw no payments to harvesters but a more decentralized system of sharing meat highly dependent on their willingness to share (although a more centralized redistribution had occurred in previous years).

Importantly, regarding the property characteristics of the harvested meats, Kishigami's (2000) and Castro's (2011: Pers. comm.) descriptions imply that meat becomes common property through community institutions paying for it directly. The Fort Good Hope community hunt is on the surface more ambiguous, as hunters are not paid for their labour but substantial public funding is nevertheless put towards hunting-related travel costs. These differences between the Fort Good Hope community hunt and others noted above may pose a challenge to arriving at a commonly-acceptable definition of what a 'community hunt' actually is. As we use the term here, it is meant to encompass any collective hunt that involves support from or coordination through community institutions, and is designed to benefit the wider community (although perspectives regarding the ways it does this might differ). Further details on the community hunt and comparative household-organized hunts are presented below.

The Dynamics of Sharing:

In the vast literature on sharing in a multitude of Indigenous contexts across the globe, the norms surrounding sharing between harvesters and their communities or groups seem to be the most popular focus of attention, and it is also our focus here. Kitanishi

(2000) and Kishigami (2004) refer to this as the 'second order of distribution' (the first being between hunters in the field). Such popularity seems to stem from observations that harvesters often receive little in return for providing for their communities, and is certainly compounded by a basic academic fascination for the perpetual human struggle to 'fairly' distribute scarce resources. Thus, ethnographic and behavioural-ecological investigations into sharing within human societies very much complement similar themes in common-property literature, which tends to focus on the primary allocations of resources *in situ* (Ostrom 1990).

Food-sharing practices in northern communities have been often characterised broadly as a coping mechanism to mitigate the effects of variability in resource procurement (Nuttall et al. 2005), and in local settings in terms of 'insurance' (Jarvenpa 2004), and equity (Berkes et al. 1994). Food-sharing is thus part of a suite of strategies that also includes flexible harvesting techniques (Brinkman et al. 1997), which in combination have been successful in contending with the harsh ecological uncertainties of the Artic (Berkes and Jolly 2001). Among the *K'asho Got'ine* people, Savishinsky (1974: 78) suggests that "flexible implementation of generosity as a cultural value allows for the redistribution of scarce goods and services in a way that maximizes the well-being of all concerned." These norms continue in Fort Good Hope, and "people are expected to share" in accordance with Dene law (Barnaby et al. 1977: 120).

'Request Sharing'

It has been commonly described that much food-sharing between households in the context of northern Dene communities occurs in response to a request or demand. Helm (1965: 34-5), for instance describes that:

> "[Items shared] from one household to another are occasionally volunteered but usually solicited… Solicitation appears often to take the form of a simple statement of lack, or need; that this is a request is understood. Generally, there is no promise actual or implied, or repayment in kind or value. Those families that seldom ask others for goods seem to be those more likely to voluntarily 'repay' in some form equivalent at a later time, but 'repayment' or counter-prestation is not seen as obligatory, or even to be expected."

Similar examples have been recorded in Colville Lake by Savishinsky (1974: 71), in Déljne (Rushforth and Chisholm 1991: 53), and among the Gwich'in (Osgood 1970 [1936]). In forager societies more generally, Barnard and Woodburn (1988: 11) remark that it is relatively common that a "carcass is recognized as being individually owned and yet at the same time the various members of the camp in which the owner lives have socially recognized rights to a share in the meat which cannot be refused by the owner." These characteristics, sometimes associated with what has been termed 'demand-sharing' have posed a significant challenge to Western assumptions of property and ownership. Winterhalder (1997, 2001) takes pervasive demand-sharing as evidence of 'tolerated theft' or 'scrounging'[10] which considers large harvested items communal on the basis that the harvester cannot effectively defend them (Hawkes et al. 1993). The stability of this model, however, remains contingent upon personal benefits accruing to harvesters (otherwise they would not continue to harvest), which raises secondary issues of what these are and who provides them (Hawkes et al. 1993). While a procreation advantage to sharers is theorized (Hawkes 1991), associated traits of power and esteem are convoluted by accounts of sharing being a necessary means of dispelling the accumulation of authority in egalitarian social contexts (Davis and Attenborough in Bliege-Bird and Bird 1997). This characteristic is also apparent in Savishinsky's (1974: 72) account of redistributive sharing in Colville Lake. 'Tolerated scrounging' itself is only one of four or five explanatory models emerging from the field of behavioural ecology on the evolutionary basis for sharing (others being: 'kin selection', 'reciprocal altruism', 'costly signalling', and sometimes 'group selection' [Wilson 1998, Winterhalder 2001, Gurven 2004]), and efforts to discern which are operating in which contexts have apparently not reached firm conclusions (Bliege-Bird and Bird 1997, Gurven 2004). This has led some to argue that the models are not necessarily mutually-exclusive (Hill et al. 1993, Wilson 1998, Gurven 2004). Further, they have not effectively linked distributional processes to necessarily-cooperative production processes (Ingold 1983, 1988, Gurven 2004: 556). In contrast, Ingold (1983: 563) addresses the principle of collective access as "built into the productive relations of hunting" which are "mystified

[10] Given that this study is premised in community-based research methods, we recognize that the labels used in the behavioural ecology literature are unappealing from a local standpoint.

through the imposition of a concept of private ownership that renders obligatory distribution as enlightened generosity."

'Demand sharing' has also been a contested subject in the ethnographic literature on sharing, given the complexities of potential meanings of demands in different cultures (Peterson 1993, Woodburn 1998). Woodburn (1998), for instance explains that asking for food may not be about attempting to change the relative status of the people involved, but about perpetuating social relations. Rushforth and Chisholm (1991) offer a detailed examination of the relationship between requests for meat and Sahtú-Dene cultural values of autonomy, individual industriousness, and generosity. The authors also delve into the speech patterns of the North Slavey language, and contrast formal indirect speech where the recipient must infer meaning from context, with blunt direct speech that symbolises close friendship (1991:43). As such, more assertive language does not have the negative connotations that might be implied in English. This relates to a point made by Peterson (1993) who compiles accounts of 'demand sharing' in various indigenous societies, and surmises a diversity of meanings for 'a demand', which in some cases may even be interpreted as a gift. In the Gwich'in region, however, Osgood mentions that direct requests were considered bad form and involved a loss of pride for the needy party (1970 [1936]: 112). Thus, although literature does repeatedly remark upon this form of sharing among Dene groups, it is unclear on how requests for meat are appropriate or not in different circumstances.

Network Analysis:

Analysing food-sharing patterns at a network level within northern communities is an increasingly popular technique, although it has been most often employed in Inuit/Innu/Inupiat contexts (Magdanz et al. 2002, 2004, Castro 2011: Pers. comm., Collings 2011). Network analysis techniques aim to uncover complexities within social systems that emerge from interactions between social actors (Collings 2011: 209), in these cases, interactions identified on the basis of transfers of food. They have been conducted with several interests in mind. Magdanz et al.'s work has revolved around broadly identifying the social organization of food-sharing in Alaskan Inupiat communities, although analysis of their formidable data set is ongoing (Burnsilver 2011 pers comm.). They show that extended families are clustered together in terms of their

sharing patterns, and that a relatively small proportion of households (often single male households) account for much of the harvesting activity. Meanwhile in Labrador, Castro (2011: Pers. comm.) uses a network analysis to identify sharing clusters that are more centralized when community institutions assume control of sharing processes. He argues this feature has negative implications for the resilience of the network as a whole, as there is less redundancy if that institution fails, or is removed. Collings (2011) makes a similar case in Ulukhaktok by identifying the kinship relations between harvesters and those to whom they share meat. While he finds full-time hunters to share more widely (thereby associating with more people and contributing to dense social connections within the settlement), part-time harvesters' sharing patterns tend to be more limited to their kinship group.

Network analysis techniques used to identify characteristics of resilience are typically based on assessing the components of a network that are essential to its integrity as a single structure. This involves identifying 'cut-points'- the implication being that although they might tie a network together very efficiently, the network is vulnerable (or would be disintegrated) if they are removed (Brede and de Vries 2009). Denser networks, where fewer cut-points are evident, are therefore usually considered more robust, or cohesive, than sparse networks (Moody and White 2003). Similarly, within a network more 'nested' nodes or clusters are considered more resilient than those on the periphery.

Methods:

This study compares sharing by harvesters after two hunting types: a community hunt (September 2009), and a series of household-organized hunts for caribou (November 2009). Descriptions of the hunts are based on field notes, as the lead author was fortunate enough to join in both hunting activities, and also resided in Fort Good Hope for four months in late 2009. Harvesters were interviewed by the lead author one to two weeks after they returned from the hunts, by which point most sharing had occurred. They were asked about with whom they shared meat, and follow-up questions about the quantities and pieces involved, and how long the remaining meat would last. A key interest in the interviews was to learn more about how sharing interactions take place, especially the mechanisms outlined above: sharing by request

versus giving. In retrospect, more consistent follow-up questions would have been useful analytically, but also may have compromised participants' comfort with the interviews. Several follow-up interviews were also done with recipients of meat, and some of this additional data has been used to refine the information provided by harvesters, but information regarding subsequent redistribution of meat by initial recipients has not been included due to its haphazard collection.

At a household level of analysis, sharing interactions are considered as happening between a harvester's household and others', and we thus exclude interactions where meat was eaten or shared within a household (such as at meals), as well as those involving meat distributed by the Renewable Resources Council. Although not all community hunt participants were 'hunters', everyone who received meat at the end of the hunt is considered here to be a harvester (n=10 households). After the community hunt interviews had been conducted, a comparative sample was sought from household-provisioned harvesters, which began with the first known hunter to bring back barren-ground caribou meat to Fort Good Hope in the early winter of 2009. The household harvester sample ended once a similar amount of edible meat had been brought back as in the community hunt (a total of n=7 households, one of which was also present in community hunt sample), as estimated in the field based on Usher (2000). Given the numerous issues that surround edible weight calculations (Usher 2000), estimates have since been expanded on the basis of Ashley (2002), Larter and Allaire (2009), and Veitch (2010 pers. comm.), and a low estimate and high estimate are shown in Figure 6-1, below.

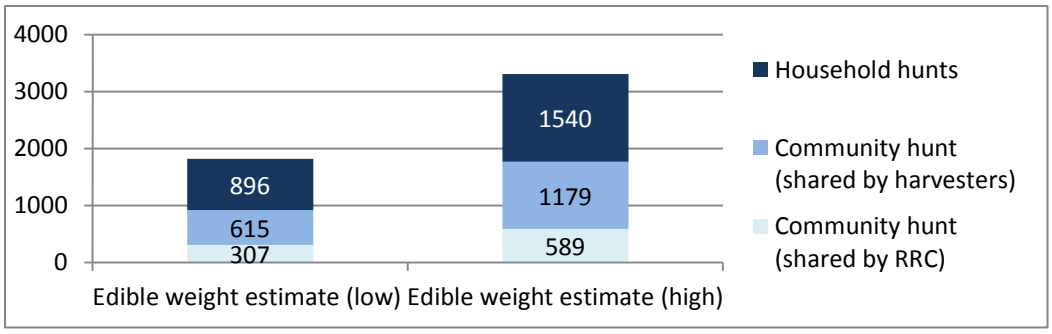


Figure 6-1: Summary of Estimates of Harvest Edible Weight (kg)

Note: community hunt estimates are not adjusted for meat consumed during the hunt.

A ‘request’ was identified by participants’ description of a recipient ‘calling’, ‘phoning’, ‘asking’, or that they ‘wanted’ meat. Interactions that were not characterised by such descriptions have been assumed to be ‘gifts’, although it is recognized that substantial complexity surrounds the term (Winterhalder 1997). In many cases, participants would indicate that people had requested meat but were unwilling to discuss the details of whom, or how the interactions had occurred. Their descriptions were also varyingly applicable to the actual hunting cases, with many mentioning that they ‘would have shared’, ‘will share’, or that they ‘do share’. With some assumptions about the significance of grammar, it is possible to construct a data set of requested food-sharing interactions, but given that we cannot know what was not reported, it is admittedly more tenuous to assert that they represent any specific proportion to the total incidents of sharing. In the first set of results we thus present the numbers of requesters reported in each case, and the requesters who were reported by name (as a proportion of the total recipients mentioned by name) in each case. That a total of 57 recipient households are mentioned by name in each second-order distribution is by chance; accounting for recipients who are mentioned by multiple harvesters will be addressed below through a network comparison.

In the second set of results we have also included whether or not a recipient might belong to the demographic emphasized by hunt organizers as being in particular need for meat. This includes people such as elders, single mothers, and those less able to hunt for themselves. Elders were identified either by the interviewee, a local research assistant, or were known by the researcher to be aged sixty years or older. Others in need were identified based on interviewees’ comments that ‘they don’t go out for themself’, ‘they’ve got no one to hunt for them’, or mentioning sickness, pregnancy, or widowing. In a small number of cases, two givers would sometimes report sharing with the same household, but only one giver would describe the household in terms of needful circumstances. Given the exigencies of network analysis, in these instances both of the interactions would be considered as with a recipient in particular need.

In the third set of results we have indicated the available details on portion-sizes of meat shared and the amount of time the remaining meat was expected to last harvesters’ households. As with descriptions of requested sharing interactions, details

regarding portions were not given for every interaction. For interactions where details are available, we created two possible categories: the 'smaller portion' category includes quantities of one or two pieces (i.e. 'moose ribs, and meat'); the 'larger portion' category includes descriptions of three or more pieces, portions relating to an entire animal (i.e. 'half a caribou') or descriptions accompanied by an exclamation of 'lots', 'whole bunch', or 'everything'. We were unable to gather consistent information about the relative quality of portions, however, and also recognize difficulties comparing processed to non-processed meat. Community hunt meat had been dried and processed for several days, while meat from household hunts arrived in larger, raw chunks. In addition, the interactions for which portion-sizes were explained were not consistently the same interactions for which requests were noted, and as such it is not possible to comment on any interrelationships between these characteristics.

In the fourth set of results we present a comparative network analysis. Methods of collecting network data on food-sharing dynamics have typically used a series of short-term recall surveys (Collings 2011), or a single long-term recall survey (Magdanz et al. 2002, 2004). Here, network diagrams were constructed from the interviews with hunters regarding the households to whom they shared out meat from the specific hunts. There are three common measures of centrality that assess the extent to which nodes (households) are nested in the overall network: degree, closeness, and betweenness (Hanneman and Riddle 2005). For directed networks (where connections are based on a flow from one node to another) these are assessed both inwards and outwards from nodes (Hanneman and Riddle 2005). Betweenness and closeness (also called 'reach') may be useful measures in dense networks where most nodes have non-zero in-degrees and out-degrees, however, for the relatively sparse networks considered here (which do not include subsequent re-distributions of meat), we focus on the degree centrality of the recipients (in-degree centrality, or the number of different harvesters from whom a recipient receives meat). The size of a node is thus dependent on its in-degree. On the basis of work by Costenbader and Valente (2003), in-degree centrality would seem a prudent measure for such incomplete data sets; in their study it correlated well between sampled and complete data sets. And while those authors found 'simple eigenvector' (which finds the most central nodes in terms of the 'smallest farness from others' within the overall structure) to correlate somewhat better, the

NetDraw software used here (Borgatti et al. 2002) does not capture directional (or asymmetric) characteristics of connections (Hanneman and Riddle 2005), and so this measure was not used. Network connections (edges) in the diagrams below do indicate which sharing interactions were based on requests, however, and the RRC interactions (excluded in the other analyses) are also included.

Summary of Two Forms of Hunting Organization:

The 2009 Autumn Community Hunt:

Recent autumn community hunts in Fort Good Hope usually involve the subsidization of harvesters' travel costs, whether this is fuel provided for household riverboats or charters on the local air service provider. Hunters do not receive payment for their labour, and are also expected to provide their own personal equipment (tents, stoves, rifles, food, etc.). Typically, funding proposals for community hunts are made to the Band office, and Land Corporation, as well as the Renewable Resources Council. The RRC in fact spear-headed the hunt itself in 2009, booking air charters for the interested harvesters to fly out to Tabasco Lake in the Mackenzie Mountains. Bringing elders and youth was a priority for hunt organizers who sought to stimulate intergenerational learning and bolster traditional skills among young people in the community. Women were also an essential part of the hunt, maintaining camp, and drying and processing the harvested meat. Given the travel costs, the duration of the hunt was extended from that of the previous year to 9 days, and daily hunting forays would comb the surrounding steep mountains and valleys for moose, caribou, and sheep. The extended time spent in the bush also necessitated a sturdy bush-camp that took a day or two to construct, and dismantle at the end. As mentioned above, on the last day the harvested meat was divided into allocations for harvesters as well as the RRC, and packed into sacks or coolers. Air charters then brought the hunt participants back to Good Hope over the course of a day, landing on the river at 'The Point' which bustled with vehicles, equipment, people and meat.

Household-financed Caribou Hunts:

Household hunts in the early winter of 2009 were altogether different. As the first snows settled on frozen muskeg and reports were heard of barren-ground caribou

beginning to cross Colville Lake, hunters in Fort Good Hope with working skidoos would make the trip to Colville (176km) in about five hours. Hunters normally went on weekends, some going alone, some in pairs, and in some cases 'teaming up' with others along the way. Most would stay with friends or relatives in Colville Lake and make daily skidoo trips up to the north shore looking for caribou emerging onto the lake. Harvesters took an average of 4 caribou each, and would load the meat into tub-sleighs and make their return trip back to Fort Good Hope, often arriving late in the evening. The usual duration of such hunts was 2-3 days, and the costs borne primarily by the harvesters and their own households. In comparison with the community hunt then, they were relatively short, required no bush-camp, and less labour by harvesters. The main goals of the hunters seemed to be to provide their households and families with meat, and to visit friends and family in Colville Lake.

Table 6-1: Summary of Hunting Cases

	Community Hunt (September 2009)	**Caribou Hunts (November 2009)**
Number of trips	1	5-6
Means of travel	Twin-Otter	Skidoos
Number of hunters	7	8
Number of participants	15*	9-10
Time on the land (per trip)	9 days	1-5 days
Funding source	RRC/donations/researchers	Harvesters
Harvest	4 moose, 3 mountain caribou, 1 Dall's sheep	28 barren-ground caribou (total)
Total edible weight	922kg-1768kg	896kg-1540kg

*Excluding 3 researchers

Results:

In both hunting cases described here, if portions were distributed equally to every person in the community (approx. 600) they each would have (roughly) amounted to somewhere between 1 and 2 kilograms of meat. We estimate, however, that the monetary travel-cost per kilogram of meat was 10 times lower for meat harvested on household hunts (adapted from Chiu 2011 Pers. comm.).

The following results are presented in four sections: the first describes sharing norms generally in Fort Good Hope as observed by the lead author (accounts are based on his field notes); the second compares the incidence of requests between the two hunting

cases; the third compares the portion-sizes reported, while the fourth compares their network characteristics.

Norms of Sharing in Fort Good Hope:

Very quickly in the field-work, it became evident that the sharing of traditional foods is a critical part of the social fabric of Fort Good Hope. Introductions made about the project focus would often meet with confirmatory replies that 'we all share', sometimes followed by examples of personal generosity. Many would emphasize that selling traditional foods is against local custom, although the high financial costs of harvesting were also communicated as challenging this norm. The prevalence of local sharing was often contrasted to the more-impersonal Southern lifestyle, and several people also remarked on differences with other northern communities, such as Aklavik, Tulita, and Hay River. While these comments seemed to insinuate that sharing is relatively more pervasive in Good Hope, others would also refer to Colville Lake as a place where appropriate norms of sharing were strongest.

Privilege, Recognition, or 'Just to be out there'?

One younger interviewee emphasized that it was a privilege to provide for other people. After a successful harvest, *"Family will be happy, and plus, some... people that don't have the... I don't know, the privilege I guess... don't have skidoos and that… they're going to want meat too… as soon as they hear somebody got some meat, they're happy- then they know who to ask for meat" (30)*. In this way, it seems apparent that harvesters enjoy an esteemed position in the community, and appreciate recognition for their exploits. A lack of recognition was problematic in one instance where the participant complained, *"I wasn't... I dunno, too happy about it… he's my uncle too... he didn't even thank me... He didn't even say thank-you for the meat. Didn't tell me stuff like that…" (15).* Another harvester balked, however, at the lead author's question concerning the appropriate ways of appreciating a harvester's skills and efforts. He jokingly changed the subject, explaining "*Ya, well we enjoy [hunting], you know. And… sometimes we… we go in the wintertime, ya, and we just give [meat] out. We enjoy like, you know, just to be out there and… making some tea, and eating the good parts before we come home! Haha!*" (41).

'A little piece for myself'

It is clearly socially desirable to be known as someone who shares, and certainly the ideal that nothing is expected in return. It also seems to be relatively common to refer to someone as 'stingy' with their meat, in a general expression of disapproval. Thus, sharing and perceptions of sharing may be seen as symbolic, which further complicates inquiry into 'what happened' in particular cases. One interviewee seemed to offer an explanation closest to what the researcher interpreted as the norm for sharing most generally. After giving pieces out to those who contributed equipment to his hunting effort, the harvester reported that he "*kept the rest. Then I handed them out to elders... people that… can't go hunting… have no kids to go hunting... So I gave out some meat to ya, some elders, [my wife's] grandparents, and that. Handed… most of those out. Kept a little piece for myself*" (36).

Giving to those who cannot provide for themselves

In descriptions of specific sharing interactions, too, the circumstances of recipients were often mentioned by harvesters, particularly conditions of ill-health, being a widower, single mother, resident in another community, a full-time wage worker, student, 'being stuck', and especially old age. In antithesis to this, some participants asserted that they had not shared meat with family members (in other communities, for instance), who had closer sources of meat and therefore 'didn't need it'. Expectations of peoples' roles in the sharing interaction itself also seemed to be linked with their abilities. One participant summarized, *"most likely I'll tell them to come pick it up, if they have a vehicle, or skidoo... and they do- they do come around… come pick it up. But if it's somebody like an elder or something like that, I'll drop... drop them off for them…" (38)*. Harvesters would also remark on the prudence of providing elders with softer meat, as many had lost their teeth.

Claiming and Requesting

Anyone who lends fuel or equipment to a harvester is virtually assured a portion of meat in return. Intermediaries in the process of distribution, or helpers who might assist with cutting up meat, drying it, or giving hunters a ride in from 'The Point' also earn the option of claiming some as well. But importantly, the process of claiming is an active

one. As an outsider, it took the lead author some time to become comfortable with this. While I would help out on hunting trips I would typically not receive meat for my labour. Eventually, however, I learned that I did have the right to claim some, and gained approval from the group when I exercised it. Requesting meat would seem to have similar characteristics to claiming meat in terms of being an active process, although it operates in contexts where portions of meat have already undergone some initial allocation. During my interviews and conversations with people in Fort Good Hope, just about everyone would note that they would oblige any request for meat; these in fact were some of the most consistent features of conversations about sharing. But they were contingent upon requests, as opposed to 'demands', and I therefore deviate somewhat from the literature in referring to the practice as 'request sharing', and not 'demand sharing'. Contrary to some of the ethnographic literature reviewed above, I never perceived any hesitation or taboo against directly requesting meat; instead they seemed to be relatively straightforward, usually made with a phone call. One elder remarked in a community workshop that sharing with 'whoever wants meat' has become commonplace, replacing former norms of redistributing harvests through an intermediary (see Osgood 1970 [1936] and Savishinsky 1974 for descriptions of such redistribution).

When we returned to Good Hope after the community hunt in September 2009, the lead author began to perceive a strong prevalence of harvester sharing being initiated by requests, evidenced by reports from interviewees such as "*as soon as I got in, people were calling me for meat, so... they just came over and dug in the fridge, and starting grabbing everything, and within 4 hours all the meat was gone…"* (07). In subsequent comparative interviews with harvesters who had arranged their own hunting trips for barren-ground caribou in November 2009, a similar urgency was rarely present.

Request-Sharing Comparison:

Table 6-2 expresses the number of sharing interactions initiated by a request from a potential recipient, at different specificities of analysis. After excluding sharing interactions by the Renewable Resources Council and vague responses, fifty-seven interactions with specifically-identified recipients are considered for each hunt. Of the seventeen harvesters' households interviewed, only fourteen reported receiving

requests for meat. Of these, two were vague as to how many requesters there might have been, leaving twelve that indicated a particular number. Finally, of the number of requesters reported, it was a slightly smaller group that were identified by name.

Table 6-2: Sharing Interactions Reported as Initiated by a Request from a Recipient

	Community Hunt	Household Hunts
Harvester households interviewed	10	7
Harvester households reporting specific recipients of meat	9	7
Total number of specified recipient households	57	57
Harvester households reporting requests for meat	8	6
Harvester households reporting number of requests for meat	7	5
Total number of requesters noted by harvester households	**26**	**5**
Total number of requesters specified (named) by harvester households	**19**	**5**

In Table 6-2, more requests for meat are indeed evident in the community hunt case (19/57 versus 5/57). Figure 6-2, below, expands on this result, showing the number of identified requesters for meat in relation to total sharing with identified recipients, and includes whether or not recipients belonged to categories emphasized in the community as the most in need of meat.

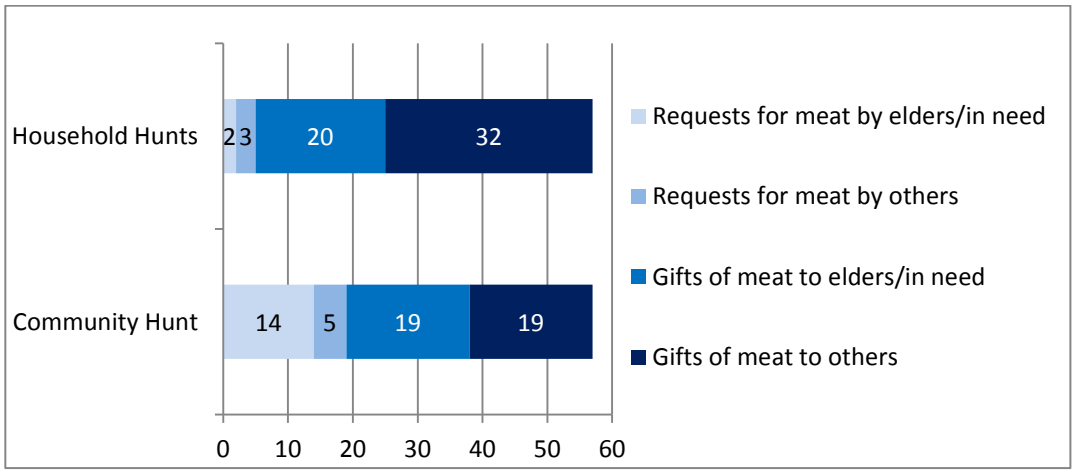


Figure 6-2: Food Sharing Reports by Hunt Type, Request, and Receiver Characteristics

Requests for meat are especially prevalent from those in circumstances of increased need after the community hunt (14/57 versus 2/57). Conversely, more 'giving' interactions are evident in the caribou hunting cases, especially to those who are not

noted as in special circumstances of need (32/57, versus 19/57). Importantly, in both cases a high proportion of sharing interactions (about 35%) were with elders/those in need without any request being reported.

Portion Size Comparison:

Portion sizes were indicated for 27 of 57 interactions after the community hunt, and 21 of 57 after household hunts. In this sub-set of interactions, community hunt participants typically shared smaller portions of meat than household hunters (Figure 6-3). For the latter group, descriptions of the raw pieces (i.e. 'hindquarter', 'leg', or 'backstrap') seemed to accumulate to approximately 9 whole caribou, or close to one-third of the total harvest. For the community hunt, as we have no standard edible weight information for processed portions (i.e. 'a bag of drymeat', or 'some bones') we cannot infer that they represented any particular ratio to the total. Notably, however, there was little difference between the two hunts in harvester reports of the lengths of time their supplies of meat would last their households (see Table 6-3). Thus, it is reasonable to conclude that similarly substantial proportions of each harvest were shared out by harvesters' households.

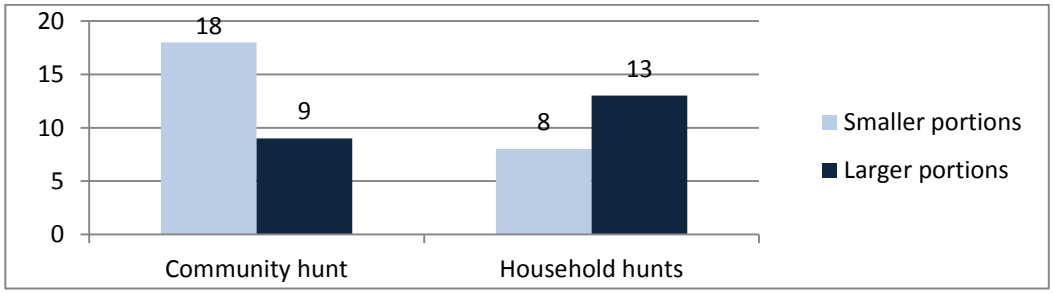


Figure 6-3: Portion Sizes Shared by Hunt Type

Table 6-3: How long harvested meat is expected to last harvesters' households

	Meat will last:	
	Less than 1 month	1 month or more
Community harvesters	6	4
Household harvesters	4	3

Network Comparison:

Network characteristics of the sharing interactions help to clarify the degree to which they involved the same households repeatedly. The community hunt network is fragmented in two parts and is composed of 63 nodes and 67 edges (aggregating RRC and harvesters' sharing), while the household hunt network is integrated, and composed of 55 nodes and 57 edges. Comparing in-degrees of elder/in-need households with in-degrees of other households reveals opposite trends between the two hunting cases (Table 6-4). After the community hunt, elder/in-need households received meat from 2 or more sharers more often than did other households, while the reverse trend occurred after household hunts. Within the elder/in-need groups also, the community hunt group features a larger percentage with in-degrees of 2 or more (24%, versus 12%). These results demonstrate that elder/in need households were more 'central' within both networks compared to other households, and that the group was especially central after the community hunt.

Table 6-4: In-degrees of Recipient Households

	Community Hunt		
	Households with elders/in need	Other households	Total
In-degrees of 1	25	18	43
In-degrees 2 or more	6	4	10
	Household Hunts		
	Households with elders/in need	Other households	Total
In-degrees of 1	17	27	44
In-degrees 2 or more	2	4	6

In terms of the network structures (Figures 6-4 and 6-5), these results are clearly reflected in the extent to which sharing interactions occurred with the same cluster of recipients in the community hunt diagram; elder/in-need households appear far more central in this regard than they are in the household hunts diagram, implying they are more resilient in that case to disruptions in food-sharing. The role of requests in the community hunt diagram is also evident. Interactions prompted by a request tend to be clustered in the centre of the diagram, particularly around one harvesting household (of an elder who claimed a relatively large amount of meat). If we assume that without a request for meat, such transactions would not have occurred, it is clear that their contribution to the characteristics of the network as a whole is significant.

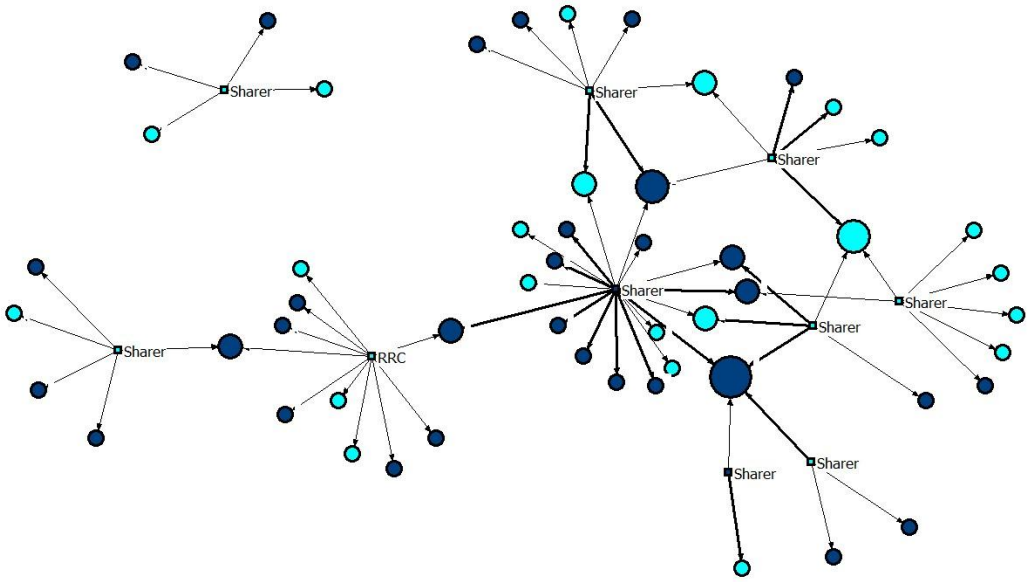


Figure 6-4: Community Hunt Sharing Network

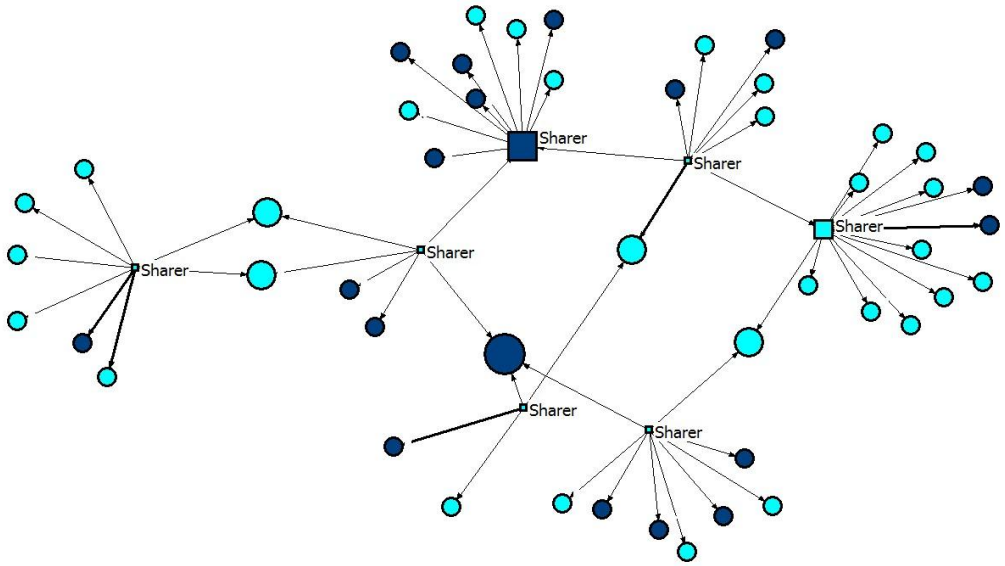
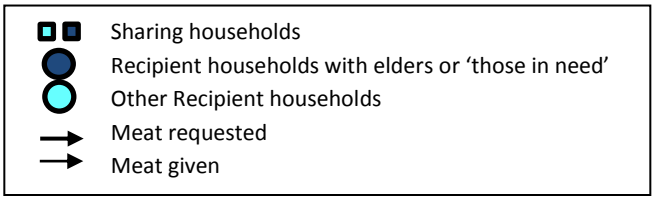


Figure 6-5: Household Hunt Sharing Network



Discussion:

High Prevalence of Sharing in both forms of Hunting Organization:

This paper considers whether there are differences in sharing patterns between two forms of hunting organization: a community hunt, and household hunts. We find several differences in meat-sharing patterns, but importantly, there was also an overarching similarity: that both cases involve a high incidence of sharing interactions that represent significant proportions of the total harvests. These results evidence the strength of social institutions of sharing that operate in multiple hunting contexts, whether hunts were publically financed, or paid for by harvesters' households.

More Sharing as Gifts to Elders and Those in Need:

The results above also display much consistency between the cases in terms of the number of reported interactions where meat was given (i.e. there was no request) to elders and those in need; these interactions were in fact more numerous in each case than those initiated by a request. That more sharing interactions with those in need occurred as gifts is consistent with the local norms of sharing that emphasize the generosity of harvesters and the correctness of giving to those in need.

More Requests after the Community Hunt:

More requests for meat are evident after the community hunt, indicating that there was a relatively greater pressure on harvesters' allocations of meat. If this is considered analogous to an economic case where a demand curve shifts outwards while supply remains constant, we might argue that meat provided by the community hunt was therefore scarcer than meat provided by household harvesters (although whether or not this was exacerbated by the high financial cost of the hunt is unclear).

More Requests from Elders and Those in Need after the Community Hunt:

Although meat brought back from the community hunt may be considered relatively scarce compared to meat brought back from household hunts, most of the pressure of scarcity was generated by the demographics already-identified as priority groups to receive meat. Altogether this seems to represent significant consistency between the hunt organizers, community, and harvesters as to whom the meat should best be shared

out. Clearly, there is a widespread understanding that elders and vulnerable demographics are the most 'eligible recipients' for meat in this case, and as there are no accounts of harvesters denying any requesters after the community hunt, those who did not belong to widely-recognized categories of priority may have actually excluded themselves. It is important to note, too, that the sharing conducted by community hunt participants occurred in addition to the Renewable Resource Council distribution, which also focussed on those priority groups- especially elders.

Smaller Portions Shared after the Community Hunt:

There are indications that the portions of meat shared out by community harvesters tended to be smaller than those shared by household harvesters, although it seems that the amounts reserved by harvesters for their households were similar in each case. So while one respondent above describes a relatively un-moderated sharing process, it would seem that on the whole, moderation of portions did occur in many instances. There are several possible explanations for this, but the clearest indication we have is that community harvesters had less total meat with which to make a similar number of sharing interactions (recall Figure 6-1, above). Given the apparent scarcity of meat, as indicated by more requests, conserving portions may have been an entirely prudent response in order to insure longer term distributional equity.

Clustering Evident in Community Hunt Sharing Network:

The priority for elders and 'those in need' to receive meat is evident in the characteristics of the community hunt sharing network diagram. The diagram exhibits a cluster of 'needy' recipients to a greater extent than the household hunt sharing diagram. Moreover, requests for meat are also clustered in the centre, and if we consider that such interactions would not have occurred without a request it is evident that they are integral to the network itself. This demonstrates that recipients of meat are not simply passive, but can alter their position within sharing networks, in this case through making requests. As noted by Wellman and Frank (2001: 18), "People maneuver to form relationships and find support from them."

Implications in terms of Community-based Resource Management:

The combination of more requests for meat after the community hunt, combined with smaller portion sizes shared and similar quantities reserved for household consumption point to complex processes of community resource management operating in the 'second order of distribution'. Evidently, meat held in harvesters' households after the community hunt was to some degree considered to be 'theirs' to a slightly lesser extent than meat harvested by household harvesters, but at the same time 'requests' appear to have allowed many harvesters to maintain some control of the portions shared. This, and the high incidence of sharing after both publically-financed and household-financed hunts exemplify harvested meats 'belonging' (to a variable extent) to both the harvesters and community at the same time.

Recalling the findings of Parlee et al. (2006), managing scarce resources among a group necessitates restrictions of one form or another. The community hunt meat-sharing case explored here demonstrates both limitations on beneficiaries, and also restrictions on portion sizes. Community-based resource management practices are gaining increased recognition in the Canadian north, which should raise awareness of the importance of secondary levels of resource distribution that operate in conjunction with their primary allocations. Local institutions and social norms that address the needs of vulnerable populations through these secondary processes are clearly influential in Fort Good Hope, particularly in the example of the community hunt illustrated here. These results actually challenge to some extent the 'tolerated theft' characterisation of sharing prompted by requests, as the very people against whom harvesters would most easily be able to 'defend' their meat (and also those less likely to reciprocate), are the ones who seem to have the greatest claim to it.

Limitations:

Firstly, as this study does not account for meals eaten within households, a significant factor in the dynamics of sharing has been excluded; certainly many households hosted guests for meals. Secondly, as we cannot know what was not reported, we do not claim that the number of sharing interactions was the same between the hunts, only that they are likely similar. Thirdly, there are no clear interrelationships available from the data

on harvesters' and recipients' relative control over the moderation of shared portions. One harvester recounts that

> *[Colville Lake elders] most of them got their own... share of caribou, before we came in... but still, they were asking for meat, the elders.... so... I was hunting for them... that kind of surprised me... they just wanted some frymeat, so I just... cut a piece of... cut-up arm inside the fridge; it was already cut up and stuff… and the meat was frozen. They wanted meat right away, I guess, I just gave them that meat… plus I had... cooked some caribou head before that, and they took all that too, haha* (39).

Harvesters may thus choose particular pieces of meat to give to requesters, recipients might simply help themselves, or combinations of these can apparently occur at once. This is further complicated when harvesters store meat with relatives who have more freezer-space, and who are then likely to have more-or-less open access to it. Fourthly, increased requests for meat made to community harvesters by elders and those in need in 2009 may also be due to members of those demographics simply being omitted from the distribution managed by the Renewable Resource Council. Whether or not this is a result of the limited amount of meat allocated to the RRC after the hunt, and/or the distributional decisions made by the RRC regarding its allocation of meat, and/or the high financial cost to procure it, is beyond the scope of this paper. Fifthly, it was not possible to fully explore the many variations of 'request-sharing' in this study. Requests for meat can be implicit in pre-emptive reciprocal contributions towards a hunting effort, for example. The lead author on two occasions prior to the community hunt was given items to use in the hunt with the explicit corollary that he could then bring the donors back some meat. It was difficult to assess the degree to which this form of request was prevalent for local harvesters in either case.

Considering the subtleties of what constitutes a 'request', as well as their variable connection to actual control or moderation over the sharing interaction itself, the continuum of sharing from items requested to given is certainly not straightforward, although we have divided interactions into these two categories for the purposes of analysis. Local harvesters themselves would rarely communicate that there was any difference in social significance for them between giving meat and acquiescing to a request. In either case, their generosity would be affirmed, and thus this paper's

parsing out of such forms of sharing is likely less coherent from a local perspective. Kishigami (2004) also includes the possibility that non-requested sharing interactions are not necessarily gifts given, but could be based on strict mutually-understood social rules, and we certainly cannot rule this out as a potential factor. Thus, even the most apparent examples of giving are left somewhat ambiguous to the outside researcher. In the disciplinary field of 'sharing' characterised by social pressures, social histories, pride, power, and evolutionary advantage (Winterhalder 1997), much will always remain unclear.

Conclusions:

This paper has demonstrated request-sharing as a mechanism connecting hunting contexts with sharing dynamics within a northern Dene community. Findings suggest that meat harvested on a community hunt was scarcer than meat harvested on household hunts, as although the amount available was similar between cases, there were increased requests for meat after the community hunt. Requests were made primarily by those belonging to a widely-recognized as a priority-group: elders and those in need. This finding is somewhat different than what would be expected according to one evolutionary formulation (the 'tolerated theft/scrounging' model). Social norms thus appear to have influenced who is eligible to request meat from the harvesters. We have suggested that this may be part of a social mechanism of exclusion necessary to manage scarce or costly common-resources, in addition to norms that permit harvesters to moderate the portions they share.

In literature on community methods of coping and/or responding to ecological change, hunting and sharing practices are often described as flexible. Little work, however, evidences the actual mechanisms that underpin such flexibility. Although problems of scarcity cannot be resolved completely through sharing processes, they can be temporarily mitigated and in a modern context that includes food-alternatives within communities, the relative role of sharing networks in addressing shortfalls in country food may actually be augmented. Clearly, for such networks to continue to operate, they must be premised in widely-understood social norms of equity, but this research shows how such norms can lead to different patterns of distribution in different

circumstances, patterns which reveal mutual responsibilities for both harvesters and potential-recipients of meat.

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Chapter 7: Conclusions

This thesis has considered how people in the *K'asho Got'ine* Dene community of Fort Good Hope may be responding to ecological changes such as declining availability of barren-ground caribou in terms of their hunting and food-sharing practices. Nuttall et al. (2005: 650) emphasize the importance of such social research into the effects of ecological variability on northern peoples, particularly in the context of climate change. Their chapter in the Arctic Climate Impact Assessment calls urgently for "extensive, regionally-focused research on the impacts of climate change on hunting, herding, fishing, and gathering activities, research that will contribute to a much greater understanding of climate change impacts, as well as to place these impacts within the much broader context of rapid social, economic, and environmental change." The research presented here has attempted to address some of these factors. It has done so through looking at 1) how community hunt organizers respond to ecological circumstances and socio-economic conditions in Fort Good Hope, and 2) how harvested meats are shared out from one such community hunt, as opposed to household-scale hunting activities.

Considering ethnographic literature from northern Dene contexts that highlights the complexities of hunting and sharing practices and debates aspects of continuity and change over time, a framework of social-ecological resilience was used to account for the wide range of factors that come into play in the dynamics of household access to country meats such as caribou. The framework characterises interrelated social and ecological systems in terms of a panarchy model. This facilitates an acknowledgement that the broad system of interest here (a livelihood of hunting) operates as an adaptive cycle interlinked with systems of barren-ground caribou populations and movements, as well as and socio-economic factors in the community, including norms of food-sharing. Research was carried out in collaboration with the Fort Good Hope Renewable Resources Council in 2009 and 2010, primarily using methods of participant observation and interviews with hunters/those involved in food-sharing in the community.

Chapter 5 concluded that contemporary community hunts seem to serve the same purposes as those described in early ethnographies of collective hunting in that they

increase certainty of harvest while reducing individual effort. But they are also adaptive through the deliberate efforts of hunt organizers. Longer-term adaptations include an increasing focus on community hunts as opportunities to facilitate the intergenerational transmission of cultural knowledge and skills, and as ways to assert Aboriginal rights over traditional lands and resources. Such objectives thereby contribute to the social-ecological resilience of hunting livelihoods in Fort Good Hope. At shorter time-scales, the cases reviewed evidence organizers' experimentation and learning through iterations of hunt planning in situations characterised by many challenges, both socio-economic and ecological. These experiments were demonstrated in the flexible dynamics of the community hunt in terms of its organizing body, location, duration, participation, harvest, and meat-distribution strategy.

Chapter 6 then showed that food-sharing processes are widespread in the community, whether or not harvests are taken individually, in small groups, or in larger scale community hunts. Sharing norms observed in this research were extremely complex, but it was evident in all cases that elders and those in need (who are more likely to be food-insecure) are normally prioritized as recipients; this was particularly evident after the community hunt when this group made more requests for meat than those whose circumstances were not remarkable. In terms of property rights, this indicates that harvested meat was considered 'common property' to a greater extent after the community hunt, although most harvesters still maintained responsibility for moderating the portion-sizes of shared meat. In terms of the role of sharing in community responses to resource variability, a network analysis shows that requests for meat significantly shaped characteristics of the community hunt sharing network, reflecting that people are not static receivers of resources, but can sometimes position themselves deliberately through a simple request.

Altogether, this thesis demonstrates the complexities involved in collective responses to changing ecological conditions such as the availability of caribou. While response goals include the short-term continuation of hunting, and provision of food into sharing networks, they are interlinked with many other socio-economic factors including variable perspectives on community and harvester benefits, limited budgets, and public pressures that inevitably concern the realms of both production and distribution. The

decisions that result are also made the context of longer-term social goals, such as bolstering traditional livelihoods among local youth and renewing ties to important areas of the landscape which are themselves adaptive responses to the extensive social changes that have occurred in recent decades across the Canadian North.

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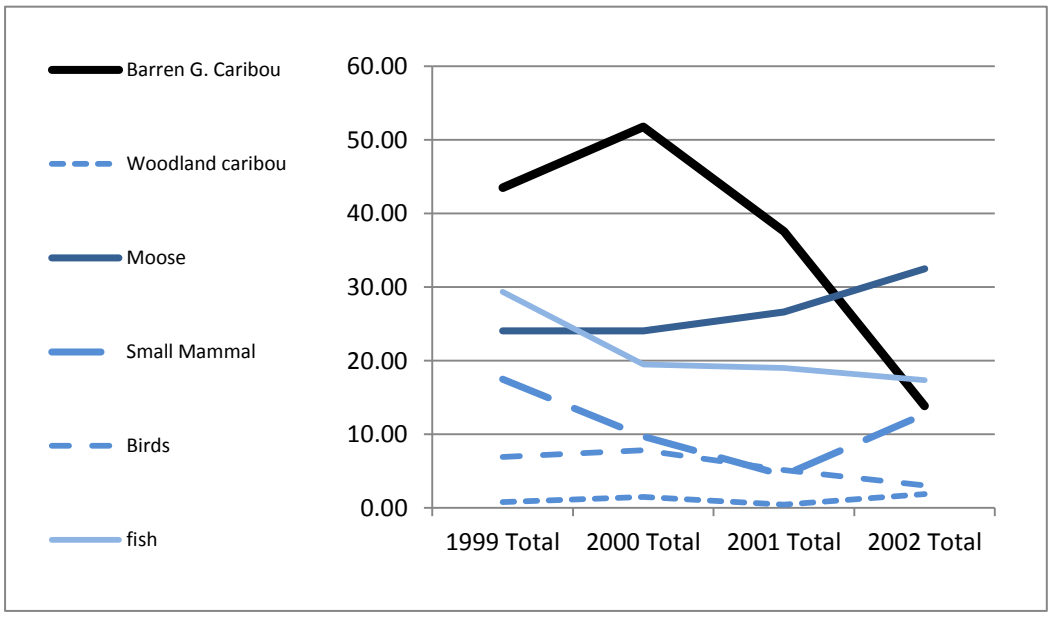
Appendix 1: Overview of Data Sources

	2007	2008	2009	2010
Autumn community hunts:	Semi-structured interviews with organizers (n=3)	Semi-structured interviews with organizers (n=2)	Semi-structured interviews with organizers (n=4)	Semi-structured interviews with organizers (n=4)
			Semi-structured interviews with participants and non-participants (n=29)	
			Participant observation	Participant observation
			Surveys tracked meat-sharing (n=22)	
Household caribou hunts			Semi-structured interviews with participants (n=7)	
			Participant observation	
			Surveys tracked meat-sharing (n=11)	

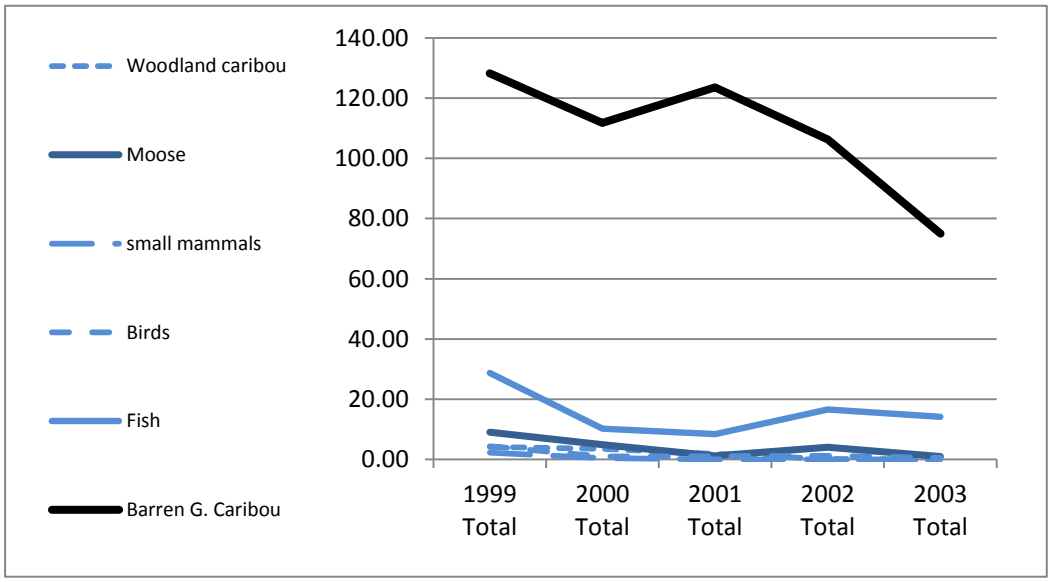
Appendix 2: Sahtú Harvest Study Trends 1999-2002

Per capita country meat (kg) harvested

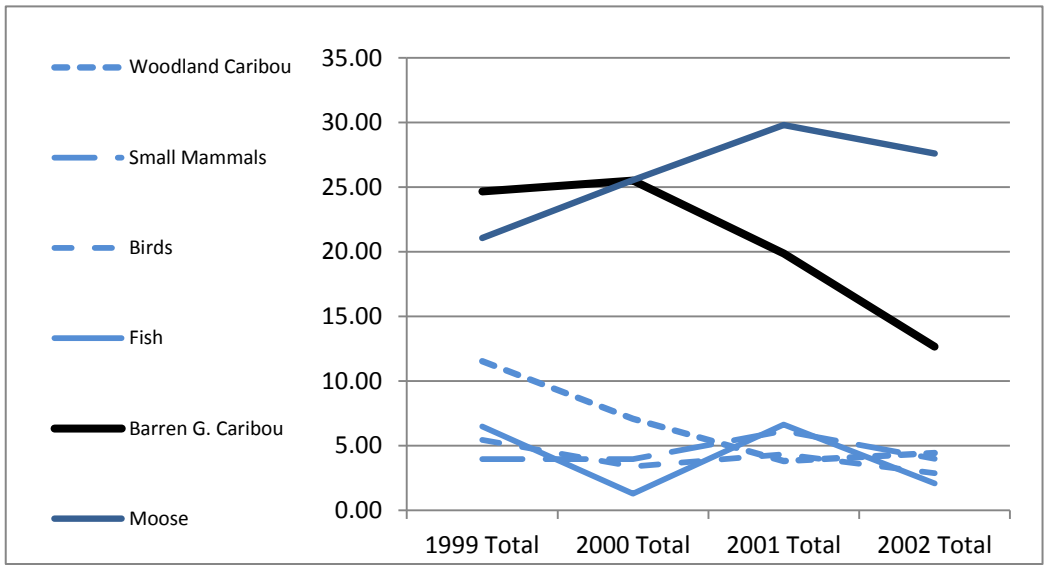
Fort Good Hope:



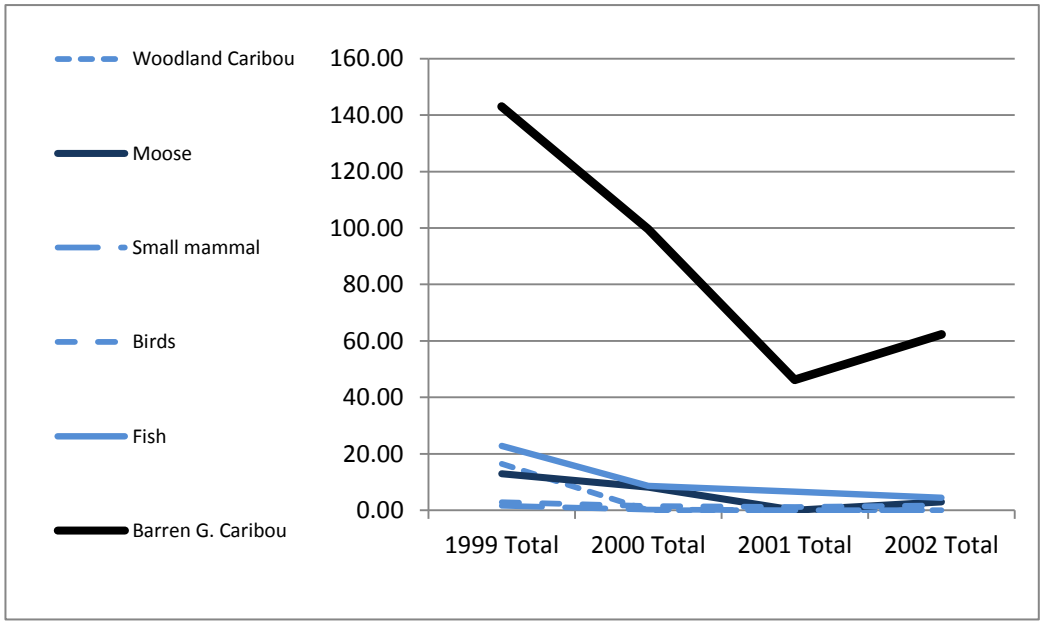
Déljne:



Tulita:



Colville Lake:



Edible weight calculations are given in Appendix 3 for moose and barren-ground caribou. Woodland caribou weights were estimated based on the range provided by Ashley (2002). Other species estimates are based on the GNWT wildlife website, and Usher (2000).

Appendix 3: Edible Weight Calculations:

			River Hunt 2007		Tabasco Hunt 2008		Tabasco Hunt 2009		Household hunts 2009	
	Edible Weight (low)	Edible Weight (high)	Harvest:	Weight est.	Harvest:	Weight est.	Harvest:	Weight est.	Harvest:	Weight est.
Bull Moose (Mountains)	200kg (Larter and Allaire 2009:18)	400kg (Veitch pers com)					2 large	700kg		
Cow Moose (Mountains	150kg (adapted from Larter and Allaire 2009:18)	300kg (adapted from Veitch pers com)					1 med	225kg		
Calf Moose (Mountains)	100kg (adapted from Larter and Allaire 2009:18)	150kg (adapted from Veitch pers com)					1 med	125kg		
Generic Moose (Mountains)	175kg (adapted from Larter and Allaire 2009:18)	350kg (adapted from Veitch pers com)			2	525kg				
Generic Moose (Valley)	150kg (Ashley 2002)	200kg (Ashley 2002)	8	1400kg						
Mountain Caribou	80kg (Ashley 2002)	150kg (Veitch pers com)			10	1150kg	2 large, 1 med	380kg		
Generic Bluenose Caribou	32kg (Usher 2000)	55kg (Ashley 2002)							28 med	1218kg
Male Dall's Sheep	32kg (Ashley 2002)	68kg (Ashley 2002)			3	150kg	1 large	60kg		
Total:				1400kg		1825kg		1470kg		1218kg

Moose and caribou in the Mackenzie Mountains are some of the largest in the world. Assigning edible-weight values to harvests of moose and caribou based on reports generated from other ecological contexts is therefore problematic. Usher (2000), and Ashley (2002) outline many of the problems that abound in the standardization of edible weights, including variations by age, gender, ecological region, season, butchering technique, and cultural norms of edibility. As such, this thesis has extrapolated from various sources. From the researcher's observations in the mountains, much effort was made to recover as much from each animal as possible, including meat from the head and lower legs which are not typically included in edible weight calculations (Usher 2000). Extrapolations from Larter and Allaire (2009: 18) are made on this basis, and considering that their estimates are deliberately conservative and do not account for meat claimed/consumed by game hunters.

Where final edible weights are used, they were arrived at by averaging the low and high estimates available in the literature. Where the researcher was present and capable of roughly gauging an animal's relative size, estimates have been skewed halfway towards the low or high estimate, as appropriate.

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Appendix 4: Interview Guide/Household Surveys:

Interviewer: _____, Respondent ID code: _____

Part I) Personal information

1) Gender: M / F

2) Year of birth _____

3) How many children did your parents have? _____

3b) Right now, number of older siblings _____ Number of younger siblings _____

4) Year of your father's birth (or his age) ___. Year of your mother's birth (or her age) ___.

5) Location of your birth _____

7) Number of years you have lived in Fort Good Hope: _____

7b) Number of prolonged trips away from Fort Good Hope over your life _____

8) School grade completed _____

8b) (if applicable) Years of post-secondary/trades training: _____

9) How many children do you have? _____

9b) What are their ages? _____, _____ ,_____,
_____, _____, _____, _____,

Part II) Employment:

1) Have you been employed in the last eight weeks? Yes / no

2) (If applicable) What is your primary employment?: _____,

2b) Is this: full time / full-time shift work / part time / seasonal /occasional ?

2c) other employment _____,
_____

3) How many months of the year do you do wage-work? _____

4) How often do you go hunting? All the time / often / sometimes / seldom / never

4b) How many moose/caribou have you harvested in the last year? M_____, C_____

4) Do you do wage-work during the hunting seasons? Yes / no / sometimes

Part III) Household information:

1) Are you married, or do you have a significant partner? Yes / no

1b) Do you and your partner/spouse live in the same household? Yes / no

If so, what year were they born in? _____

Right now, how many older siblings does your partner have? _____

Right now, how many younger siblings does your partner have? _____

Where was your partner born? _____

2) If your partner is employed, what is their job? : _____

2b) Is this: full time / full time shift work / part time / seasonal / occasional

2c) How many months of the year does your partner work? _____

3) (If applicable) Work of others in household (please specify both the person, and the job. Include if they are a hunter):

_____ works as _____ Full-time / part-time / seasonal / occasional

_____ works as _____ Full-time / part-time / seasonal / occasional

_____ works as _____ Full-time / part-time / seasonal / occasional

_____ works as _____ Full-time / part-time / seasonal / occasional

_____ works as _____ Full-time / part-time / seasonal / occasional

4) How many people live in your household (ie. have stayed there most of the time over the past four weeks)? How are they related to you? What age are they?

_____, related by _____, age _____

_____, related by _____, age _____

_____, related by _____, age _____

_____, related by _____, age _____

_____, related by _____,age _____

5) Which of the following does the household have (in working or near-working condition)? Skidoo, four-wheeler, river-boat, kicker, rifle, car/truck, deep-freeze, cabin

Part IV) Reception of Raw Meat:

1) **(For Hunters)** Tell me about the caribou hunt. How many did you get?

2) **(For-non-hunters)** How did the raw meat get to you? (ie. Did you pick it up from someone? Was it dropped off? Etc.). And when?

3) How did you sort out all the meat that you received/brought home?

4) Where did you store all the meat/hides?

5) Is there any meat left, or has it all been shared/eaten?

5b) If it has not all been eaten, how much longer will it last your household?

6) Did you receive any meat from other sources around the same time?

Part V) Giving/Sharing Raw Meat:

1) Can you please indicate the people to whom you shared/given/distributed raw meat in the week after you received it? (If possible, please be specific as to the type of meat given and how it was distributed).

Name:	Meat:	Given/picked up etc.
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

2) Can you please indicate which of these people look after large families, or likely gave raw meat to others?

3) Do you expect that you will distribute more of this meat in the future? Yes/no

Part VI) Meals:

1) How many meals per day in your household include Dene foods?
Almost all meals / most meals / some meals / few meals / almost no meals

2) Which people dropped by in the week after you received/brought back the meat, and shared a meal including meat from the community hunt (including drymeat)?

_____, _____, _____,
_____, _____, _____

3) How did you prepare/cook the meat? Did you make any special meals?

_____
_____
_____
_____

Part VII) Saving Meat:

1) Can you please indicate the types and quantities of meat that you are saving for particular people or events?

_____
_____
_____

Part VIII) Non-resident connections:

1) Do you have family, who live in other communities besides Fort Good Hope? Yes/no

Person 1 _____ lives _____

Person 2 _____ lives _____

Person 3 _____ lives _____

Part IX) For Non-participants of the Community/Caribou Hunt?:

1) What is the purpose of the community hunt?

2) If you did want to go, what happened that you didn't go?

3) How often did you go to CL for caribou last year?

4) How hard is it to go for barren-ground caribou? What makes it worth it?

Part X) Caribou Harvesters:

1) How do you respect caribou on the land?

2) Do you think there has been a caribou population decline? Why/why not?

Appendix 5: Research Consent Form for Interviewees/Survey Respondents

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Provisional Project Title: Social Networks as a Livelihood Strategy among K'asho Got'ine Youth.

Researcher: Roger McMillan (Supervisor – Brenda Parlee)

Affiliations: Sahtú Renewable Resources Board, the Fort Good Hope Renewable Resource Council, the Déljne Knowledge Project, and the University of Alberta. This research project is part of Roger McMillan's requirements for an MSc in the Department of Rural Economy at the University of Alberta.

Funding: Social Sciences and Humanities Council of Canada, Northern Scientific Training Program

Purpose: The research was set up the help of the Sahtú Renewable Resources Board, and the local Renewable Resources Council and the Déljne Knowledge Project. The purpose of the research is to understand more about the how people adapt and cope with environmental changes such as caribou herd decline through food sharing and social networks.

Timeline: Each survey/interview is expected to take 1 hour to 1.5 hours.

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1. We would like to carry out an interview/survey with you for this project. Have you seen the attached project summary?

Yes ____
No ____

The interview/survey will last 1 hour-1.5 hours. Information will be recorded in hand-written notes and on audio-recording equipment. Information you share may be used in the final report. We will not use your name unless you give us permission to do so.

Roger McMillan/Brenda Parlee's research has been approved by the Aurora Research Institute, the Sahtú Renewable Resources Board, and the Fort Good Hope Renewable Resource Council, and the University of Alberta PANELESS Research Ethics Board.

2. Have all of your questions about the interview or research project been answered by the researcher?

Yes ____
No ____

3. Consent to Interview: I understand and agree to participate in this research project as outlined above. I understand that I do not have to participate in this research project. I can choose not to answer questions that are asked and can stop the interviews or quit the project at any time.

Understand and Agree _____

Disagree _____

4. Consent to Use your Name in Public Documents: We would like to use the results of this research in Roger McMillan's Master's Thesis and also in other publications, such as journal articles. These will all be public documents. A copy of the final report will be kept at the

University of Alberta. The Sahtú Renewable Resources Board, Fort Good Hope Renewable Resource Council, and Déljne Knowledge Project will also receive a copy of the final report and other papers. We will not use any of your information or answers in public (including in documents) without your permission.

We would like to acknowledge you by name in all research documents and materials, or if you prefer, the results of your interview can be coded to Person A or 001 etc. so that the public does not know who shared the information. If there is any information that you would not like to share publicly, please let me know.

I DO □ want my name to be shared in public documents/ presentations.
I DO NOT □ want my name to be shared in public documents/ presentations.
I would like to be identified by the name:_____ in public documents/presentations.

I DO □ want my photo to be shared in public documents/ presentations.
I DO NOT □ want my photo to be shared in public documents/ presentations.

5. Consent for Storage of your Interview Transcripts: I will share a copy of your interview transcript with you. Brenda Parlee and I will also keep a copy of any audio recordings and/or transcriptions in order to write reports and publications; these will be stored in the office of Brenda Parlee. To ensure that your information is valued over the long term, we would also like to store a copy with the Fort Good Hope Renewable Resource Council. Only those employed by the council will have access to that information. We must stress that if you have chosen to use a code name (such as Person A), this may not guarantee your anonymity given the small size of the community.

I DO □ want my information stored with the above organization(s).
I DO NOT □ want my information stored and would prefer that it be destroyed once the research project is completed.

By signing below I am acknowledging that I have read, understand and agree to the above terms and conditions for this survey/interview.

Participant _____ Date: _____

If you require additional information or have any concerns about this project, please contact:

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If you have concerns about this study, you may contact Dr. Wendy Rodgers, Chair of the Faculty Research Ethics Board, at (780) 492-8126. Dr. Rodgers has no direct involvement with this project.