

Challenges to Sámi Indigenous Sovereignty in an
Era of Climate Change

BY

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Chapter 1. Introduction

“What we know about the Arctic is powerful on what we know about the world”
(Robert Corell, IPY 2012).

In the spring of 2011, I accompanied a Sámi family on their spring reindeer herding migration from Kautokeino to the Burfjord coast of northern Norway. My objective, as a researcher, was to gain a better understanding of the challenges and successes facing reindeer herders by participating with a reindeer herding family in their traditional practices. I observed numerous challenges facing Sámi reindeer herders and their herds, and I also witnessed how Sámi are coping with climate-driven environmental changes in the ice and snow and other aspects of their landscape, as well as the policy challenges created in the context of climate change and global climate change initiatives.

My thesis examines the Indigenous Sámi’s “right to the cold” (Leahy 2008) in northern Norway based on the developing concept of Indigenous climate sovereignties. “Indigenous climate sovereignties” lies within the broader concept of Indigenous sovereignties, as Indigenous people throughout the world seek greater control over their own affairs. It asserts a right for Indigenous peoples to have a voice in determining policies and practices that may impact climate change, particularly as climate change directly affects traditional Indigenous ways of life. The term is used in this thesis to describe the complex nature of the impacts of climate change on Indigenous peoples as they seek to build and maintain self-determination and traditional knowledge. The “right to the cold,” discussed further below, is one expression of Indigenous climate sovereignty and how it asserts a right to conditions associated with Arctic climates that permit the maintenance of reindeer herding, hunting, and other traditional practices. It favors the inclusion of the

sovereignty of Indigenous people in Arctic lands to enable them to retain self-determination and to balance necessary knowledge with cultural integrity for future generations. Therefore, the nested concepts of Indigenous climate sovereignties and a right to the cold envision the inclusion of Indigenous voices and ways of research that inform policy by means of Indigenous knowledge of changing environments from a geographic perspective.

Unlike the traditional idea of state sovereignty that is presumed to entail “full” authority over a territory, the concept of Indigenous climate sovereignties represents a sort of discourse. There are five ways we can understand Indigenous climate sovereignties with the Sámi: (1) they live across four nation-states, with each state having developed its relationship with the Sámi in different ways that recognize them as Indigenous people; (2) the Sámi are self-governing to some respect, with the Sámi Parliaments representing them in each of four nation-states (Norway, Sweden, Finland and the Kola Peninsula of Russia) and are able both to gain and share insights into matters that concern them; (3) they have the ability to draw the attention of the international community and other Indigenous people; (4) reindeer herders are coming together and using modernized tools to continue traditional practices while at the same time making political and social changes to be able to continue reindeer herding; and (5) the Sámi engage in climate change research as part of their livelihoods, including using their Indigenous knowledge to leverage the value of self-determination in climate change discourse. These five points provide a complex picture of the position and role the Sámi have in the international arena in setting a new policy and research agenda that privileges Indigenous voices and concerns. As a people seeking climate sovereignty, the Sámi are part of an international movement of Indigenous peoples to secure cultural practices and to be included in policies that affect them.

This study focuses on Indigenous people across the Arctic, and specifically the Sámi, who are experiencing changes in their political, cultural and economic livelihoods during the current period of climate change. As predicted by climate models and as documented by scientific measurements and observations by local people, the Arctic is experiencing climate change through changes in temperatures and precipitation, snow cover, sea ice, and extreme weather events (Nuttall 1998; Kolbert 2006; Symon 2005; Vuojala-Magga et al. 2011). For the Sámi reindeer herders, who depend on reindeer for cultural and socio-economic livelihood, such climate events are changing traditional patterns (Reinert 2006; Kuokkanen 2011; Vuojala-Magga et al. 2011). The ability of Sámi reindeer herders to combine organized herding strategies with their experiences during the current period of climate change makes them an important group from which to learn new ways of understanding local climate change, especially in Arctic regions. In this chapter, I first introduce the Sámi people, including the lands they occupy and their populations, and then proceed to an overview of climate change in the Arctic, a major challenge facing the Sámi and other peoples of the Polar North. From there I expand on the concept of the “right to the cold” and provide background and working definitions of Indigenous peoples, knowledge, and geography. I conclude the chapter with my research questions, an overview of the conceptual contribution made by this research, and a summary of research methods used, with a final note on the Sámi view of climate change.

The Sámi and Sápmi.

The Sámi people inhabit an area known to them as Sápmi, a cultural region that includes the northern parts of Fennoscandia and crosses the political boundaries of the northern parts of Norway, Sweden, Finland, and the Kola Peninsula in Russia, boundaries that have divided them politically at different periods of time (Figure 1). (The Sámi were previously designated as “Lapps”

and the region they inhabited as “Lapland” – however, these terms are now considered by many to have derogatory origins and are no longer used.) Despite the political fragmentation



Figure 1. Sápmi (shown in red), the territorial homeland of the Sámi people in northern Fennoscandia. Source: Wikimedia Commons.

of their territory, the Sámi demonstrate a unique perspective as “One People” with their own distinct language, culture and history, and are represented by Sámi Parliaments in each nation-state they inhabit. Sámi is recognized as an official language in nine municipalities of Norway. Since the Sámi people are not required by the countries they inhabit to register their Indigenous identity, population estimates vary, although most numbers range from 80,000 to around 100,000. The number of Sámi likewise varies from country to country, with the largest single population (perhaps 40,000 to 60,000), primarily residing in Finnmark County in far northern Norway (Figure

2), followed by Sweden, Finland, and Russia. (Minority Rights Group. 1994; Minde 2008; Minde 2003; Gaski 1997; Gaski 1993; Beach 1988). Their subsistence lifestyle that includes traditional practices of fishing, hunting, and herding is central to Sámi livelihood and identity.



Figure 2. Finnmark County, Norway (shown in red), home of Europe's largest population of Sámi. Source: Wikimedia Commons.

Most frequently, the Sámi are known through their reindeer herding practices, their ethno-political identity, and their role in Indigenous Peoples' international movements of the 1970s that gained their recognition in the international community (Minde, 1995). The Sámi ethno-political movement concentrated on establishing rights that would ensure the survival of the Sámi and the growth of their culture through reindeer herding and other cultural expressions such as language and song (Gaski 1997). In order to ensure their survival, the Sámi established Sámi Parliaments;

in doing so, the Sámi were gaining self-understanding while having a political role in the modern development of self-determination rights under international regimes. This renewed foundation and self-understanding included the establishment and assertion of power relations between minority and majority populations at the local level, while at the international level these local power relations transformed into relationships between Indigenous peoples and the state. This resulted in the Sámi dealing with the status of being an ethnic minority inside a state governed by Norway (among others) but being recognized as an Indigenous people at the international level with aspects of self-government.

Climate Change and the Arctic

It is widely agreed that the planet has been warming at least since around 1850 as the earth has rebounded from the period generally known as the Little Ice Age (LIA). Although all the major temperature reconstructions of instrumental records use slightly different processing methods and data sources, all agree on the overall temporal patterns of temperature change, including an overall warming of around 0.74 degrees Celsius for approximately the past hundred years (1906-2005) (IPCC, 2008, Synthesis Report). Although the global temperature rise has flattened in recent years (since around 1998), it is generally believed that the pause is temporary, most likely due to storage of heat in the deep oceans (Meehl et al., 2011), and that temperatures will begin rising again in the not distant future.

The lead international organization for assessing climate change is the Intergovernmental Panel on Climate Change (IPCC), which was established by the United Nations Environment Programme (UNEP) and the World Meteorological Organization (WMO) in 1988. Approximately every five to seven years the IPCC publishes an assessment report summarizing the latest state of

knowledge about the earth's climate and representing the work of thousands of international scientists. To date there have been five assessment reports, known respectively as: FAR (First Assessment Report) in 1990; SAR (Second Assessment Report) in 1995; TAR (Third Assessment Report) in 2001; AR4 (Fourth Assessment Report) in 2007; and AR5 (Fifth Assessment Report) in 2013. Research reported in AR4 and AR5 will be among the primary sources for citations on climate in this thesis. While not entirely without controversy, the IPCC reports provide a fundamental benchmark representing widespread consensus and serve as a takeoff point for policy discussions. For the purposes of this thesis, relevant aspects of the IPCC consensus regarding recent, present, and near-future climate change are adopted, including the following: (1) the earth is warming and will continue to warm, despite occasional pauses, (2) anthropogenic greenhouse gases are a major cause of temperature rise since around 1850 and especially in the past 60 years (3) the Arctic is warming at a rate significantly greater than the planet as a whole and is likely to continue to rise more rapidly (IPCC, 2015).

Although the planet clearly has been warming overall since 1850, it is important to note that the warming is not evenly distributed throughout the globe. Some areas have experienced little change, others have actually cooled slightly, while still others have warmed much more rapidly (IPCC, 2013). As it happens, some of the most dramatic changes are occurring in those places where the fewest people tend to live (Kolbert, 2006), with Arctic regions serving as the prime example. While the planet overall has warmed by over 0.74°C over the past century, Arctic air temperatures have increased by 3°C (Hassel et al. 2004), causing numerous landscape changes: melting of sea ice and lakes; early permafrost thawing during the spring and refreezing later in the autumn; shrub expansion into tundra areas; and freezing or “locking” of pasture areas important

for migration routes of animals, including reindeer (Kolbert 2006; Nuttall 1998; Hansen et al. 2011; Chan et al. 2005).

This effect of greater impacts in the Arctic region due to general warming of the planet is frequently referred to as “Arctic Amplification” and is reflected in changes in rising temperatures as well as precipitation amounts and patterns (Serreze and Barry, 2011). In addition to these impacts, it also is predicted to result in a long-term reduction in Arctic sea ice, an increase in extreme weather events, changes in seasonal weather patterns, rising sea levels and subsequent endangerment of low-lying coastal settlements, thawing permafrost regions, and shifts in the diversity, ranges and distribution of flora and fauna (Hassol, 2004). While these impacts are not predicted to be uniform within Arctic Regions, many of them already have been observed and documented, including by the Sámi.

A growing consensus among Sámi herders and non-herders is that climate change, like many environmental issues, will be among the greatest challenges they face. Sámi reindeer herders in reindeer herding areas have become sensitive to change, making the focus of this study an important one for learning new ways of understanding the local impacts of climate change. One pressing issue challenging the reindeer Sámi is the increasing unpredictability of seasonal weather patterns and other impacts influenced by climate change. For example, it was expressed during one of my conversations with a reindeer herder that with “climate change comes warmer weather causing shrubs to cover migration areas making it difficult for herds to move through” (Herder 2, personal communication, April 2011). As mentioned earlier, the reindeer Sámi are experiencing other impacts on their migratory landscape in ways that are changing traditional reindeer herding patterns including the phenomenon of iced or “locked pastures” and the altered timing of reindeer herding to seasonal pasture areas. Understanding how climate change can cause significant

alterations to Sámi reindeer herding practices is an important component in addressing the question: to what extent are the rights of Indigenous people affected as changes induced by climate change occur?

“Right to the Cold”

Reindeer herding among the Sámi, documented as early as the ninth century (Gaski 1997; Ahren 2004), significantly drives the economic and cultural well-being and cohesion of the reindeer herding communities. The “reindeer Sámi,” Sámi who obtain a substantial portion of their livelihood from reindeer herding activities, rely on Indigenous knowledge passed from generation to generation to migrate with their herds. I argue that maintaining the traditional reindeer herding practices depends on a “right to the cold.” These rights were first asserted by the Inuit in 2005 when they called on the U.S, then the biggest emitter of greenhouse gases, to recognize its duties to reduce their greenhouse gas emissions (Osofsky 2006). The Inuit submitted their concerns in a petition to the Inter-American Commission on Human Rights (IACHR), calling attention to the issue of their right to the cold in order to be able to survive and adapt to the predicted impacts of climate change on their traditional ways of life (Leahy 2008). The concept of a right to the cold, as the Inuit have called for, will be applied in this study of the Sámi to draw attention to the potential impacts and long-term effects of climate change on their ways of reindeer herding. In so doing and in drawing on the Indigenous knowledge of the Sámi in this study, a richer understanding of the impacts of climate change in the Arctic as the region shifts and changes culturally, politically, and economically will be developed.

It is clear that reindeer herding constitutes a vital part of Sámi identity in northern Norway, in addition to providing a cultural and economic livelihood. However, as climate change

challenges the Sámi to migrate more effectively with their herds, there needs to be changes in Norwegian governmental policy that include the voices of the Indigenous Sámi to enable them to continue to migrate with their herds. The Sámi demonstrate that through merging the use of traditional knowledge, language, and research, scientists and policy-makers can be helped to better understand human and socio-cultural changes in the Arctic.

Indigenous Peoples, Knowledge and Geography

Important to this thesis is clarification of the terms Indigenous peoples, Indigenous knowledge, and Indigenous geography to respect Indigenous peoples' rights as such and to honor their knowledge from an Indigenous geography perspective. Because these terms (Indigenous peoples, Indigenous knowledge, and Indigenous geography) are frequently a subject of discussion, I will not attempt to present the various definitions and the arguments for and against them, but will instead provide working definitions of each term in the interest of providing context for my research.

Indigenous Peoples. The term “Indigenous peoples” itself holds different meanings to diverse groups of people. More generally, “the term *Indigenous* refers...to the living descendants of preinvasion inhabitants of lands now dominated by others” (Anaya 2004). This is not the case for all Indigenous peoples; however, they continue to have a connection through their ancestral roots “embedded in the lands in which they live, or would like to live, much more deeply than the roots of more powerful sectors of society living in the same lands or in close proximity” (Anaya 2004). Furthermore, they exist as *Peoples* with distinct sacred histories, both oral and written, with ceremonial cycles and languages to describe their ways of knowing and doing (Niezen 2003; Gaski 1997; Corntassel 2003; Anaya 2004). Conventions such as the International Labor Organization

1989 (No. 169) Indigenous and Tribal Peoples appeared under international treaty, after the Cold War, to protect Indigenous, Tribal, First Nations, and other tribal peoples' rights to live as they choose. Article 1(1) of the convention stated:

This convention applies to: (a) tribal people in independent countries whose social, cultural, economic conditions distinguish them from other sections of the national community, and whose status is regulated wholly or partially by their own customs or traditions or by special laws or regulations; (b) people in independent countries who are regarded as indigenous on account of their descent from the populations which inhabited the country, or a geographical region to which the country belongs, at the time of conquest or colonization or the establishment of present state boundaries and who, irrespective of their legal status, retain some or all of their own social and economic, cultural and political institution. (2) Self-identification as indigenous or tribal shall be regarded as a fundamental criterion... (International Labor, 2009 #475).

The definition of "Indigenous peoples" has become broad and sometimes ambiguous because of the representations of more than a million people throughout the world who define Indigenous differently from each other.

Indigenous peoples' territories are culturally distinctive and diverse, laden with sacred histories, ceremonial cycles, languages and narratives of their ways of knowing and doing (Niezen 2003; Minde 2008; Johnson et al. 2007; Gaski 1997; Corntassel 2003; Anaya 2004). My objective is to move forward under the basic understanding that "Indigenous Peoples are increasingly accepted as peoples with certain rights to self-determination, albeit within the broader framework

of society” (Anaya 2004). Therefore, taking an Indigenous perspective seeks to honor Indigenous knowledge systems.

Indigenous Knowledge. “Indigenous knowledge” is a term embedded within principles of tribal, First Nations and Indigenous peoples throughout the world. It is dependent on the collective participation of individuals and groups in building and revitalizing cultural ways of doing and knowing. Examples of Indigenous knowledge are found in language, customs, and ceremonial practices used for meaningful purposes. It is not a new concept. Rather, Indigenous knowledge embraces and encompasses pre-colonization practices of engagement with lands as part of using “practical common sense” (Herder 1, personal communication, April 2011, p.1). The definition of Indigenous knowledge is often contested. However, I adopt a concrete definition of Indigenous knowledge from Berkes (1999). Berkes explains that Traditional Ecological Knowledge (TEK) is a subset of Indigenous knowledge. It provides a basis for us to sift through ambiguities when it comes to the diversity of knowledge of Indigenous peoples. Berkes (1999) defines TEK as:

a cumulative body of knowledge, practice, and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings (including human) with one another and with their environments (Berkes 1999).

In light of this definition, I adopt Birkes’ TEK definition and apply it to Indigenous knowledge as an alternative way to understanding climate change that localizes its impacts.

Indigenous knowledge of changing landscapes provides a richer understanding of the phenomenon of climate change. It adds to the larger exploration of the impacts of climate change and how to communicate about it. The Indigenous knowledge of the Sámi reindeer herders draws

from day-to-day and long-term observations of the changes in snow, ice, and the terrain as well as reindeer behaviors. It is used as a guide to foster the human-animal relationship and is applied to understanding the experiences of Sámi reindeer herders and climate change. Use of Sámi Indigenous knowledge forms the basis of this study and takes the view that this knowledge is “not superseded by research-based knowledge” (Magga 2011), thereby giving Sámi agency.

Indigenous Geographies. The Sámi demonstrate a unique identity as “One People” that cross the political boundaries of Norway, Sweden, Finland, and the Kola Peninsula in Russia. Out of respect for the Sámi as “one people” and from my own Indigenous affiliation as a member of the Sisseton Oyate of the Dakota people, I refer to the Sámi as “Indigenous,” and I have approached this research with what Johan Mathis Turi and Ellen Inga Turi have described as an Indigenous-to-Indigenous approach (2011). This approach relies on Indigenous geography to gain further understanding of the lived experience of the Sámi and the impact climate changes have on their reindeer herding and livelihood.

Indigenous Geography integrates a geographic perspective into an analysis of the Indigenous adaptations to the cultural, social, economic and political changes caused by climate change. The issue of scale is particularly important for Indigenous Geography because it takes into consideration the spatial processes of changes at the local, national, and international levels as they relate to Indigenous peoples. Broadly, Indigenous geography brings awareness to those trying to participate in or influence spatial politics and the challenges faced when interconnections between scales (local, national, and international) occur, as well as the simultaneity of those connections (Agnew, Mitchell, and Toal 2003?). I use Indigenous Geography to capture what Johnson and colleagues refer to as “Creating Anti-Colonial Geographies” that embrace the power of Indigenous knowledge to create change across local, national, and international borders (Johnson et al. 2007).

Research Questions

The right to maintain economic and cultural practices that are part of the reindeer herding tradition in the face of a warming polar north raises an interesting set of questions. To address the complex nature of Indigenous climate sovereignties with respect to the Sámi, I investigated three questions.

First, what is the nature of today's reindeer and caribou populations, including their geographic locations and genetic characteristics? And how has, if any, the arctic environment influenced physical changes to reindeer herding and strategies? There is broad consensus that during the past century the planet has warmed by over 0.74°C; arctic air temperatures, on the other hand, have increased by 3°C (Hassol et al. 2004), causing numerous landscape changes: melting of sea ice and lakes; early permafrost thawing during the spring and refreezing later in the autumn; shrub expansion into tundra areas; and freezing or “locking” of pasture areas important for migration routes of animals (Kolbert 2006; Nuttall 1998; Hansen et al. 2011; Chan et al. 2005). Two areas related to the physical environment: reindeer herding in Sámi territory and landscape and traditional knowledge are important to understanding ways local strategies benefiting communities. For example, in northern Arctic environments climate change is altering temperature and precipitation patterns, resulting in frequent freezing and thawing cycles (Hassol et al. 2004). These cycles, as pointed out earlier, have a potential to “lock pastures” or create “icing” events on the ground that restrict herbivore access to forage (Weladji and Holand 2003; Chan et al. 2005). Locked pastures or icing events impact reindeer by restricting their ability to continue to forage on their traditional pasture areas (Herder 2, communication, April 2011).

The second research question is, how are Sámi asserting their cultural and political rights and identity in the larger context of expanding their self-determination rights? In Chapter Three, I discuss the process of assimilation called *fornorsking* or Norwegianization, which is a form of assimilation based on the coerced integration of the Sámi into larger Norwegian society by the Norwegian government. Chapter Three addresses four areas: first, the effort to assimilate reindeer herding into pastoralism; second, and social change as a result of the Norwegianization.

The third question I address is, the Sámi response to Norwegianization and the social changes arising from the Alta Dam controversy and methods the Sámi employ to remain as international leaders on Indigenous issues? Briefly, the impacts of climate change on the livelihoods of political and cultural communities such as the Sámi have resulted in endeavors to collaborate with government leaders to gain support for their views. Strong efforts of the Sámi to exercise self-determination in addressing their concerns about the impacts of climate change draw attention to what they have done or are doing with their rights in the face of climate change. These are discussed in Chapter 4.

Chapter Five consists of my observations from the field experience and the challenges the Sámi face. I discuss the current adaptation strategies used to keep reindeer migrations as close as possible to those in “past times.” In other words, herders draw on traditional knowledge of historical natural migration patterns of their herds, while dealing with non-climatic factors challenging reindeer herders to further adjust herding strategies to meet the demands of state structures.

Conceptual contribution

My conceptual contribution is to ask if there is a right to some degree of “climate sovereignty” embodied within the larger concept of Indigenous sovereign rights. The challenge of the term sovereignty is that it conjures up ambiguities and debates about its conflicting meanings for Indigenous peoples and states, as do the terms Indigenous and climate change themselves. The Merriam-Webster dictionary defines sovereignty as the “supreme power especially control over a body politic.” Agreeing with Lori M. Graham (2011) use of “Indigenous concepts of sovereignty are not limited solely to western connotations of original power of people and territory.” Indigenous peoples do not seek statehood, rather, “embody the right of Indigenous peoples to live and develop as culturally distinct groups, in control of their own destinies and under conditions of equality” (Graham, 2011 #283). I use the plural form of the term, sovereignties, in this context to better represent the rights of more than 5,000 Indigenous groups in the international system.

In my thesis I link two topics in order to clarify and describe the complex nature of the impacts of climate change on Indigenous climate sovereignties: 1) the threat of climate change and its impacts on the physical environment in the Polar North; and 2) the implications of human-induced warming in that region for Sámi rights in particular and Indigenous rights in general to self-determination. Presently, despite the increased attention on the impacts of climate change in Indigenous communities by researchers, scientists and policy-makers, the Indigenous communities themselves often are excluded from participating in assessments and reports concerning them as peoples. I draw attention to climate sovereignties in this case study because there is a need to include Indigenous people in science and policy discussions relating to changes in their landscapes to further empower them to sustain their own subsistence environments and livelihoods.

Methods

My research uses Indigenous and ethnographic approaches that critically examine and compare both Indigenous and non-Indigenous voices to describe the Sámi world, inform research and shape policy, and to some degree define social justice. Data for my Indigenous approach relied on listening to the traditional stories shared by reindeer herders, and also through the Sámi concept of learning by herding, based on my experience of participating in a spring reindeer migration during March through April 2011 in Kautokeino, Norway. My first-hand observations and field notes while accompanying the reindeer migration from inland Kautokeino, to the coast of Burfjord, Norway over a period of nine days and a distance of over 180 kilometers provided the substance of my ethnographic research. I employed a mixed study methodology because it better prepared me to take part in community events, workshops, reindeer herding, and visiting with academic professors, as well as with leading scientists in the field of climate change, policy, and research.

I conducted informal interviews, which I refer to as conversations, with eight men, of whom three were between the ages of twenty-five and thirty and five of whom were over the age of thirty-five, plus two women over the age of thirty. I selected my interview participants based on their participation in the reindeer migration. My interview questions were flexible and open-ended in format because one question often led to a learning experience or story of past times regarding reindeer herding. In keeping a record of my conversations, I opted to document them in a notebook after the conversations ended rather than using a voice recorder, which might have inhibited free conversation. I also maintained a daily journal of my reindeer herding experience.

A Final Note

The Arctic Climate Impact Report (ACIA) reported climate change to be the most important phenomenon impacting our societies today, and even more so in the Arctic (Symon

2005). During my first conversation on the flight from Tromsø to Alta, Norway, a Sámi said, “climate change we have been dealing with up and down, nothing new” (Interview 1, personal communication, April 2011). One way to interpret this statement is that climate change is here, as in the past, and the Sámi have already developed ways to understand and adapt to its effects on humans and environments. The myriad of political and cultural changes I document in Chapters Two through Four show both resiliency and adaptation, especially in this period of climate and social change.

Chapter 2. Reindeer and Reindeer Herding in Sápmi

At a lecture at Sámi University in Kautokeino, a scholar expressed the thought “that if you find the history of snow, you will find the history of reindeer (non-herder 5, program participant, April 2011). The scholar’s expression not only implies that reindeer have a long history of existence, but that their lives and their history are intimately intertwined with snow and cold. Reindeer herding or husbandry, the terms are often used interchangeably, is the primary traditional livelihood for more than twenty different Indigenous peoples throughout the Arctic in both Eurasia and North America. In Eurasia these places stretch from Norway, Sweden, and Finland, to Russia, Mongolia, and China, involving more than 100,000 herders and 2.5 million semi-domesticated reindeer (Magga 2011, Banks et al. 2008). Reindeer are also herded in Alaska and northern Canada, where they are known as caribou. Reindeer are one of the most significant animals in providing a traditional livelihood across a vast territory that consists of a large part of the Arctic. They form a substantial component of food security and of the economy for many of the Indigenous reindeer people that live there. The primary issue with reindeer herding today is that herders are unable to fully ply their livelihood in a traditional way and are hampered in their ability to apply traditional knowledge. This chapter discusses the unique biology of reindeer and their adaptations to the arctic environment, the history of reindeer herding, the nature of reindeer migration, and most importantly, the traditional Sámi social structure, the *sii’da*, that is intertwined with reindeer herding.

Reindeer and the Arctic Environment

Reindeer (*Rangifer tarandus*) have been hunted, used as decoys, transported, tamed and domesticated over the vast arctic and subarctic regions. A recent study showed that reindeer have

been widely distributed across North America and Europe since the Last Glacial Maximum (LGM) (Banks et al. 2008); however, as Ingold (1980) notes, reindeer evolutionary history is “something of an enigma”. Regardless of the place of origin, Johannes Scheffer (1621-1679) in “The History of Lapland” recalled during his accounts that reindeer were established in Scandinavia by at least the ninth century CE.

Places where reindeer currently are found can be distinguished as falling into two major groups. Woodland reindeer remain year-round in forests; they are rather large, less gregarious, and individually more wary. On the other hand, tundra reindeer (the type of reindeer herded by the Sámi) are the opposite – highly gregarious and undertaking long migrations between seasonal pastures. In the high Arctic, reindeer migrate over longer distances due to low plant biomass and where their environment is seasonal. The lifespan of both types is approximately fifteen years. According to Ingold (1980), perhaps no single species has been more exploited by man in such a diversity of ways without undergoing any significant changes of form.

While all reindeer and caribou belong to a single species, *Rangifer tarandus*, a number of subspecies have been proposed, although these divisions remain a matter of ongoing debate, especially in light of recent DNA analysis. The subspecies traditionally have been primarily identified by their geographical locations and by their external physical features, such as fur color. Some of the most commonly proposed subspecies are the Eurasian tundra reindeer (*R.t. tarandus*), the Finnish forest reindeer (*R.t. fennicus*), and the Svalbard reindeer (*R.t. platyrhynchus*) for Eurasia; and the Canadian barren ground caribou (*R.t. groenlandicus*), American or migratory woodland caribou (*R.t. caribou*), Alaska or Grant’s caribou (*R.t. granti*), and Peary caribou (*R.t. pearyi*) for North America (Røed et al. 2008a). The reindeer herded by the Sámi are *R.t. tarandus* (Eurasian tundra reindeer).

Genetic differentiation among the subspecies is believed to be primarily due to isolation of reindeer populations during the late Wisconsinan glaciation, with a major population in Beringia and smaller populations in various refugia, primarily south of the ice sheet (Weckworth et al. 2012, Knut 1992). A study by Røed (1992) found that, of six subspecies studied, Eurasian tundra reindeer (*R.t. tarandus*) and Alaska caribou (*R.t. granti*) were the most similar genetically and most likely indicate a common ancestry in the Beringian region.

Reindeer Biological Adaptations

The evolutionary success of reindeer is due to their exceptional adaptation to cold, their gregarious nature, and their enormous powers of migration over long periods of time in harsh weather conditions (Vitebsky 2005, Paine 1994). Their thick fur is used to insulate them from the harsh winters, which they shed in the summer months; in other words their coats are temperature dependent and adjust with the seasons. The “inside of the nostrils are cleverly convoluted so that the animal loses less heat from breathing” (Vitebsky 2005). Both male and female reindeer have long fleshy antlers that appear when reindeer reach maturity. Males lose their antlers during summer and winter months while female reindeer lose their antlers after they give birth (Paine 1994). Reindeer hooves are also well adapted to their environment and, as with their fur, they change with the seasons. In the summer, enlarged footpads permit reindeer to tread on tundra that is wet and soft from summer surface melt, while in the winter the edges of the hooves become more prominent with the reduction in prominence of the footpads, permitting the hooves to more easily cut through snow and ice, both for traction and for digging down to uncover lichens to eat, a behavior known as cratering (Beumer, Varpe and Hansen 2017).

A unique adaptation reindeer possess is the ability to see ultraviolet (UV) light in their visual environment. Whereas humans and most terrestrial mammals see in wavelengths ranging

from 400 to 700 nanometers (blue through red), reindeer can additionally see in the 350 to 400 nanometer, or ultraviolet range. As an international team of scientists (Hogg et al. 2011) discovered, this enables reindeer to see:

“...some very important things that absorb UV light and therefore appear black, contrasting strongly with the snow. This includes urine – a sign of predators or competitors; lichens – a major food source in winter; and fur, making predators such as wolves very easy to see despite being camouflaged to other animals that can’t see UV (p.2018).”

Thus, it appears that being able to see in the UV part of the spectrum not only enables reindeer to spot predators or competitors (or their markings) that would otherwise blend into the snowy background, it also allows them to more easily identify food sources. It is not yet known why reindeer are able to adjust to seeing in the UV part of the spectrum without suffering either temporary or permanent damage to their eyes, such as the snow blindness to which humans are susceptible.

A further adaptation related to reindeer vision was recently discovered by Stokkan et al. (2013). As Stokkan and his co-authors point out, it has long been known that the eyes of some mammals are adapted to low vision conditions by means of a reflective surface known as the *tapetum lucidum* (TL) located behind the central retina. The TL functions somewhat like a mirror by reflecting light back toward the retina, providing for additional capture of light and increasing overall light sensitivity in dark conditions. One of the characteristics of mammals with a TL structure is that their eyes have a golden appearance. However, Stokkan et al. (2013) found that reindeer eyes shift color with the seasons, having the typical golden appearance in summer but shifting to a deep blue color in winter. The blue color apparently is caused by significantly

increased inner eye pressure during the winter months which in turn causes a change in the tapetum lucidum that enables it to more efficiently reflect the shorter wavelengths that characterize the low-light conditions of high-latitude winters. They note that this shift in the TL leads to additional light sensitivity and hypothesize that it may provide an advantage in detecting predators.

Origins of Reindeer Herding in Eurasia

It has been estimated that there are approximately three million reindeer in Eurasia, divided roughly evenly between wild and domesticated populations (Baskin 2005). Røed et al. (2008) note that there are two hypotheses regarding the origin of domestic reindeer herding in Eurasia. One, known as the “monocentric” hypothesis has held that reindeer herding began in a region of the Russian taiga east of the Urals, spreading outward from there to other regions. The competing, “polycentric,” hypothesis says that reindeer herding originated independently in several different centers. Recent DNA testing (Røed et al. 2008b) has tended to confirm the polycentric hypothesis, pointing to independent origins for domestic reindeer in Russia and Fennoscandia, implying that “the Saami people of Fennoscandia domesticated their own reindeer independently of the indigenous cultures in western Russia” (p. 1849). Today, reindeer are herded over an area of approximately 14,000 square kilometers, or about 40% of Norway’s land area (Jernsletten 2002) (Figure 1).

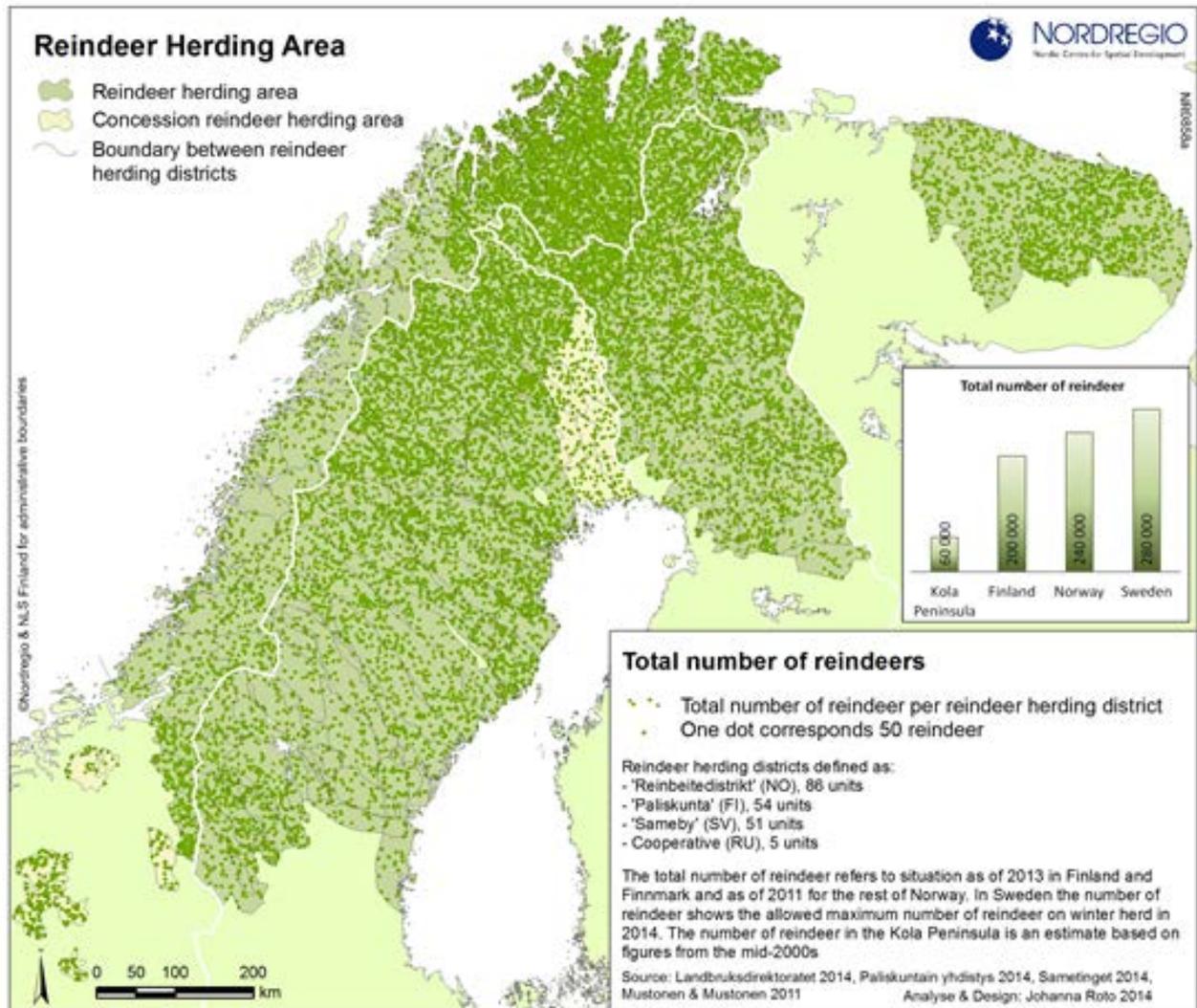


Figure 3. Reindeer populations in Fenno-Scandia. Although Sweden has the largest total number of reindeer, Norway's Finnmark region in the far north of the country (where the author conducted her field research) has the highest concentration of reindeer per unit area. Graphic by Johanna Roto, Nordregio, 2014.

Reindeer Migration

As noted earlier, one important characteristic of tundra reindeer is their ability to migrate over long distances. Accounts by various explorers, scientists and researchers extending back

nearly four centuries document diverse uses of reindeer by local peoples, and provide evidence for such migrations. However, rock art dating back nearly 7,000 years near Alta, the largest city in Finnmark “includes numerous depictions of reindeer and the humans who both hunted and tended to them,” and it is believed that reindeer husbandry had become an important part of Sámi life and culture by the late middle ages (Dropkin 2015).

Migration refers to the passing or movement of animals from one region or environment to another for purposes of breeding and feeding. Reindeer are seasonal animals that operate on a seasonal timetable according to their natural instincts to migrate. Reindeer migration is primarily driven by the sparse availability of fodder with low plant biomass where the environment is seasonal. Lichens are the preferred food source for reindeer for the rich protein they contain. In case of a shortage of pasture areas, supplemental feeding, such as hay or fodder, may be used to restore a lack of nutrients, although the additional expense creates an economic burden.

Reindeer typically spend summer in or near the coastal regions of Norway and migrate back to the interior for winter. For example, the Magga family’s sii’da described by Dropkin (2015) has a herd of around 2,000 reindeer that spends summer on a small island northwest of Kirkenes, Norway before returning to the interior near the Norwegian border with Finland (p.3).

Breeding and Calving

Breeding occurs from late September or October until December. Female reindeer typically reach reproductive maturity the first year, whereas male reindeer reach reproductive maturity in the third year. The reported gestation period for reindeer varies, from 200 to 220 days (Rowell and Shipka 2009). Calving occurs mostly in the summer pasture areas where food availability is more readily accessible to ensure the health and nutrition, and safety from predators. The 2,000 reindeer herd of the Magga family’s sii’da (referenced above) may produce

up to 1,500 calves in the summer pasture areas and then migrate back to the interior with the herd for winter (Dropkin 2015, p. 3). Usually before the calves are a year old a female reindeer is separated from her young.

Pastures and Feed

Pastures are the most important resource for reindeer survival, and pasture availability is critical for nutritional strength during seasonal migrations. There are two ways to distinguish pasture areas. The first focuses on informal definitions of good pasture informed by Sámi traditional ecological knowledge (TEK). Reindeer herders define “a good pasture is a place where reindeer get enough forage and reindeer can graze in peace (Northernmost Europe).” I found in my own interviews this was the consensus among Sámi herders that pastures are vital to the survival of reindeer health.

The second way to describe adequate pasture is a numerically defined statement of feeding requirements for reindeer (Ingold 1980):

Given that a deer needs to consume 1500-2000kg (fresh weight) of lichen per winter, and that the optimum productivity of grazed lichen is around 120-160 kg/ha/yr, it follows that about 10-12ha of pasture are required per deer, or 2 ha per year allowing for a five-year pasture rotation cycle.

Although the second definition has been used to reduce and restrict pasture availability, it gives an overview of the specific amount of pasture needed per reindeer.

The availability of quality reindeer pastures is critical to the ongoing success of reindeer herding. A member of one reindeer sii'da, Mariann Magga, said that their operation relies on 8 to 12 different types of grazing area, each with a specific timing and purpose. As she puts it, “We

are completely depending on that we have those resources [pastures] there. If you take out the place where the calves are born, then you can't have reindeer herding as your income. You have to have all the types of grazing land that the reindeer need. It's like a house of cards; if you take one out there's nothing left." (Dropkin 2015).

Herder Responsibilities during Migration

Herders and reindeer form an organic unit where both the herder and herd know not only the geography of the terrain and landscape but the ability to identify their own reindeer. Identifying reindeer (biology and physiology) is a cultural practice inculcated at early age. It takes years to learn how terminology can be used to identify reindeer and their relationship to owners and the environment. Knowledge of the migration terrain is held by both the reindeer and herder. Migrations routes as they are today are confined to certain areas, whereas historically they were held in common by Sámi.

One of the responsibilities of the herder is to understand and respond to the behavior of the reindeer and follow their cues when they are ready to migrate. The herd typically forms a single file line with the bull starting the migration from summer island areas to winter mountainous/tundra areas, where herders are either in front of the line or behind the herd (Smith observation 2011; Lorimer 2006). If, perhaps, one reindeer does not cooperate with the migration, it is possible it will be considered for slaughtering. Tracking individual reindeer will have bells around the neck to alert the herder to the location of the reindeer. Reindeer rely on the herder to protect from predators and to keep them within appropriate "boundaries," to provide supplemental feeding, and to keep them from mixing with other sii'da's herds. Often, if the migration becomes delayed due to sporadic movements by the reindeer, snowmobiles will be

used to “push” or encourage the reindeer to migrate to the summer or winter pasture areas in a timely manner.

Herders are responsible for reinforcing their autonomy and respect for customary law to prevent resource exploitation and management of pasture ecosystem and knowledge. Traditional knowledge is the intergenerational responsibility elders and experienced herders to pass from generation to generation.

Modern Adaptations

Modern reindeer herding is built on a foundation of inter-generational foundations but has adopted modern technology to increase efficiency. Snowmobiles and mobile phones are ubiquitous among today’s Sámi reindeer herders, and trucks and ferries are used to transport reindeer to certain pasture locations, especially to offshore islands. Building and maintaining fences and maintaining snowmobiles and other equipment have become everyday parts of modern reindeer management. Negotiating and maintaining relationships with farmers and other herders along their migration routes, along with understanding and respecting the boundaries for migrating across Sweden’s and Finland’s concession areas, are all important to modern herding and migration strategies.

Challenges to Reindeer Herding

Current challenges to reindeer herding include at least three fundamental issues, some of which have been obstacles since time immemorial and others of which are more recent. They include (1) losses due to predation, (2) loss of pasture due to encroachment by government and commercial activities, and (3) climate change (International Center for Reindeer Husbandry 2017; <http://reindeerherding.org/herders/Sámi-norway/>). Somewhat surprisingly, predation

accounts for 80% of all reindeer losses. The major predators of reindeer in Norway include wolverines, lynx, and golden eagles, although bears and wolves also account for some losses. Reindeer herders can receive compensation for predation losses, although there is a wide disparity between claimed losses and government-approved payments (Jernsletten 2002, pp. 99-100). Loss of pasture may come from mining, power lines, hydroelectric development, defense installations or other activities. Although the government provides compensation for lost pastures, the obvious problem is that it is often not possible to find other equivalent areas to make up for the lost land. According to a report cited by ReindeerHerding.org, more than 30% of reindeer pasture area in Norway already has been lost (International Center for Reindeer Husbandry 2017; <http://reindeerherding.org/herders/Sámi-norway/>).

As noted in Chapter 1, one impact of climate change that is being observed more frequently by Sámi herders is the phenomenon of “locked” pastures, where a layer of ice forms over the snow, making it difficult for reindeer to dig down with their hooves (“cratering”) to the underlying lichens. Pasture locking can result either from rain-on-snow (ROS) events or from thawing and re-freezing of the surface of the snow. In either case, the ice layer effectively “locks” the pasture from grazing by the reindeer (Symon 2005, Jernsletten 2002). Beyond pasture locking, climate change may lead to degrading of the permafrost that underlies the reindeer herding region that would disrupt migration routes due to earlier melting and later freezing. Moreover, a warming Arctic would prove more attractive for development of northern resources and in turn lead to more road building and other construction. One potential benefit of a warming climate is that extended summers would give reindeer a longer period of time to build up fat and protein reserves (International Center for Reindeer Husbandry 2017, <http://reindeerherding.org/herders/Sámi-norway/>).

Reindeer Herding and Government Policy

Reindeer herding has been both recognized and regulated by the governments of Fennoscandia since at least 1751 with the signing of the Lapp Codicil. As ReindeerHerding.org puts it:

The aim with the Codicil was to secure the future reindeer herding for the Sámi people affected by the border. The states agreed that regardless of state borders, the reindeer herding Sámi should be able to continue to migrate with their reindeer to the other kingdom in the same way as they had done before the border demarcation.

In the post-World War II period, rapid modernization in Norway led to tensions between the extensive geography of semi-nomadic reindeer herding and an expanding Norwegian economy. This has led to “new regulations and administrative structures” that have resulted in a reindeer economy that retains many traditional aspects of Sámi life but that is highly organized and tightly regulated by the state (International Center for Reindeer Husbandry 2017, <http://reindeerherding.org/herders/Sámi-norway/>). The stated purpose of government regulation is to find a balance between the rights and needs of Sámi reindeer herders vs. farmers and other land owners, while protecting the environment and enabling sustainable management of reindeer. Sámi reindeer herders generally agree that regulation is needed to maintain sustainability. For example, one herder explained that “regulating grazing between their pasture areas was necessary to the health of reindeer” (Herder 1, personal communication, April 2011)

Herders and Reindeer Earmarks

Not just anyone, including among the Sámi, can become reindeer herders. By definition and by law, only those Sámi who have a right to a reindeer earmark are authorized to herd reindeer within the six reindeer pasture areas of Norway, and only those whose parents or grandparents herded reindeer as an occupation qualify for an earmark. In other words, it must be proven that reindeer herding has been part of the family heritage and culture. According to ReindeerHerding.org, “A reindeer earmark is a combination of one to many cuts in a reindeer’s ears which all together tells who the reindeer owner is. There are around 20 different approved cuts and in addition some 30 different combinations of cuts, and all those cuts and combinations have their own name” (International Center for Reindeer Husbandry 2017, <http://reindeerherding.org/herders/Sámi-norway/>). Any new earmarks must be approved by the earmark committee, and all Sámi reindeer must be earmarked by October 31 of the year in which they are born.

Governance structure of reindeer herding

Day to day administration and management of reindeer herding regulations is the responsibility of the Norwegian Reindeer Husbandry Administration, which is under the direct control of the Reindeer Husbandry Office of the Ministry of Agriculture (Figure 2). Under the Reindeer Husbandry Administration are six Reindeer Pasture Areas – East Finmark, West Finmark, Troms, Nordland, North Trondelag and South Trondelag/Hedmark. Each of the pasture areas has an Area Board of five or seven members that are elected by the Sámi Parliament and the County council. In addition to the six Reindeer Pasture areas that are exclusively for Sámi reindeer herders, there are four “Concession” areas where reindeer husbandry is permitted for

both Sámi and non-Sámi herders. These areas account for around 10,000 reindeer (out of approximately 200,000 total in Norway).

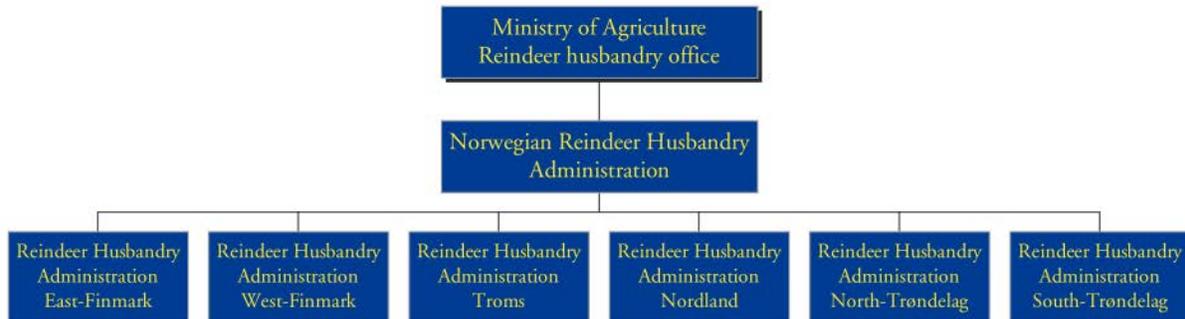


Figure 4. Norway Ministry of Reindeer Husbandry - Organization Chart, showing the top levels of the reindeer governing hierarchy. Other governing bodies extend down to the regional and local levels. From Jernslettern and Klovov, 2002.

Under the Pasture Areas are 90 Reindeer Pasture Districts with 78 summer and year around districts and 12 autumn-, winter-, and convention districts (Figure 3). Districts each have a District Committee consisting of three persons elected from the district. Prior to 2007, the basic reindeer herding unit was known as a “Husbandry Unit” which consisted of one reindeer herd managed by one herder (or spouses working together). However, as Jernslettern and Klovov (2002) put it: “The concept of “husbandry unit” reflects the Norwegian management system of the reindeer husbandry, the Saami themselves have traditionally organised the reindeer husbandry through the “Siida-system” (p. 88). Following 2007, the Sii’da became the acknowledged foundational organization underlying Sámi reindeer herding (International Center

for Reindeer Husbandry 2017; <http://reindeerherding.org/herders/Sámi-norway>).

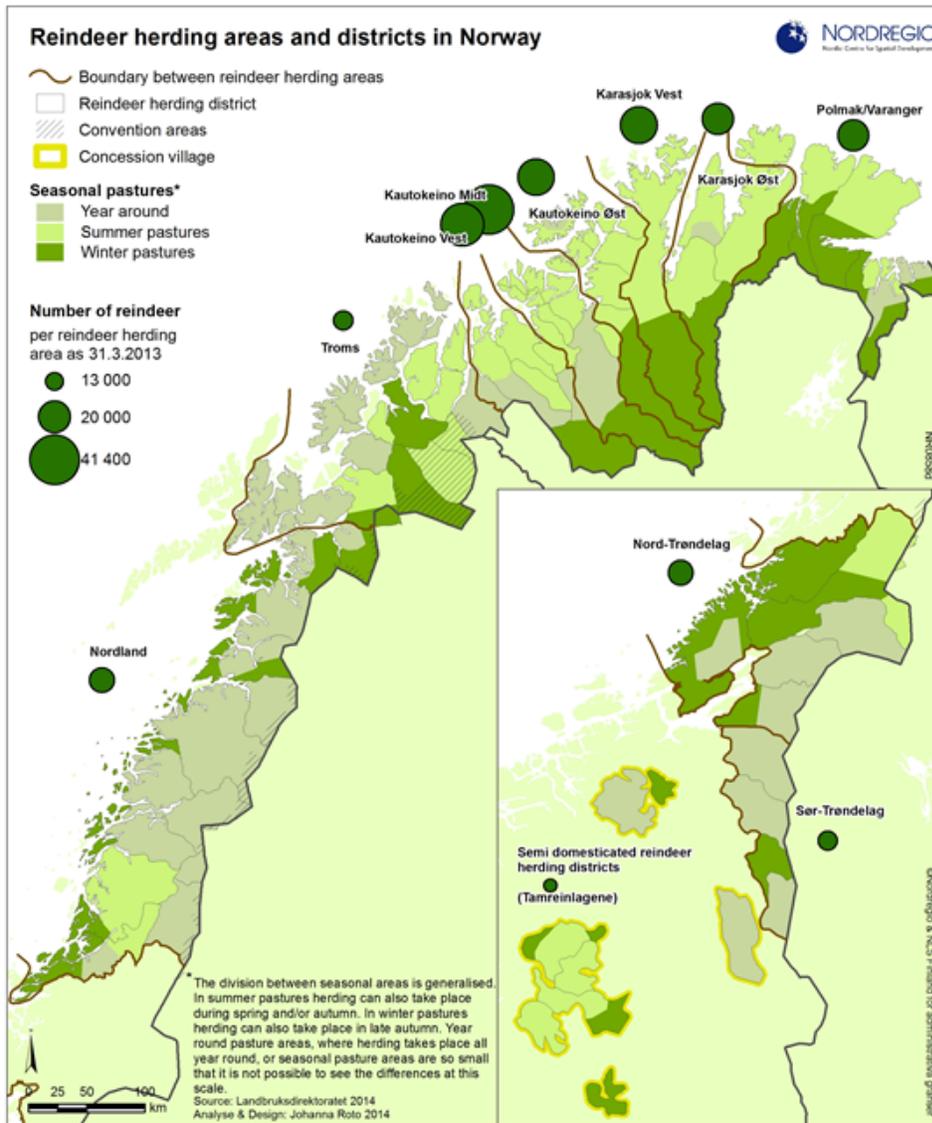


Figure 5. Reindeer herding districts in Norway. Dark green areas in northern Norway show summer pastures in the highlands, while winter pastures closer to the coast are shown in light green. The author's migration with the Sámi reindeer herders in 2011 took place beginning in Kautokeino. Graphic by Johanna Roto, Nordregio, 2014.

Reindeer and the Sii'da

Sii'da is a Sámi word meaning an organization of households who are individual reindeer owners cooperating on supervision of the reindeer herd (Turi 2008) and/or “a group of reindeer owners that practice reindeer husbandry jointly in certain areas” (Sara 2009). Each sii'da consists of a family, extended relatives, and also may include members who are not related, (sometimes call *apprentices*) making up sii'da kinship. The sii'da is a highly systematized self-management and social organization that practices traditional knowledge of Sámi concepts of land rights, customs, and even reindeer herding terms. Elements that make-up the sii'da are individuals; husbandry units; collective and herding units; territory, resources, and infrastructure; and a semi-nomadic lifestyle that flows with the seasons. Regular participation deepens and strengthens successful reindeer pastoralism by providing security and opportunities for furthering cooperation and shared knowledge or generational knowledge.

Each sii'da is responsible for the care of its reindeer herds and pasture areas, and Sii'da units and the individual herders are accountable for contributing to the work of reindeer herding. Responsibilities include land and landscape management pertaining to pasture areas, and primarily involve managing pasture rotations throughout the duration of the year for rutting, breeding, calf marking, grazing, and slaughtering.

The sii'da is also a “place” that holds generational knowledge or traditional Indigenous knowledge. In chapter one, indigenous knowledge was defined as a cumulative body of knowledge, practice, and belief, evolving by adaptive processes (Berkes 1999) passed onto future generations. The main elements and principles of Sámi knowledge about reindeer herding are ancient in origin and include:

- the individual (*siida olbmot*)

- the husbandry units (*baikedoalut*)
- the collective and the herding unit (*siidaboallu*)
- the sii'da territory, resources, and infrastructure (*orohagat/siidavuoddu*)
- the semi nomadic or nomadic lifestyle in accordance with the flow of the season (*johtalladdan*) (Sara 2009)

Author and reindeer herder Mattias Ahren (2004) discusses sii'das in the context of Sámi customary laws. These laws are viewed by the Sámi as being equal to Norwegian statutory laws, thereby asserting that Sámi customs or traditions exist within a political and socio-economic order predating colonization of their resources. Customs have long played an important part in the distribution of land, waters, and resource within Sámi society (Ahren 2004). Ahren (2004) extensively discusses the development of Sámi customary law and notes that “early” Sámi primary livelihood was based on hunting, fishing, and gathering and that over time semi-nomadic lifestyles adopted or adapted to include reindeer herding in the 1600s. Sii'da structures operate differently depending on geography and livelihood modes such as fishing and reindeer activities.

Reindeer in the sii'da are individually owned and inherited but collectively combine to make one unit (Paine 1994; p. 14). Children, both boys and girls, actively participate in reindeer herding as early as age ten (Bergman et al. 2008). Modern herding is carried out by both men and women, but men do most of the actual herding.

Traditionally, the wealth of a sii'da was determined by the size of its reindeer herd. This was generally expressed in terms of the relative size of the herd, “bigger” or “smaller,” rather than numbers of reindeer, and constituted the collective wealth of the sii'da. The foundations of reindeer wealth would include the knowledge and “know how” of breeding and reproductive

success. Also included in the wealth would be an understanding of sii'da relationships and the flexibility of herd management strategies to accommodate survival of the household and the herding livelihood itself. Reindeer wealth was determined among the sii'da family and later across other combined sii'das (Brännlund and Axelsson 2011). Each family sii'da had a purpose for its reindeer, such as skins used for clothing, antlers for jewelry and ceremonial practices, and reindeer meat was used to sustain the reindeer herder diet. Often, reindeer were used as gifts to the bride and family. Reindeer also were used to barter and trade for goods, and reindeer constituted a “culinary luxury” for herders (Reinert 2006). Many of these herder practices still are in existence today.

Sámi sii'da systems were never static throughout the pastoral year; in fact, it is (and was) just the opposite. Often, several sii'das combine and regroup over the pastoral year and may change significantly (Ingold, Riches and Woodburn 1988, Paine 1994). Ellen Inga Turi (2011) considers the sii'da system as a “strategic merit” (Turi 2008) system that involves careful adaptation strategies to changing environment and social conditions. Strategical merit is a planning process in which highly skilled sii'da groups come together to develop a living plan including activities or community involvement that sustains and/or enhances the life of the sii'da. One example noted earlier was that several sii'das may combine and regroup over the pastoral year to improve and adapt to social and environmental changes. This is not an entirely “new” concept, however, having ancient foundations; in a sense these are traditional practices framed to fit twenty-first century herding in northern Norway.

In practice, all sii'da members establish and contribute to knowledge of reindeer herding at varying levels, at the same time sustaining an important aspect of their traditional livelihood. Each herding unit consists of experience, knowledge and expertise regarding seasonal cycles and

the movement of large reindeer herds from pasture to pasture. However, pasture conditions are not the same for each unit. During grazing, one portion of the pasture is usually grazed at a time while other pasture areas “rest.” The sii’da management system monitors each pasture grazing area within sii’da areas, which allows for the herder to rotate summer pasture areas. In winter areas, the importance of pasture areas’ availability ensures that the nutritional diet of reindeer is sustained even when a “locked” pasture occurs. The operation of each herd unit requires families and individuals to organize movement to another pasture by maintaining relationships with private landowners and businesses, in the case of crossing areas that are not included in approved migration routes.

Roles of Sámi Women in the Sii’da

Women have their own traditional roles in reindeer herding but their status is considered equal to that of men. Historically, women had strong matrilineal traditions, owned property, and played a prominent role in preparing their own clothing (Kuokkanen 2011). Sámi women traditionally had a form of equality with men, with “power” over their own domains. For example, Sámi women, as much as men, had control of decisions impacting family economies, and they played everyday roles in reindeer herding operations. The job of castration of reindeer, for example, belonged to both men and women. And, since counting reindeer is considered a taboo among male reindeer herders, this task still is often left to women when the separation of family/sii’da reindeer to migrate to pasture areas takes place. In the case of divorce or separation, a woman could take her share of the reindeer with her. Post-World War II changes regarding reindeer herding erased the traditionally held right of women to own reindeer and placed reindeer owning Sámi women under their husbands.

Most contemporary Sámi women are seen as a driving force in the development of projects that advance Sámi rights and identity. In the first national Sámi Conference in 1917, Elsa Laula Renberg (1877-1933) created a “Life or Death” pamphlet that encouraged claims to Sámi land rights and livelihoods and advocated for education. Later in the century, Sámi women played an important role in gaining national attention for reindeer herding rights and Sámi livelihood during the Alta Dam Conflict (discussed in more detail in Chapter 3) where 14 women occupied the office of Norwegian Prime Minister Gro Harlem Brundtland in 1981.

Chapter 3. *Fornorsking* – An Era of Assimilation

As nationalism and a concurrent emphasis on national identity gained momentum in the latter half of the nineteenth century and into the twentieth century, one of the vexing questions faced by states was how to handle their minority Indigenous populations. In many Western European and North American countries, and others as well, the “obvious” answer was assimilation. The goal of assimilation policies was to integrate minority and Indigenous populations into the dominant society’s customs and values. Through the process of assimilation, as viewed by progressive leaders of the era, Indigenous peoples would adopt not only the language and education of the dominant culture, but its religion, lifestyle, and means of economic livelihood, as well. This of course would necessitate Indigenous people abandoning their own cultures, which were variously described as “barbaric,” “uncouth,” “uncivilized,” “backward,” “heathen,” and a host of others. Assimilation policies regulated or diminished entirely the traditional practices of Tribal, Indigenous or First Peoples; they constituted an inherently coercive process toward minority communities to fully integrate them into the dominant population by creating uniform customs and values.

Whether stated or unstated, the assumption underlying assimilation was that Native populations were inferior in all aspects of their lives, and the desired result of assimilationist efforts was to be the harmonious incorporation of Indigenous populations into the dominant culture, thereby peacefully overcoming seemingly intractable problems arising from conflicts over land, culture, and sovereignty. As one scholar has put it, a premise of assimilation essentially was that state sponsored policies should restrict the use of language and access to

cultural knowledge, or lifeways. It often entailed removing indigenous people from their original lands, forcing them to rebuild home and family environments (Niezen 2009; Niezen 2003).

In the U.S., assimilation rested on a three-cornered foundation of land allotment, education, and cultural reform. In all these efforts, they were enthusiastically supported and assisted by various Christian denominations and reformers known as Friends of the Indian. Land allotment was a legislative policy of forcing Native people to take possession of individual parcels of land, homestead style, in an effort to convert them into farmers and ranchers. Although it failed dismally in its primary objective, it did achieve the breakup of tribal lands, resulting in a diminishment of tribal authority. As U.S. President Theodore Roosevelt put it, “The General Allotment Act is a mighty pulverizing engine to break up the tribal mass.” Education, another major assimilation tool, was conducted both on and off reservations by government and religious schools – these included day schools, on-reservation boarding schools, and off-reservation boarding schools, such as the Carlisle Indian Industrial School in Carlisle, Pennsylvania, and Haskell Institute in Lawrence, Kansas. Richard Henry Pratt, the founder of Carlisle and a major proponent of using education as a tool of assimilation, is perhaps best known today for his saying, “Kill the Indian, Save the Man,” a reflection of the belief that education was key to eliminating Native customs and beliefs, thereby “saving” them. Undermining and replacing cultural practices and Native religion was interwoven throughout all the assimilation programs, but was also made explicit with the establishment of Courts of Indian Offenses in 1883, which aimed to suppress certain traditional ceremonies, dances, and marriage practices.

The Sámi assimilation period in Norway occurred in the last half of the nineteenth century and into the early 1960s. The case of the assimilation of the Sámi in Norway differs from the U.S. experience (and for that matter, Canada and Australia, as well) in at least two important

aspects. The first is that the Sámi were never viewed as a hostile physical or political threat to other inhabitants of Norway in the way that a number of North American Tribes were viewed as threats to Euro-American settlers. An important result of this was that the Sámi were not subjected to military expeditions, eliminationist policies, and genocidal massacres, nor confined to reservations. On the other hand, it perhaps gave them a weaker hand in negotiations precisely because they were not viewed as a threat. The second key difference lay in the Lapp Codicil of 1751 that recognized certain rights of the Sámi (“Lapps”) to maintaining their traditional lifestyle of reindeer herding and reindeer migration across state borders. Such recognition of migratory rights for nomadic or semi-nomadic peoples would have been anathema to U.S. policies that explicitly sought to eliminate nomadism and “the hunt.” It should be noted, however, that although the Lapp Codicil recognized migratory rights, it did not address or protect the ownership and control of land in Sámi territory.

This chapter will provide background and context on the evolution in Norway from the mid-nineteenth through mid-twentieth centuries regarding social policy that forged a path from assimilation to self-determination for the Sámi people. This is not intended as an extensive or exhaustive history of Norway during this period. Instead, it is intended to lay a foundation for understanding the policies that resulted initially in the control and assimilation of the Sámi into mainstream Norwegian society, but ultimately providing the impetus for moves toward self-determination. In that context, I discuss the impacts of these social policies on the Sámi way of life, such as altered herding strategies and changes in social and economic systems.

The Norwegian government’s policies brought into question the status of Sámi identity, Indigenous rights, and the roots of Indigeneity inside Norway. Indigeneity, among other things, embraces lasting connections to traditional homelands. For the Sámi, this entailed their ability

and right to live in close proximity to traditional reindeer migration routes and areas as a means to ensure their own survival. However, these ways of connecting were challenged by nationalist ideologies in the Norwegian Parliament, ideologies that were in turn implemented through government policies in a process known as *Fornorsking* or Norwegianization. This chapter will discuss the impacts of Norwegianization policies and programs in regard to language and education, religion, and land rights among the Sámi. The following chapter takes up the account of the Alta Dam Controversy, which marked a turning point in Sámi efforts toward self-determination and the assertion of cultural rights and represented a major shift in relations with Sámi reindeer herders and the Norwegian government.

Norwegian National Identity

Although Norway as a state came into being only in 1905, the people of Norway have long held a separate and unique identity. Norwegian identity factors rely heavily on Norwegian sagas that focus on their history as warriors and conquerors. Many Norwegian sagas reveal that Norway had its own identity as a nation in earlier periods such as during the time of the Vikings and the Middle Ages. The Norwegian Kingdom was always small in population, but strong in terms of unifying the Norwegian people and retaining some semblance of sovereignty throughout its history. However, Norway lacked the capacity, military strength, or opportunity to become “fully” or officially independent until 1905.

Much of Norwegian identity is impacted by their past experience of being ruled or influenced by Danish or Swedish Kingdoms in nearly every aspect of their livelihood. The people of Norway have always identified themselves as Norwegians throughout their history, which increased in development during the nineteenth century. The modern Arctic states or

Scandinavia (Nordic countries and Denmark) have a complex history of overlapping and competing sovereignties, and at various periods of time have ruled each other's territory. Under the Danish Monarchy in the fourteenth century, Denmark-Norway, Sweden, and Finland existed as an empire. In 1523, Sweden broke away, creating two separate unions, Denmark-Norway and Sweden. Finland remained an "integral part of the Swedish realm for more than 600 hundred years" until 1809, when Sweden was forced to cede Finland to Russia (Barton 2006; Wheelersburg 2008). The Stromstad Treaty of 1751 among other things defined the border between Norway and Sweden, although Norway did not gain independence from Denmark. The Stromstad Treaty also included an addendum known as the Lapp Codicil (*Lappekodicill*) that is sometimes referred to as the Sámi Magna Carta. In 1814, in the Treaty of Kiel, Norway became part of a "dynastic union with Sweden" until it established full independence in 1905 (Barton 2006).

It should be noted that throughout the changing alliances and ruling kingdoms, Norway always came out as the junior partner. Furthermore, even though Norway shared a land border with Sweden, Denmark was Norway's dominant partner, as will be seen, for example, in the twentieth century post-independence debate in Norway over written language. Despite this, it is thought by some historians that Norway gained rather than lost by the change in governance from one kingdom to another later in the eighteenth and nineteenth centuries (Derry 1957; Bagge 1995). During the nineteenth century, Norway exercised a great deal of local rule: legislatively, policies were implemented, especially in the areas of language and education, that greatly impacted Norway's Indigenous People, the Sámi.

Norwegianization

Henry Minde's (2003) work on *Fornorsking*, or Norwegianization, provides an introduction to larger impacts across Sámi and Kven people. (The Kven are a minority group in Norway who are of Finnish descent.) Norwegianization was an official assimilation policy that Norway implemented to change Indigenous and minority peoples and cultures to become more Norwegian. The goal was to "elevate" Indigenous people from their backward customs and lifeways to those of the dominant Norwegian culture. As one rector, Andreas Gjølme in Sør-Varanger put it in 1886:

'The Lapp people are childlike people in more than one respect. As people, they have the child's impulsive, naïve, undeveloped point of view, and it is the goal of Norwegianization that they are brought to the maturity of man, if this is at all possible, This is an immense and lasting goal to work toward.'" (Khazaleh, 2011, citing Bente Person)

The Norwegianization of the minority peoples of Norway meant to "turn the Sámi and Kven people into reliable Norwegian citizens" (Weinstock 2013). In the case of Kven and Romani (Sámi) people they were removed from parental influence and "implanted into families with more correct lifestyles, or put into boarding schools" (Minde 2004). Although Norwegianization is generally seen as a product of increasing nationalism during roughly the period of the mid-nineteenth to mid-twentieth centuries, Norwegian cultural historian Bente Person has shown that it was also driven by dominant religious beliefs and had a strong partnership with religious institutions (Khazaleh, 2011). In this context, Norwegianization was seen as doing God's work.

With Norway becoming a Welfare State in the twentieth century, Sámi and other non-Norwegians were essentially faced with the dilemma of whether to exchange their ethnic identity for citizenship (Midre 204). Those who wanted to participate in the benefits of a Welfare State were more than likely suppressing their own minority identity to acquire Norwegian identity and skills, which included speaking primarily the Norwegian language.

Norwegianization did not pick up until the nineteenth century when nationalism progressed within Norway and pushed for uniformity and equality across the state. The regulations and legislation behind Norwegianization resulted in loss of identity for some Sámi. It is worth mentioning that Rauna Kuokkanen (2003) said that Sámi were “constructed as an integral part of the state, tightly consolidated and integrated into the nation as any other citizen.” What this means is that the Sámi had equal responsibilities as other Norwegian citizen while being an ethnic minority to show loyalty to the state.

Harald Gaski referred to Norwegianization aimed at the Sámi and Kven as the attempted creation of “White Indians” in Scandinavia. This came about because of government assimilation policies and the failure to include Indigenous Peoples in determining their own future. This was essentially an internal colonization effort that existed within Norway due to their being ruled by Denmark in a colonial relationship. It created the expectation that Norway would exert similar colonial attitudes toward the Sámi, thereby reinforcing its superior position.

Norwegianization came to an end with the rise of the Sámi movement for self-determination arising out of the Alta Dam Controversy in the 1980s (discussed below). In 1997, King Harald V formally apologized for Norwegianization:

The state of Norway was founded on the territory of two peoples - the Sámi people and the Norwegians. Sámi history is closely intertwined with Norwegian history. Today, we express our regret on behalf of the state for the injustice committed against the Sámi people through its harsh policy of Norwegianization. (Tribune News Services 1997)

In the following sections, four key aspects of Norwegian policy are discussed: religion, language, education, and land rights.

Religion and Norwegianization

In a landmark study on the role of the church in Norwegianization, Person (2015) asserted that it was the church, and not the state, that directed the Norwegianization process, and even though the overall authority of the church declined during the rise of Norwegian nationalism, its role in Norwegianization of the Sámi did not. She notes that Norwegianization meant not only repression of Sámi language but repression of Sámi religion. As she puts it, “The church supervised the Sámis. They controlled how often the Sámis went to church, they counted the number of communicants and people who took communion. Even ‘the main solution to the Sámi problem’ has been building state boarding homes.” The myth underlying the church’s drive to civilize and Norwegianize the Sámi, according to Person, was that the Sámi were savages who were possessed by the devil; for example, missionaries at one time prohibited Sámi women from wearing their red hats (ládju) because the missionaries believed that devils lived in the horns of the hats.

As early as the seventeenth century missionary schools were built to increase conversion among Indigenous Sámi. One strategy used by the church was to build a church or chapel in the same location of sacred places and sites (Hansen and Olsen; Aikas and Salmi). The Danish-

Norwegian King, as early as the seventeenth century prioritized missionary and colonization activities. Catholic, Lutheran, and other missionaries were among the Sámi for many years promoting Christianity and the changes in belief and practices that it entailed. Over time churches, with the approval of the crown, coerced Sámi to convert to practices that were not their own. Among the Sámi, there was not one uniform Sámi religion practices, but many. It was naturally assumed by the church that Sámi practices were inferior to Christianity. Any Sámis who considered themselves to be Shamans or healers could be sentenced to death (Kuokkanen 2011). Their sacred drums or other items were typically destroyed and burned to keep the Sámi from “reversing” missionary teachings.

Among other activities, Christian missionary work prepared young Sámi men for the priesthood. Passages from the Old Testament were primarily written in the Sámi language to encourage young Sámi to join the priesthood so that they could go home and teach their families (Meriot 1984). The idea was to train the Sámi, in their own language, to assist missionaries in Sámi territory. The priests trained at missionary schools were of Sámi descent and were expected to teach Christianity to the Sámi people, in their own language. Schools were built and textbooks were written in Sámi to make this the focus. Many Sámi people were converted to Christianity, although in many ways these were coerced conversions to some degree. The church’s function also was to train Norwegian teachers, who could thus assimilate the Sámi population into the dominant Norwegian culture (Zachariassen 2008; Minde 2003) which meant abandoning the traditional Sámi migratory lifestyle.

Language Policy

Norway's written language has been a source of an ongoing, and sometimes intense, conflict since the rise of Norwegian nationalism and especially since independence. Beyond issues of national pride, there are conflicts and periodic "reforms" over regional variations (especially east versus west), urban versus rural, elite versus common usage, and many others. There is even disagreement on what the conflict should be named (*målstriden*, *språkstriden*, or *sprogstriden*). Language use in Norway has reinforced identity and represented a set of social relations that reflected power relationships (Bucken-Knapp 2003). For example, language was a defining criterion of the nation, of being considered Norwegian, and it was used as a strategy to employ policies toward minorities. While large volumes of debate, discussion, and legislation have been produced on the topic, the assumption from the outset was that there should be one, and only one, national language, leaving minority languages spoken by the Sámi and Kven by the wayside.

Danish was the official language of Norway during the period of the United Kingdoms of Denmark and Norway (Denmark-Norway), 1536-1814. Even after 1814, when Norway was joined with Sweden, Dano-Norwegian was the written language of government and the upper class. With the rise of Norwegian nationalism in the mid-1800s, efforts were made to create a more "Norwegian" language. From these efforts were born riksmål ("state language), which derived primarily from Dano-Norwegian, and landsmål (country language), which relied more on Norwegian dialects and excluded from Danish and related words. In order to settle the dispute the Language Equality Law (1907) was established which put both Dano-Norwegian (essentially riksmål or bokmål) and Nynorsk (landsmål) on equal footing. The Equality Law was "the basis for all subsequent language policy dealing with the status of the two standards" (Bucken-Knapp

2003). It also mandated that secondary school students upon graduation be able to write an essay in Nynorsk. This did not settle the language issue across political parties, however. It rather intensified the work of developing a Norwegian language that reflected the identity of the people. In 1929, riksmål became known as bokmål (“book language”) and landsmål became known as nynorsk (“new Norwegian”).

Much recent debate has surrounded bokmål and nynorsk. These debates also deeply involve politics. Bucken-Knapp, In *Elites, Language, and the Politics of Identity* (2003), notes that language was a tool used by elites to wage political battle. A common language ideology was used to solidify a common unity among Norway. However, the battle over which dialect would be spoken in schools and everyday use was one waged between the liberals and conservatives, where the liberals’ concerns were to introduce Nynorsk which was the New Norwegian. The language debate was really about new and old Norway and this distinction brought out differences in elite and minority classes.

Today there exist two official versions of written Norwegian language: bokmål and nynorsk. Bokmål is the dominant standard language that is derived from Danish and is widely used in urban areas, while nynorsk is the minority standard language constructed out of rural western dialects. (A third official language, samnorsk, an attempt to merge bokmål and nynorsk, was officially abandoned in 2002). The complexity of the language debate is reflected in Figure 1, a current map of official language forms for each Norwegian municipality.

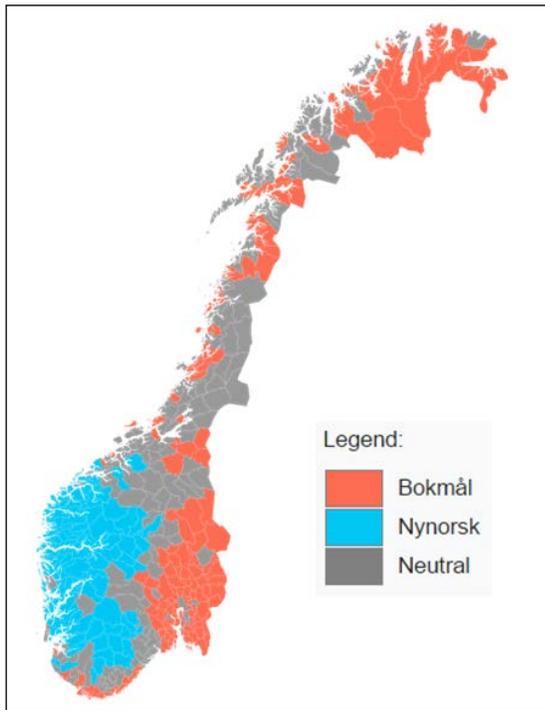


Figure 6. Map of official language forms for Norwegian municipalities, 2011. Source: Wikimedia Commons, https://commons.wikimedia.org/wiki/File:M%C3%A5lformer_i_Norge.svg

Norwegianization literally heightened the loss of instruction of Sámi language and teachers. This policy was directed at the Sámi to coerce them into becoming integrated and blend into Norwegian mainstream society. The Sámi language is divided into a number of dialects (Gaski 1997), and giving up their language to speak only Norwegian meant giving up a piece of their identity to Norway. They were discouraged from speaking Sámi in their own regions, schools, and homes. For business and interactions with the government, Norwegian was the only permitted language. And, although there were religious texts translated into Sámi, the people were pushed to speak the dominant language for religious purposes.

The Sámi and Kven saw these changes in language as assimilationist tools to alter their ways of life intended to create a path into the dominant society. In interviews with Sámi elders, Minde (2003) found that the elders most discussed the powerlessness of their bodies and culture

that resulted from the coercion of speaking a language not their own. They also felt shame due to the forced attendance in Norwegian schools. The boarding school experience, as explained by the Sámi elders, did not allow Sámi students to speak their language (as also happened in the U.S., reinforcing the goals of Norwegianization. Today, however, both Sámi and Kven finally have both been recognized as official languages in Norway.

Education

Norwegianization required that teaching districts implement Norwegian language and education policies. A few of the changes that took place were in spelling of the Norwegian language which was promoted through officially sanctioned spelling lists and textbooks. Official regulation of curricula and teaching plans applied to the whole country. Schools were “screened” from parental influence, which meant taking parental influence away from the children. The objective was to instill those facts, insights, and attitudes that Norwegian society wanted non-Norwegians to carry and have. This eventually led to a decline in Sámi identifying as Sámi and acceptance of Norwegian citizenship. No alternatives or options made available for Sámi to keep aspects of their cultural identity. For reindeer Sámi, it was especially difficult to be reindeer Sámi and retain herding as a tradition because with the implementation of these policies their way of livelihood was seen as dying past.

Of course, these regulations and legislation had significant impacts on Sámi culture and identity. The implementation of these objectives was achieved by setting aside lump sums of funds to bring about change in Sámi areas. In 1851, a “Lapp Fund”, had already been initiated by missionary schools to deal with what Gaski (1993) has called the “White Indian” (Gaski 1993) problem. This comparison with the “Indian Problem” of in the United States is in regard to

government policy toward culture, language, and livelihood of American Indians. Over a hundred-year period, a number of assimilationist policies were implemented to deal with the Indigenous peoples of North America.

Somewhat similar to the Native experience in North America, the Sámi experience was that of boarding schools where children were removed from their homes to participate in educational institutions not of their making. The impact of attending these schools for Sámi was that it was not a system developed by them nor taught by their own people. As mentioned earlier, Norway implemented educational policies targeted at every citizen within its borders to attend public school system. Sámi children who resided in remote areas were required to attend these schools, which had the effect of alienation, of suppressing cultural practices. Rauno Kaukkanen (2011) focused on the fact that Sámi integration was more individualized rather than a centralized institution. One of the education goals was to “settle” the Sámi as farmers, speaking fluent Norwegian (Wheelsburg, 2005). The impacts of implementing Norwegian education and language policies at the national level took a toll on Sámi reindeer herders at the local level. The *sii'da* social system, for instance, started to break apart into smaller units. Reindeer herding, migration, and land issues, even resource management eventually became a concern of the Norwegian Parliament. These concerns were addressed through policy and legislation.

The impact on reindeer herding Sámi was critical during these changes due to the level of requirement or obligations to reindeer herds. Reindeer herder educational needs had generally been met through the experience of being with their herds and herder families. For instance, the purpose of my field experience was to gather insights into reindeer herding techniques. In my little time spent with a reindeer herding family I was able to see how the knowledge of reindeer herding, environment, and language were critically important.

Land Policies

In *Seeing Like a State*, Scott (1998) notes that states have an inherent suspicion and distrust of “people who move around,” i.e., migrant, nomadic, and semi-nomadic people, among others. In consequence, states often implement policies to settle people more or less permanently on the land to give them fixed geographical locations, thereby enabling states to more easily monitor, tax, and control these “troublesome” populations. In the U.S., a key part of the solution to the “Indian Problem” in the mid- to late-nineteenth century was confining tribes to reservations with fixed boundaries, sometimes under threat of death, and allotting individual parcels of tribal land to individuals in the hope of making them “yeoman farmers.”

In contrast to U.S. policy, the Lapp Codicil to the Stromstad Treaty in 1751 explicitly recognized the migratory rights of the Sámi. As laid out in the Codicil, “The Sámi need the land of both states. Therefore, they shall, in accordance with tradition, be permitted both in autumn and spring to move their reindeer herds across the border into the other state.” (Cited in Hough 2013, p.72) This supplemental agreement between Denmark-Norway and Sweden was important to the formation of northern Norway because it created the first political borders across Sápmi territory and settled disputes between the agreeing partners. The document defined borders in three ways. First, it settled disputes over Sápmi territory. Second, it acknowledged the customary traditions of reindeer migrations of the Sámi. Third, it protected the rights to use the pasture areas necessary for migration (Ahren 2004). Although this document remains a vital turning point in Sámi history, it nevertheless constituted a colonization method in that it forced the concept of land ownership on the Sámi and led to assimilation policies into the nineteenth century that helped shape their territory. A large part of this had to do with settling reindeer herders into a farming agriculture lifestyle as was being done with Native peoples in the U.S.

Also, as Hough (2013) points out, the Lapp Codicil forced the Sámi to become either Danish-Norwegian or Swedish citizens, depending on their location.

A few of these effects have been documented by Ole Henrik Magga (2006) who said, “Saami culture bears evidence, intimate relationship with the Arctic environment...” Norwegianization disconnected these intimate relationships. These intimate relationships are built around the need to identify and describe animals for herding purposes, for instance. Prior to the contemporary changes of education and language certain other strategies had already been employed. Such as the Lapp Law which broadly regulated Sámi cross-bordering reindeer migrations and the dividing of reindeer districts and grazing times were defined (Koch 2011). The change in the education and language policy was another strategy to embrace Norwegian nationalism.

Despite the apparently far-seeing signing and implementation of the Lapp Codicil, for the Norwegian state, and especially for settlers and those who wanted to develop Norway’s rich natural resources, Sápmi was seen as going to waste because it was unused or under-used. This made it ripe for increasing encroachment by these interests and for the development of tensions between the “progressive,” nationalist view of modern development and the traditional reindeer herding and hunting and fishing practices of the Sámi, tensions that came to a head with the Alta Dam controversy.

Chapter 4. The Alta Dam Controversy and the Rise of the Movement for Sámi Rights

Endowed with an abundance of natural and human resources, Norway has always had outsized wealth and economic influence compared to its relatively small land area or population numbers. Perhaps three major industries have characterized the Norwegian economy: sea power and merchant shipping, hydropower, and North Sea oil. Merchant shipping and massive oil resources have driven export income, while hydropower has provided the vast bulk of Norway's internal energy resources and driving its internal development while providing surplus energy to export. Over 95% of Norway's electricity comes from hydropower generated by damming streams and rivers. However, hydropower development has also created a source of friction between the Sámi and the Norwegian government.

Norway, geographically, is surrounded by large bodies of water such as the Norwegian, Baltic, and Barents Seas, and includes over 150,000 lakes and rivers internally which make up 5% of the country's total land area. The relatively steep drop in elevation between interior and coastal areas offers numerous potential sites for damming rivers to generate electricity. Beginning in the nineteenth century, hydropower began to drive the industrialization of Norway. Dependency on hydroelectric resources increased in Norway's economy during its post- WWII rebuilding, and state control over renewable resources was seen as the primary way for Norway to gain control of its economy. By 1948, Norway recorded the highest per capita production of electricity in the world (Mutton 1953) and remains the leader in renewable energy resources across Europe today. In fact, hydropower has been described as Norway's "family silver" (Engesland, 2015).

There was a growing purchase of waterfalls (hydroelectric sites) and control of natural resources by both the state and private sectors. Hydropower stations were constructed as far north as Hammerfest and eventually reaching down to Oslo in southern Norway. Today the Norwegian State Energy Agency, Statkraft, runs 237 hydropower plants in Norway alone, in addition to over 100 more outside Norway.

In Jokkmokk, in the Sámi core area along the Lule River, 14 separate dams were constructed from 1910 to 1970. For reindeer herders, the construction of dams did not take into consideration the fact that the “reindeer cycle was unalterable” (Svensson 1987). This happened with the Alta Dam controversy, where the government approved construction without considering an environmental impact assessment and failed to recognize that the Sámi already had usufruct rights to the land based on immemorial usage for reindeer herding, hunting, and other traditional uses.

The Alta Dam Project

Proponents of hydropower developments, included the Norwegian Water Resources and Energy Administration (NVE), a Norwegian government agency, began drawing up plans for a hydropower dam on the Alta River as early as the 1960s. Promoted by local Norwegian government officials, damming the Alta river valley was a political goal to be achieved, and the Norwegian Parliament confirmed the final decision to dam the river in 1981 (Briggs 2006). Local voices including the Sámi were not included because of the prevailing view that authority and decision-making power rested with the national authorities (Broderstad 2011). The newly formed Norwegian Sámi Council (1964), consisting of members appointed by the state, also voted in favor of the Alta Dam project. Not surprisingly, this newly formed Sámi organization

aligned itself carefully with the Norwegian authorities. This made the approval process easier because the “Sámi problem” was seen by the government as having already long been resolved.

However, these decisions were met with opposition by Sámi organizations that raised both environmental and legal concerns and made the Alta dam a focal point of protests on the rights of Indigenous peoples. In addition, since the construction of hydroelectric power plants requires building roads, moving large volumes of earth and pouring massive amounts of concrete, and construction of power lines, there were going to be significant environmental impacts, and numerous environmental rights activists joined the Sámi in their protests. At one point over 1,000 protestors chained themselves together at the dam site until they were arrested by police.

Ultimately, under the jurisdiction of the Norwegian power development utility, the Alta Dam was allowed to be completed, and it opened in 1987. The Alta Dam, technically known as the Virdnejavr Dam, is 145 m high (the tallest in Norway) and is located 40 kilometers (25 miles) from the mouth of the Alta River on the Alta-Kautokeino River in Finnmark County in far northern Norway. The Alta hydroelectric power station generates 150 megawatts of electricity from two generators (Figure 2). The overall impacts on the Sámi were significant because, among other things, it required displacing one of the last traditional reindeer migration routes that included Máze village. Máze was made up of approximately 400 residents and the area around the Alta River and Kautokeino (Guovdageaidnu) was one of the last remaining areas of reindeer pastoralism (Minde 2003; Briggs 2006). The view of NVE and Norwegian officials, however, was that the area was considered unused. Valuable pasture and migration routes were flooded, ultimately destroying the land for other uses.



Figure 7. Alta dam and reservoir. Source:
https://en.wikipedia.org/wiki/Alta_Hydroelectric_Power_Station#/media/File:Altakraftverket,_Norge.jpg

Local stakeholder involvement was not considered at the time of the development of the plans, and assessments gave little consideration to the cultural impacts (Briggs 2006). The

Norwegian Supreme Court requested that a report be conducted on the consequences of the project on the lives and culture of the Sámi; however, the assessment was conducted after the construction project was completed. Chad Briggs (2006) conducted extensive background research into the NVE, which ultimately pointed out that consideration of Indigenous lifeways and cultural practices were of little importance to economic development. By reducing numbers of actual reindeer within the area (from 30,000 to 21), at the time of environmental assessment, the use of the area as a migration route was “downplayed.” In other words, there existed little understanding and consideration of the traditional lifeways of Indigenous Peoples.

Sámi Reaction and Norwegian Government Response

Decision making on hydropower and other large-scale projects often excluded local populations from being able to take a more assertive and active approach in Norway’s development. The Alta Dam gave rise to a major political movement that attracted attention to local and community voices concerning their view and rights to be included in the decision-making process. As such, it marked a turning point in Sámi efforts to assert their indigenous identity and sovereignty.

As noted above, the Sámi and a coalition of environmental organizations opposed the decision, and protests were carried out against the construction project. For the Sámi, it was ultimately about the right to identity and their rights as Indigenous Peoples, and they voiced their concerns about being systemically excluded from decisions affecting them. In addition to protests at the dam site, the Sámi protested by hunger strikes and by setting up a lavvu tent outside the Norwegian Storting (parliament) building in Oslo (Figure 2). (A lavvu is a tent traditionally used by the Sámi during their reindeer migrations that is somewhat similar in

appearance to a North American Northern Plains tipi, but is lower in structure.) Beyond the specific issue of the Alta Dam, these strikes and strategies challenged the “old” assimilation policies against the Sámi. The hunger strike involved seven Sámis for one week that garnered the attention of the Norwegian government, ultimately resulting in the establishment of the Sámi Rights Commission.



Figure 8. Sámi protesters in front of a lavvu at the Norwegian Storting, demonstrating against the Alta Dam project. Source: <http://serendipitybyanethnologist-helena.blogspot.com/2012/06/>

Minde (2003) made the important point that prior to the Alta affair “none of the Nordic states treated the Sámi as a people affected by the conventions of international law.... The Norwegian government viewed the Sámi as fully integrated into the community” (p. 87). Media attention both within and beyond Norway broadened the reach of Sámi efforts to protect their

cultural and traditions. This in turn linked the larger Indigenous Peoples movement to the Sámi which had significant importance at the international level and also in driving Norway's response to the Sámi as Indigenous People and as an ethnic minority. For the Sámi, it altered the Norwegian political agenda toward them (Minde 2003).

Norway responded by beginning to build relationships with the Sámi by supporting Sámi organizations at the state level. One of the major outcomes of the Alta Controversy was the establishment of an elected Sámi Parliament. The Norwegian Sámi Council, established in 1964, had been put forward as a broad based Sámi political organization, but its members were appointed by Norwegian state authorities. After meetings in 1980-81 with a number of Sámi organizations, including the Norwegian Sámi Council, a Sámi Rights Committee was established, which in turn recommended the establishment of an elected Sámi Parliament. The Sámi Parliament was authorized by the Norwegian Parliament in 1987 (The Sámi Act) and first convened in 1989. According to the Sámi act, its purpose was "to enable the Saami people in Norway to safeguard and develop their language, culture and way of life," and "The business of the Saami Parliament is any matter that in the view of the Parliament particularly affects the Sámi people." (Josefsen, 2010, p.9)

Even though Norway had participated in and ratified the United Nations Covenant on Civil and Political Rights (1972) and the International Covenant on Economic, and Social and Cultural Rights (1972), the Alta affair forced Norway to address the issue of the rights of the Sámi as Indigenous people (Minde 2003). The Sámi Parliament was established in 1989 during this time to promote and protect the interests of the Sámi. Indigenous peoples were the focus of greater international movement that "...Scandinavian countries were among those who desired to

become advocates...” (Gaski 1997; p.31). It was a time of Sámi movement and finding a renewed Sámi self-understanding within the nation-state where they resided (Gaski 1997).

Other results included the introduction (or reintroduction) of Sámi education and language into those primary areas of Sámi residence, mostly in the northern part of Norway. Sámi language is now formally protected in the Norwegian constitution, and language is being employed as a key means of strengthening the Sámi education system. Moreover, language is a key marker for claiming Sámi ancestry to be able to vote in Sámi elections – if your parent or grandparent was primarily a fluent Sámi speaker then you are allowed to vote. In other words, language has become a determining factor in who is and not Sámi. Economic standards also increased for the Sámi, including funding for Sámi initiatives by the state (Gaski 1997). In addition, the number of people self-identifying as Sámi increased, and Sámi rights movements were recognized within Norway.

Ongoing Challenges to Sámi Indigenous Identity and Sovereignty

Despite the substantial gains made by the Sámi in asserting a right to maintain their identity and exercise a degree of sovereignty, a number of ongoing challenges remain. I discuss these briefly below under the following headings: (1) The Sámi people and Indigenous identity, (2) Sovereignty and decision-making power, and (3) Territory and land issues.

The Sámi people and Indigenous identity

The actions of the Sámi in asserting their Indigenous rights can be viewed in the context of the larger pan-Indianism movement launched by Native Americans in the United States to found new Indigenous rights organizations and to strengthen unity within and among tribes. The idea of “one people” across the globe drew from the ideas of these political Indigenous

movements. These movements were defined by a renewal of tribal identity and voicing recognition of tribal and Indigenous rights to self-government. As part of their efforts to strengthen their position as Indigenous people, Sámi representatives travelled to visit other organizations of Indigenous peoples to exchange ideas and support their efforts. At one international meeting in particular, the Sámi representatives initially faced unexpected questions from other Indigenous conference participants challenging their Indigeneity. The questions apparently arose from prevalent ideas that the Sámi are not noticeably different in physical appearance (Figure 3) from their fellow non-Sámi Norwegian citizens and that they are considered by some to be fully assimilated into mainstream Norwegian culture and society.



Figure 9. Sámi family in traditional dress, Kautokeino, Norway. Source: <https://www.pinterest.com/pin/454863631090032554/> PA Garlsen

Although the Sámi are now generally recognized both in Norway and in the international Indigenous community as Indigenous people, the questioning of their Indigeneity was an uncomfortable reminder not only of the debates over who counts as Indigenous but that the Sámi

were not automatically regarded as Indigenous, even though by any reasonable measure, they clearly are. As Gaski (1993) put it, the Sámi have always demonstrated they are an Indigenous people “in [their] cultural and educational policies... [making]...conscious effort to retain links to traditional values, while shaping a new future.” And Barker (2015) also notes, the desire for self-determination is the foundation of Indigenous identity and “is a core concept of international customary and treaty law that affirms Indigenous Peoples...rights conventionally associated with statehood to the sovereignty of governance, territorial integrity, and cultural autonomy.”

After WWII, the concept of the Sámi as “one people” was developed and progressively pursued (Semb 2005) as a collective group identity. As discussed earlier, the Sámi have settled in wide areas of Norway and across Scandinavia; it was hoped that the “one people” would define the collective organization of the Sámi across nation-state borders. In 1968, for example, the National Association of Norwegian Sámi (NSR) worked to improve all aspects of Sámi livelihoods by organizing and structuring their efforts to be included at the same time the Alta dam controversy occurred. However, although there has been a desire to unite all Sámi people under a unified set of goals, tensions continue to exist between reindeer herders and urban, “progressive” Sámi. Often, non-reindeer herding progressive Sámi were majority members of the Norwegian Sámi Council, for example. And, as Harald Gaski (1997) has noted of the progressive Sámi, “some of them [Sámi] who have become the most eager advocates [of assimilation]...are themselves the products of the school system they call assimilative” (p. 19).

Sovereignty and decision-making power

Unlike many national governments, Norway's government has generally supported or sympathized with its Indigenous populations (although its *Fornorsking* assimilation policy was a misguided but obvious exception). The Lapp codicil in 1751 enshrined Sámi rights to herd reindeer across borders, and as noted earlier, in 1989 a Sámi Parliament was established in Norway to work on matters involving Sámi language, culture, and community, which included the setting of their own research agendas. As Neizen (2009) points out, this parliament "has greater autonomy than those of Finland and Sweden... funded by the state budget, it is free to set priorities, take initiatives, and pursue its own decision making in particular cases" (p.173). Interestingly, during the 1970s Norway placed an immigration ban on people from developing countries entering Norway. Gullestad (2002) says this may ironically have had a positive impact on the treatment of Sámi as Indigenous at the time of the Alta Dam controversy.

Nevertheless, the Sámi, like many indigenous peoples have a limited sovereignty at best. The United Nations Declaration on the Rights of Indigenous Peoples (2007) states that "Indigenous peoples have the right to self-determination. By virtue of that right they freely determine their political status and freely pursue economic, social and cultural development." For almost all Indigenous peoples, these rights continue to be a source of political conflict within the states in which they reside; for the Sámi in Norway it has meant a struggle to be included in all decisions that impact them directly.

Territory and land issues

According to Agnew, et al. (2003) territoriality may be viewed "as social processes in which social space and social action are inseparable" and that territories "are always manifestations of power relations" (Agnew, et.al. p. 110-111). Scott Forrest (1998) has stated

that Sámi territoriality is defined “by collective organization, seasonal migration, and flexible and adaptive land use,” primarily defined by reindeer herding practices.

The Lapp Codicil of 1751 and the Reindeer Herding Acts of 1978 and 2007 are considered key pieces to constructing the idea of territory among the Sámi. The role of reindeer herding in identifying Sámi territoriality is found in the 1751 Lapp Codicil, an addendum to the Stromstad Treaty (noted earlier) that defined the Norwegian-Swedish border. The Lapp Codicil formalized the rights of the Sámi to continue with their traditional migration routes across the borders of Norway and Sweden. The states agreed to protect the “future reindeer herding for the Sámi people...regardless of state borders, the reindeer herding Sámi should be able to continue to migrate with their reindeer to the other kingdom in the same way as they had done before the border demarcation (<http://reindeerherding.org/herders/Sámi-sweden/>). The Reindeer Herding Act of 1978 regulated contemporary reindeer herding practices, which included holding reindeer owners accountable for damage to farmers caused by reindeer, i.e. legal cases could be brought against a reindeer owner for damage to land and crops during the migration period.

On the ground, however, I found that Sámi “territory” was “fenced” and limited during my reindeer herding experience. While in the larger contextual sense there existed a sense of Sámi territory, it was also a bounded one –fenced – to define the bounded space of the actual migration from inland to the coast. Figure 4, a map of Sápmi, Sámi and Reindeer Herding in Fenno-Scandia, is a typical representation of the distribution of Sámi-speaking peoples and their reindeer herding activities. Because of the nature of the cartographic method employed – whole areas filled in by color (choropleth mapping) – the unfortunate impression is left that the colored areas represent “Sámi territory.” In fact, land that can be called Sámi territory is substantially smaller and much less permanent. In addition to residences and relatively small pasture areas that

are more or less permanent, reindeer migration routes essentially become the temporary usufruct territory of Sámi reindeer herders during their annual migrations. Thus the land area occupied by the Sámi is much smaller than the Sámi areas mapped in Figure 4.

In the same vein, reindeer herding is highly regulated through the Norwegian Ministry of Agriculture that is also responsible for diminishing pasture areas and regulating seasonal migrations. Pasture areas are an important resource to reindeer management and having adequate “space” for reindeer to migrate and feed is critical to the ongoing viability of reindeer herding as a way of life. The connections between land use and reindeer herding and migration use is key to further understanding the current changes and challenges herders face in the Arctic.

Sápmi, Sami and reindeer herding.

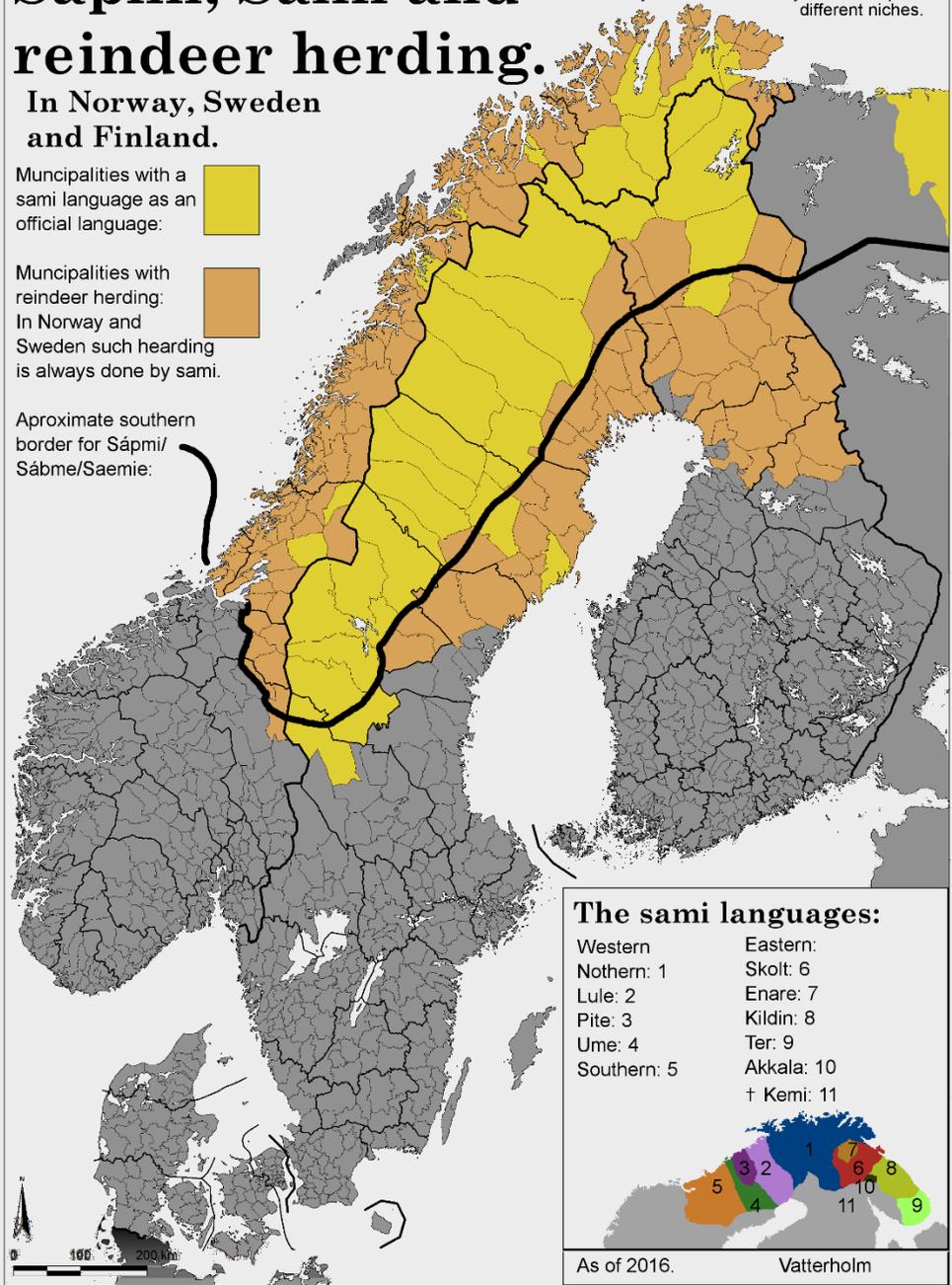
In Norway, Sweden and Finland.

Note: Being in sápmi does not mean other Uralic or Germanic cultures doesn't have a history there as well. They often occupied different niches.

Municipalities with a sami language as an official language: 

Municipalities with reindeer herding: In Norway and Sweden such herding is always done by sami. 

Aproximate southern border for Sápmi/ Sábme/Saemie: 



The sami languages:

- | | |
|-------------|------------|
| Western | Eastern: |
| Northern: 1 | Skolt: 6 |
| Lule: 2 | Enare: 7 |
| Pite: 3 | Kildin: 8 |
| Ume: 4 | Ter: 9 |
| Southern: 5 | Akkala: 10 |
| | + Kemi: 11 |

As of 2016. Vatterholm

Figure 10. Map of approximate area of Sápmi territory in Norway, Sweden, and Finland (thick black line). Also shows municipalities where Sámi language is spoken (yellow) and where reindeer herding is practiced (orange). Source: Vatterholm, 2016.

Chapter 5. Observations from the Field

In 2010, I boarded a flight to attend my first international conference, the International Polar Year, Oslo Science Conference, where I met reindeer herders from several Arctic regions. My participation at the conference led to an invitation to accompany a reindeer spring migration the following year across the Norwegian Arctic tundra where the Earth's coldest and harshest biomes exist. Thus, in 2011 I participated in a spring reindeer migration starting in Kautokeino and ending at the west coast of Norway. Kautokeino (Norwegian) or Guovdageaidnu (Northern Sámi) has a population of approximately 2,931 and is located in Finnmark County in far northern Norway (Figure 1). Finnmark is the largest municipality by area in Norway with over 10,000 lakes and where the sun does not set for five weeks during the summer. There are 15 smaller villages within the municipality. Kautokeino is considered the cultural, educational, and research center for reindeer herding and is the home of a leading university for Sámi studies. It is known as the most traditional area of reindeer migrations.

When I visited, I stayed in the smaller village (although “no one calls them villages anymore” (Reindeer Herder 7, personal communication, April 2011) of Avzi, 6 miles east of Kautokeino during the springtime when herders prepare for their migrations. I stayed with a host family, one of the largest reindeer herders/owners in the region, getting familiar with the area and the landscape. I joined this family for their annual spring migration from their inland winter pastures to their summer island pastures for calving. My arrival was one day earlier than expected and during that time I witnessed the northern lights above me and a landscape that was noticeably clear and filled with thawing snow. It was at this moment that it became clear that one of the most traditional livelihoods of the Arctic is being challenged by several external factors, one of the chief ones of which is climate change.

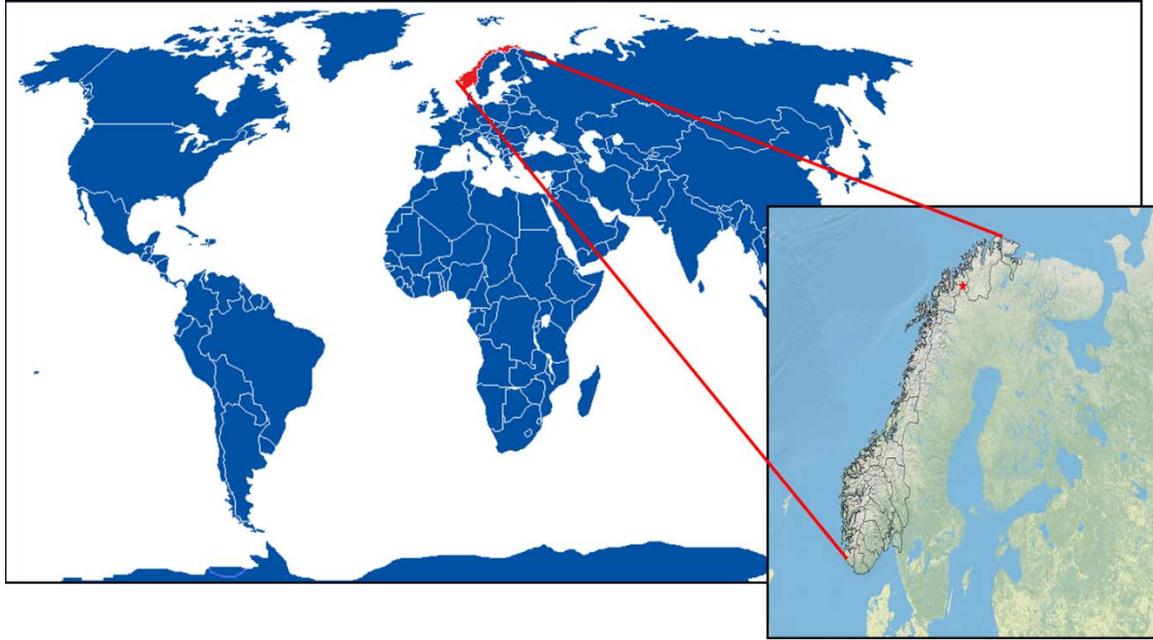


Figure 11. Location map of Norway, Finnmark County, and Kautokeino, the starting point of the reindeer migration. (Map by author.)

Preparations and Background

I spent approximately two weeks with my host family becoming familiar not only with reindeer herding practices and with the technology they employed but also with the Traditional Knowledge (TK) involved in Sámi reindeer herding.

Lavvu Dialogues and Traditional Knowledge

On my arrival, my first lessons took place while attending a Traditional Knowledge workshop to gain a better understanding of the background of the Sámi Institute and the challenges the Sámi face in a changing environment. The workshop was about standardizing the traditional knowledge of “learning by herding” which is a “catch all phrase” encapsulating the Traditional Knowledge (TK) and Traditional Ecological Knowledge (TEK) involved in reindeer herding. In many ways, the knowledge workshop provided presentations around sustainability and who has ownerships of their ways of doing and learning. I was able to participate in a

classroom discussion where herders across the Arctic came together to address the links between herding knowledge and the academy. Student participants were asked to address what traditional knowledge meant to them and what the academy was going to offer them using traditional knowledge. The same day was the also the opening of the UArctic Institute focusing on bridging knowledge production related to reindeer traditional knowledge and land use change.

“Learning by herding” represents the means of passing along Sámi knowledge, and is to be found in areas such as reindeer herding, reindeer research, and how they are related to the larger context of socio-political changes. One of the key aspects of this participation is the collaborations between other reindeer communities across the Arctic in what are called lavvu dialogues. At the conference it could be observed that very few herders participated in the formal discussions; rather they participated in the lavvu dialogues outside the institution itself.

The concept of the lavvu dialogue in everyday use refers to a dialogue among herders that serves as a means to generate innovative ideas to continue the passing along of generational knowledge. It is a time and space where herders can discuss past and current strategies to moving large herds across the landscape. A lavvu is a temporary dwelling used by the Sámi, a secure and stable structure anchored to the ground to be able endure the winds of the tundra. It is a design that is centuries old and one that can be easily set up. They are still used as a resting place for herders to sleep overnight, if necessary. A lavvu discussion can occur anywhere.

I entered my first lavvu dialogue during my second week and found myself surrounded by approximately 15 herders from across the Arctic, alongside academics, scientists, and policy-makers, listening to the current challenges the herders were facing. In the lavvu, cedar and wood burned while everyone feasted on reindeer stew prepared by a Sámi woman. There were translators present so that everyone would be included. Being the only non-herder, American,

and Native American present, and speaking only English, I was sometimes left behind in the dialogue. (I discovered many herders' knowledge consisted in part of knowing more than only their "home" language.) According to my translator, this lavvu discussion was around seasons, ice and snow, grazing conditions, and moving about from one pasture area to another.

Language and the Environment

The Arctic Indigenous Peoples have developed unique languages that are highly adapted to understanding and communicating about the Arctic environment and its changes. In Sápmi, 90% of people use Sámi language as their primary language (Eira 2012; Herder 1, personal communication, April 2011). The Sámi have an intimate relationship with their environment, therefore specialized vocabularies for reindeer, snow, ice, and other aspects of the environment have evolved to meet their needs. Ole Henrik Magga (2006), a Sámi Professor and reindeer herder, in his work on snow terminology outlines words that have the same base but add different endings, making the words have multiple meanings. This is similar to the work of Igor Krupnik, an anthropologist at the Smithsonian Arctic Studies Center in Washington, who documented specialized vocabularies with the Inuit and Yupik dialects.

In another study on snow terminology, Inger Marie Gaup Eira (2012) conducted an in-depth study on two ways of knowing, which became clear to me during the reindeer migration, i.e., the "physical snow classification compared with Sámi snow terminology." Knowing these terminologies, in which I had no prior background, clearly was important to Sámi herders for understanding environmental conditions (especially including the weather), knowing the owner's herd, and moving from one pasture area to another. It is a system of language and communication that is taught by tradition and experience, and that also has recently incorporated Western ways of knowing. In my own personal notes, I found myself reflecting on the

importance of language and how it is almost a necessity to understand how herders and their reindeer movements behave, down to the next move on the migration.

Technological Adaptations

Sámi reindeer herders have been enthusiastic adopters of technology for enhancing their herding operations, and they appear to have seamlessly incorporated them into the traditional knowledge foundations of their livelihood. Reindeer herding today, as in the past, is practiced mostly by men, but now they use snowmobiles, whereas historically skis and dog-sleds were used to move about with reindeer. The modern use of snowmobiles (often colloquially called “Ski-Doos,” after an early snowmobile manufacturer) was introduced in the early 1960s, which substantially changed the life of the reindeer herder. (My first ride was hands-on training where I was jolted from the snowmobile while attempting to navigate unfamiliar terrain.)

Snowmobiles make leaving and returning “home” easier for the herder. They are used in two ways: 1) pulling sleds carrying supplies such as food, tents, and other necessities to sustain the herders and 2) moving the reindeer along the migration. They have become almost a necessity for herding, a heavily relied upon resource. Snowmobiles make it easier to gather reindeer into one valley and move them at a faster pace from either behind or alongside the reindeer. For example, during the migration I saw two herders skillfully use their snowmobiles to climb a mountain and then proceed to chase reindeer down the mountain and back to the herd. At another point during our migration, a snowmobile broke down and we spent several hours waiting for another herder to pass by in order to get it repaired and back onto the tundra. Snowmobile repair and maintenance costs of course are added costs to the herder to be able to keep up with the modern herding of today. Another significant technological change has been the

use of the cell phone for herding, which makes communication among herders much easier, even at great distances. Both technologies have been in use for several decades.

During the preparation period, I also visited the Sámi University and participated in an online project that was aimed at bringing herders into the virtual classroom. The idea was for them to take laptops to the tundra and have reindeer herders participate in their studies. In other words, the goal was to ensure continued access to modern tools such as digital technology.

Pre-Migration Training

We loaded snowmobiles to navigate to one of three measurement points of the Struve Geodetic Arc near the peaks of Luvddiidcohkka and Bealjasvarri in Kautokeino. During this particular training, I was provided with different pasture areas and the direction in which we would move the herd. Here the host herder explained that the “reindeer move about 10 km per hour and we have 140 km to cover and move the herd to their summer pasture” (Herder 3, personal communication, April 2011). While we were watching the landscape the host continued to move the snow and displayed lichens (the primary reindeer food source) beneath the snow. This leafless structure lies on the ground shaped like mosses. The shape of lichens is determined by the fungal filaments and they exist from sea level to high alpine environments and survive in the most extreme of environments in the Arctic tundra. Although the pre-migration training was very helpful, the brief training sessions on learning to operate a snowmobile or getting familiar with the tundra environment did not prepare me for the mental and physical strength herding required.

A reindeer migration in my own words

The most difficult part in writing this experience was where to begin. The entire migration took 10 days and the use of four camps along the way. I have decided to give a camp-

by-camp account of the migration interspersed with my observations on reindeer herding practices.

The reindeer begin to move

Despite the centuries-long relationship between reindeer and their herders, the annual migrations are primarily driven by instinct. In other words, the herds generally move on their own timetable. Most often, the herders would watch their herds carefully to see when the lead male reindeer would begin to move. Due to the constraints of time, i.e., the need to be at certain pasture areas by a certain time, this natural instinct might sometimes be overridden by the herders.

The important knowledge held by herders assisted understanding the day-to-day activities. The days scheduled for the tundra usually consisted mostly of waiting for word from another herder to notify the host family when it was a good time to leave for the tundra. Getting ready in advance was a necessity in order to be prepared when it was time to depart. When my host family was notified “the reindeer were starting to move” (Herder 1, personal communication, April 2011) it was time to pack camping things, such as food, gasoline, camping equipment, and few items to wear aside from the Arctic clothing. I was given proper clothing provided by the family and one of the interesting items was boots made of reindeer hide to keep

my feet from freezing (Figure 2).



Figure 12. Traditional boots made of reindeer skin. Note the turned up toe on the end, originally designed to adapt to skis. (Photo by author.)

These boots are made by the mother of the host family and are very warm because the reindeer hair is an excellent insulator. The toes of the boot curl over, initially to adapt to using skis, but the snowmobile era this no longer necessary. My outer clothing also included a hat made of reindeer, windpants, and a jacket with a pullover made of reindeer skin, and a rope across my shoulder, which I primarily used to keep the windjacket from flying over my field of vision. The host herder was dressed more appropriately for this migration than I. He wore his traditional Sámi outfit, shoes, and a Sámi belt handcrafted by his wife. He carried a knife and rope across the outside of his clothing as tools. We loaded the sled behind the snowmobile and made our way for the first camp.

On my first day on the tundra, aside from the short hands-on training, our group was accompanied on the migration by a Professor at the UArctic Institute for Circumpolar Reindeer Husbandry, a Climate Scientist, and a NASA Senior Research Scientist. We spent several hours talking and listening to herders discuss routes and weather conditions, sometimes in English and most often in the Sámi language. (These colleagues left the migration after a few days on the trail.)

Partly because of the language barrier, I often found myself lagging behind one of the traditional herders from the Kautokeino tundra area I was working with. It was he who could manage nearly 100 reindeer alone if need be while others assisted him if they saw it necessary and if the traditional herder allowed it. Every now and then he would allow me to move the smaller reindeer back into the herd if they would separate from the herd.

Camp 1.

It took two hours by snowmobile to reach the Camp #1 where we arrived before a snowmobile with a lavvu tent and supplies in tow that arrived sometime in the evening. Time seemed to not be a significant factor early in the migration. During our first stop the herder pulled his binoculars out and looked for reindeer, and if any were in sight the herder would point them out. In some areas the snow had melted significantly displaying the bare and rocky land that made for a bumpy ride and difficult to stay on the machine. At one point my snowmobile broke down and we ended up waiting several hours for repairs. Eventually, the maintenance was complete and we took our route to the camp. Near dark the snowmobiles across the land were more noticeable, with numerous headlights or flashlights, and of course the bell sounds coming from the reindeer accompanied the snowmobiles. We came across several reindeer herders

transporting supplies or moving herds. The herders approached each other for coffee and a visit with each other. The herders spoke Sámi, so often I would sit and drink coffee and listen. Every now and then English would be used. The first camp was primarily our first destination to get reacquainted with herding duties.

When I entered the first cabin at Camp #1 I walked into a small one-room structure with approximately six herders and two cots, and equipped with a kitchen and wood stove. When I asked what time do we leave for the herd, the response was “we leave 3am and if you are not up you have to clean the house (cabin)...”

The reindeer were pushed faster on one particular day due to crossing a frozen lake in which only a few of us were needed (Figure 3). Those reindeer that were not able to make the entire migration were tied to a sled and kept until we reached the pasture area. These typically were the young calves (Figure 4). Sometimes, the reindeer that would separate themselves would be considered for slaughtering. We stayed at Camp #1 for approximately five days while moving herds and checking on reindeer. During that time, one herder had said to me “if you get lost look for the poles with string, they all lead somewhere and when a reindeer is falling behind you must drive behind it to make it keep up” (Herder 8, personal communication, April 2011).



Figure 13. Reindeer crossing a frozen lakebed at night by the light of snowmobiles. (Photo by author.)



Figure 14. Young reindeer being tied to a sled towed by a snowmobile. (Photo by author.)

Camp 2.

As we moved to camp #2, it consisted of taking down the tent and moving the herd along to better pasture areas. Along the way, we would stop at a cabin and always have a discussion with other herders. Often, the men would discuss in Sámi and every now and then I was honored with a translation. Most times the topics focused on the condition of the weather and what to be prepared for. There also was constant checking reindeer for predators and keeping them steered in the direction of migration. A young reindeer owner described the killing of one of his deer by a predator “the deer was killed by a predator...that reindeer was a very good one, bit healthy and always made the herd move...it was too nice and probably didn’t know what this predator was and wasn’t scared.” When asked what types of predators posed threats, he said that “the common was lynx, wolf, and golden eagle...which are protected.” In the event a reindeer is killed by a predator it is the herder’s responsibility to report the killing as soon as it occurs in order to get compensated for the loss. The number of reindeer in Northern Finnmark is recorded by yearly reports and tax information provided by the herders.

Camp 3.

Camp 3 was the time we moved the herd during bad weather conditions and it was more favorable to keep the reindeer in better pasture areas to ensure the deer had significant amount of food for the travel. Our arrival at the corral, in the night, had us unloading supplemental fodder, called “candy” by the herders, for the reindeer where we walked around and spread this nutritious food for the reindeer. Supplementary food has become a regular practice among herders. Herders are faced with the deterioration of pastures and increase in intensive land-use practices along with an increase in the size of reindeer herds. In Northern Norway, it appeared

that supplementary food had become as important as natural fodder. You had to have both in some areas. As we spread the fodder, reindeer approached us and immediately took to the supplement (Figure 4).

Camp 4.

The final camp I refer to as my “local learning” reindeer herding experience. This was where we sat and talked outside many days with the herders while the reindeer were allowed to graze much longer than at any other camp site. During this time I was allowed to assist a herder gathering and moving the herd into a valley area so that the herders could keep better watch. As I proceeded, I realized it was difficult to watch and move more than even one reindeer at a time, to say nothing of knowing the ear markings of the owner or the other herders. Paying attention to the behavior of the herd was an important lesson I learned that day, as the reindeer have better knowledge of the landscape they encounter as opposed to my view. I failed to pay attention to a sudden shift in the movement of the reindeer and moments later found myself deeply buried in the snow as I flew off a minor cliff.

Arrival at the coast

After approximately 10 days on the tundra we arrived at the coast. It was the most intense part of the migration for several reasons: 1) the reindeer had to cross a major road, 2) the calves that were tied to the sleds were loaded onto a truck and taken to the fencing area where ear marking and castration took place, and 3) the reindeer were loaded onto a boat to be shipped to their summer pasture on offshore islands. At this point, due to the significant amount of work

needed to be done the herders told me this was the end of my migration experience because the “work” was beginning.

At this point, additional family members arrived, including women and children, to assist with the reindeer crossing a major road (Figure 5). Family members would put up traffic cones to warn vehicle drivers that “reindeer were about to cross the road and needed a bit of time for this to happen” (family member, 2011). As the herders approached nearer you could hear the sound of snowmobiles and reindeer bells. The herders pushed the reindeer across as fast as possible.



Figure 15. Reindeer crossing a highway as they approach the coast. (Photo by author.)

Once the reindeer crossed the highway, the final phases of the migration were carried out. These consisted of (1) gathering the reindeer into an enclosed area, (2) counting the reindeer, (3) earmarking and castration, and (4) loading onto the ferry for transport to summer pasture.

Several family members had arrived a day in advance to construct a tarp fence so that reindeer

would not be able to move away from the herd. The tarp was entirely enclosed and was built next to the loading dock of the boat (Figure 6). This was a lot of work in itself because many reindeer had to be loaded onto the boat. Counting the reindeer at the end of the migration is an important task, both for internal accounting and for reporting to the government. Interestingly, this task is conducted exclusively by women because it is considered taboo for men to count their reindeer (Herder 3).

At the same time that the reindeer in the tarp enclosure are being counted by the women, small groups of reindeer are herded into side pens to be castrated and earmarked by the men. Most of the male reindeer are castrated, while a select few are kept for breeding.



Figure 16. Reindeer in an area enclosed by tarps as they are prepared to be loaded onto a boat for transport to summer pasture. (Photo by author.)

Ear marking is important for herders to distinguish their reindeer from those of other herders. Each reindeer is registered to a reindeer herder by the individual symbol cut into the ear,

which is called ear marking. When the herd is fenced into smaller units the ear marking begins, usually with the early calves. Once, when I had time to visit with the host reindeer herder he opened a book he referred to as “the bible,” otherwise known as the “deeds” of the reindeer earmarks, which is kept by the Reindeer Herders’ Association (Figure 7). The bible contained markings of every herder. As he pointed out which markers belonged to which family it was difficult to distinguish ear marking from another as a non-herder. Today, there are approximately 12,000 earmarks in use (www.paliskunnat.fi). The men typically earmarked the deer when they are young; deer are held down for a few minutes at a time to cut the marks into the ears.

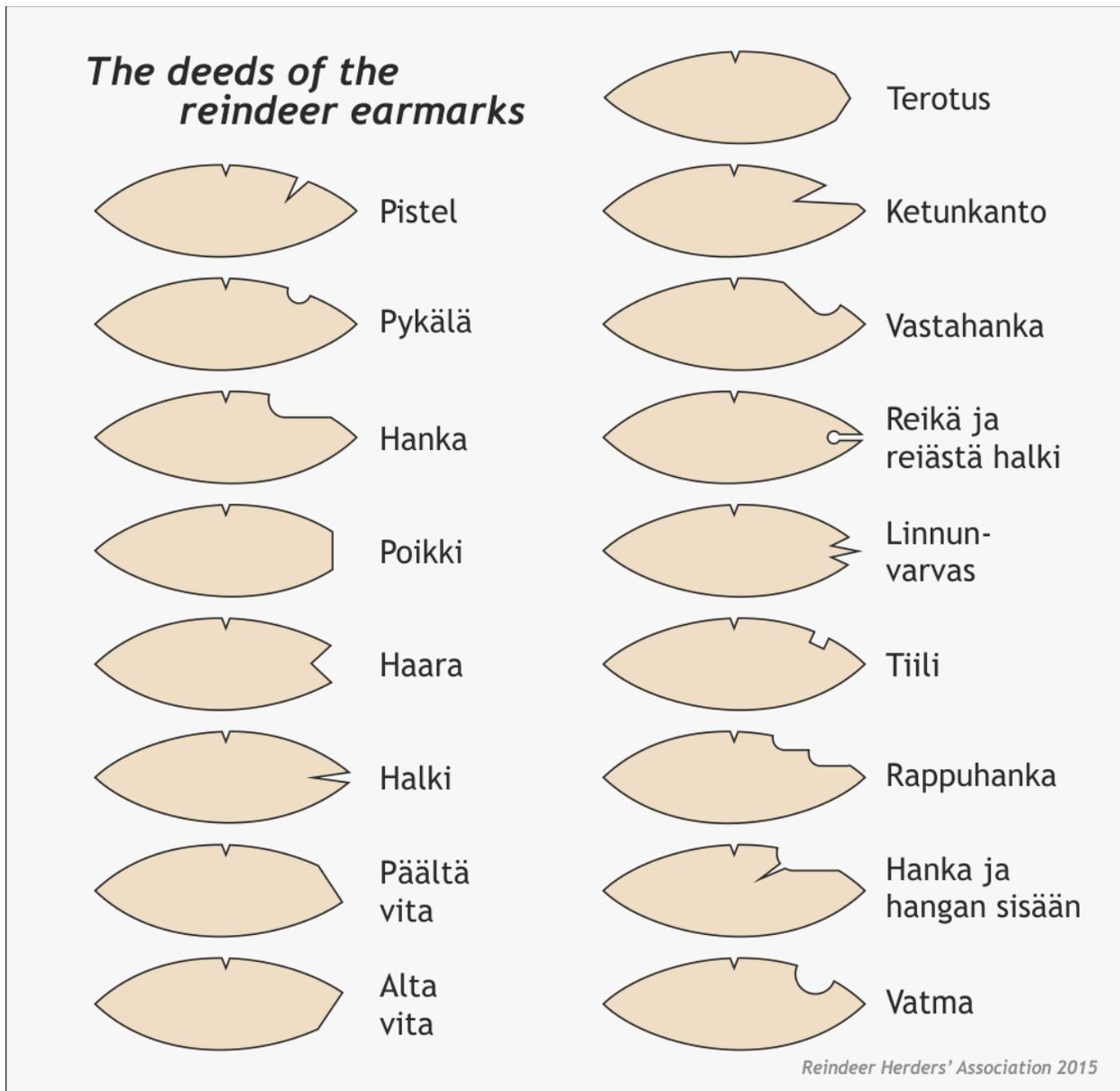


Figure 17. An extract from the Deeds or "bible" of reindeer earmarks, showing a sample of typical ear markings. Source: Reindeer Herders' Association, 2015.

After the earmarking, castration, and counting were completed, the final task was loading the reindeer onto the boat for their short voyage to summer pasture (Figure 6).

At the end, a sense of relief and quietness was felt. I realized I had spent the last 10 days with reindeer herders and their family. I had slept in lavvu tent or cabin. There are pieces to this story I may have not accurately captured, but that is my fault only. There were many angles to write this story but I feel that capturing what I intended was most important, and that was “Learning by Herding.” The moments following the conclusion of the migration, I could feel my body ache due to the limited amount of sleep, lack of showers, and the physical and mental strength it took to be away from “modern” today. I travelled with a Sámi woman back to their home for a hot shower, food, and a bed to sleep in.

A Final Observation - Impacts of climate change on reindeer herding

The year I began this work, climate change was the furthest thing from my radar at the local level. At the time I was participating in the American Indian Studies program at Haskell Indian Nations University and participating in the American Indian Higher Education Consortium (AIHEC) by recruiting Native American students for NASA research. I was paired with one of the NASA Senior Research Scientists responsible for bridging NASA-AIHEC, the goal of which was to gain research experience.

However, the topic that changed the outlook for me in terms of impact on Indigenous peoples was the topic of climate change. Dan Wildcat (2009) and other authors looked at the climate change topic as “another removal of Indigenous peoples.” He also pointed out that the removal driven by physical climate change is leading to a “...much deeper, more fundamental crisis: the way we live...a cultural climate change, a change in our way of thinking and actions” (Wildcat 2009, p. 4) is what he called for.

As I outlined in Chapter 1, the Arctic is warming more than the rest of the planet and is on a trajectory to continue warming at a faster pace. On my reindeer migration, weather and climate observations appeared to be of significant importance to everyone. There were daily discussions around the weather that circulated across the tundra, and the changes in weather were overwhelmingly felt as I moved with the herders. I think it can be fairly said that the shared value of reindeer herding among herders in Northern Norway is based on the collective-family and their “right to the cold.” There are numerous actual and projected impacts from continued warming, but three in particular relate to the Sámi and their traditional reindeer herding livelihood. All three were either directly observed or discussed by herders during the migration I accompanied in 2011.

The first, “locked pastures,” was previously discussed in chapters 1 and 2. Locked pastures occur when a pasture ices over and reindeer find it difficult or impossible to excavate through the ice and snow to uncover the lichens that constitute their primary food source. Icing occurs either due to a premature cycle of thawing of surface snow and then refreezing or “rain on snow” events that cover existing snow in a layer of ice. At one point in our migration in 2011, there were two days of almost no visibility, including rain-on-snow weather that prevented herders from moving along the migration course and making it difficult for reindeer to get access to lichens.

Second, although few species of plants can exist in the Arctic environment, it has been observed that shrubby growth is increasingly taking root due to the warming climate and is expanding northward. One reindeer herder expressed his observation that “the growth of brushes is becoming a problem as snow is not as much because you have rapid growth...and reindeer are unlikely and unwilling to move through because it’s so much” (Herder 2, personal

communication, April 2011). The brush was clearly present as we reached closer to the coast. Brush and shrubs sometimes became thick as herders and reindeer moved. This made it difficult for both snowmobiles and reindeer to maneuver, and only with some difficulty were the reindeer able to move through with the herders' assistance in getting them through the brush and guiding them to a pasture area.

Finally, another impact of climate change in the Arctic was the seasonal changes and melting ice and snow occurring earlier than in the past. These seasonal changes impact the location and timing of the original or "assigned" migration route by the Ministry of Agriculture. Often, the herders would need to develop a working relationship with land owners so that reindeer were able to pass through a specific area, increasing migration access for the herder. During the IPY Oslo Science Conference, I recalled the significant amount of research being conducted by scientists from all walks of academia concerning the rapid climate changes to environments locally and globally, including these challenges facing Sámi reindeer herders.

Postscript

Writing this thesis took seven years to complete for four reasons, the first being the difficulty of narrowing my topic to what is found in this thesis. Several other topics could be included – the writing process, alone, was a journey. Several folks had questioned my ability to write at all. In one semester three writing tutors were hired to coach me through the process and they didn't survive. However, I appreciated their creative efforts and in the end their straightforwardness. Third, the fieldwork and notes were very personal for me and still are, and I found it challenging to share them publicly. And finally, the challenges of asking myself “if I told a good story?” and “did I represent the community well?” In the end, it was all worth it. I am able to tell the story of my experience and educate on the reindeer herding people of Northern Norway and the increasing challenges they face as the Arctic climate transforms our environments in every aspect of our personal lives; some more than others. In the end, I realized it is really about sharing the compelling stories of Indigenous peoples' struggles to maintain their identity, while pursuing self-determination in the larger context of the world and our relationship within it.

Recently, I was told “to own the fact that I was an Indigenous woman entering another Indigenous community” (Wildcat, 2017) and that it represented “Indigenuity” (Wildcat, 2017) which is a different approach to solving problems using an Indigenous-to-Indigenous lens. Quietly, I had to recognize that I am an Indigenous women researcher. There are some things I came in knowing through my own indigeneity and tribal affiliation. However, there was much to learn and to be learned from. I recognize the number of obstacles that I overcame as a women researcher conducting research in another indigenous community and the number of barriers

outside this work. Combining this role and position with Dan Wildcat's "Indigenuity" sheds new light and perspective on next steps of this work.

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