ATAAM TAIKINA: TRADITIONAL KNOWLEDGE AND CONSERVATION ETHICS IN THE YUKON RIVER DELTA, ALASKA

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A

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Abstract

This research was conducted in collaboration with rural Yup'ik residents of the Yukon River delta region of Alaska. The thesis explores traditional knowledge and conservation ethics among rural Yup'ik residents who continue to maintain active subsistence lifestyles. From the end of July through August of 2012, ethnographic field research was conducted primarily through participant observation and semi-structured interviews, documenting Yup'ik subsistence hunting and fishing practices. Research participants invited me beluga whale hunting, seal hunting, moose hunting, commercial and subsistence fishing, gathering berries, and a variety of other activities that highlights local Yup'ik environmental knowledge, practices, and ethics. Through firsthand examples of these experiences, this thesis attempts to explore what conservation means through a Yup'ik cultural lens. Documenting Yup'ik traditional knowledge offers an opportunity to shine a light on the stewardship of local people's relationship with their traditional lands. The importance of maintaining direct relationships with the natural world, eating Native foods, and passing on hunting and gathering skills to future generations help develop the narrative of my analysis. In many ways, the cultural heritage of the Yup'ik people are embodied in such practices, providing a direct link between nature and culture.

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Chapter 1: Introduction

The focus of my research is an exploration of how Yup'ik subsistence practices are fundamentally linked with traditional knowledge and cultural values, and how these influence the way conservation is perceived from a local perspective. Certain characteristics such as wise use, no waste, and maintaining healthy resource populations for future generations are some of the hallmark symbols of Western conservation ethics. From a Yup'ik perspective, conservation implies many of these same principles, but it also implies conserving a way of life, not just maintaining species populations. As Yup'ik residents continue to adapt their hunting and gathering methods in accordance with tradition and practicality, Yup'ik cultural values play a major role in influencing natural resource harvesting practices.

Some of the questions that my thesis attempts to answer include:

1. What forms of traditional knowledge are still being practiced?
2. What are the cultural values associated with human ecological relationships?
3. How do Yup'ik values and traditional Yup'ik beliefs influence subsistence hunting and gathering practices?
4. From a Yup'ik perspective, what are the goals of conservation management strategies and how can these goals be achieved?

Ethnographic inquiry into the connections of Yup'ik subsistence practices and traditional knowledge can contribute important information regarding nature, culture, and resource management. It also highlights the complex ways in which an ideology of conservation can manifest itself from a local perspective, potentially offering unique insights into regional socioeconomic wellbeing.

In the Yukon River delta, fish and wildlife resources are predominantly managed by outside federal and state agencies that dictate local regulations and policy. The Alaska Department of Fish and Game (ADFG), the United States Fish and Wildlife Service (USFWS), the National Oceanic and Atmospheric Administration (NOAA), the National Marine Fisheries Service (NMFS) and the Yukon Delta National Wildlife Refuge (YDNWR) highlight several natural resource management agencies that influence regional policy. Empirical research designed to measure the health of fish and wildlife populations and their habitat tends to be the basis of management operating plans. However, local Yukon River delta residents have expressed that conservation-oriented goals must require more than just population estimates. Although Western science has proven its importance, local residents perceive it as having only limited application. Furthermore, there has been a call for regional policy to start taking into consideration local systems of belief. Integrating traditional knowledge and cultural values into regional systems of management could potentially provide the kind of holistic approach that is necessary for achieving long-term conservation oriented goals.

1.1 Introducing Key Research Participants

The primary research gathered in this thesis was conducted while living with a host family based in the Yukon River delta community of Kotlik, Alaska. The following provides an overview of key research participants who will be referred to throughout this thesis: Mary and Emmanuel, both in their 50s, are lifelong residents of the Yukon River delta region. Mary was raised in the nearby village of Emmonak and attended Mount Edgecumbe High School in Sitka, Alaska before moving to Kotlik. Emmanuel Keyes was raised in the neighboring village of Hamilton, Alaska and moved to Kotlik to attend school around the time it was established as a permanent settlement in the early 1960s. He has been a resident of Kotlik since. Emmanuel has always lived an active subsistence lifestyle

and has worked professionally as a fisherman and construction worker. Mary and Emmanuel live with their 11-year-old grandson, Keyshawn (or Lolly), who is a student in the Lower Yukon School District. Their daughter, Philomena (or Bee) lives next door with her boyfriend Albert and her three boys: 14-year-old Brendon, 3-year-old Mason, and 1-year-old Kyrel. Bee works various jobs including as a commercial fisherwoman and does secretarial work for Kwikpak Fisheries. I lived with Mary and Emmanuel and stayed at their home in Kotlik and their fish camp; the majority of activities were done with other family members and friends. This included gathering berries, hunting seal, commercial fishing, and casual dinners at home.

This master's thesis represents the culmination of several years of work and a genuine attempt to understand and learn about Yup'ik culture. Yet despite my hard work, on the first day I arrived in Kotlik it was pointed out to me that although I may be getting a master's degree from the research gathered during my time in "the field," I could never be a master of the Yup'ik culture in such a short period of time. In fact, I learned that Yup'ik residents who have lived their entire lives in the Yukon River delta are still constantly learning and adapting to environmental, cultural, and socioeconomic changes. Such an understanding is a reflection of how traditional knowledge is accumulated over time and that local residents have a deep connection to place. Traditional knowledge and cultural knowledge is acquired through a lived experience. It is a holistic, fluid way of life. With this in mind, it is important to acknowledge the limitation of my study and also the importance of learning by participation.

1.2 Outline of the Thesis

This thesis is divided into six chapters, including this introduction. The second chapter provides the theoretical background for the study of interrelated fields of cultural ecology and human ecology, traditional and indigenous

knowledge systems, and major themes found in the Yup'ik worldview. The third chapter provides a brief methodological overview. The fourth chapter provides a historical overview of the Yukon River delta region. First, I highlight local geography, flora and fauna, and provide an overview of Kotlik, Alaska. I then give a brief historical overview of the Yukon-Kuskokwim delta region including early contact, pre-statehood, and post-contact periods. The fifth chapter documents subsistence practices that I observed during the course of my field research and seeks to understand the cultural values and traditional forms of knowledge they embody.

In my analysis and conclusion, I attempt to summarize the main themes that have come out of the research, with concluding comments on the value and relevancy of this research and directions for future research. I emphasize the ways in which Yup'ik notions of environmental conservation manifest themselves through subsistence practices.

Chapter 2: Theoretical Background

Focusing on traditional and local knowledge is of anthropological interest primarily because it provides an opportunity to identify the types of knowledge that many forms of modern environmental knowledge-bases are lacking. Traditional and local cultures, with deeply rooted ties to the land, may potentially offer unique perspectives into how modern society can expand its understanding of what constitutes a truly sustainable relationship with nature (Hunn, 2006, p. 144). Furthermore, a holistic understanding of natural resource management and conservation-oriented goals needs to take into consideration the importance of cultural and spiritual values, which are critical components that drive local decision-making processes (Verschuuren, 2007, p. 299). This chapter provides an overview several theoretical approaches that I have used as conceptual frameworks to help guide my research approach.

2.1 Cultural Ecology

Julian Steward's anthropological theory of cultural ecology examined human adaptation and the varying relationships between culture and environment. Steward's cultural ecology is inseparable from the field of human ecology, and represents a specific approach toward conducting human ecological research. Steward (1968) defined cultural ecology as "the study of the processes by which a society adapts to its environment" (p. 337). Cultural ecology expresses a view of "man in the web of life" (Moore, 2012). Providing a three-step analytical process for investigating cultural-ecological relations, Steward suggests that:

(1) "First, The interrelationship of exploitative or productive technology and environment must be analyzed;"

(2) "Second, the behavior patterns involved in the exploitation of a particular area by means of a particular technology must be analyzed;"
(3) And third, one must determine how "behavior patterns entailed in exploiting the environment affect other aspects of culture" (p. 178).

Cultural ecology is important in that it provides a method to examine humanity's interconnectedness with the natural world and to analyze a culture's means of adaptation to the environment (Moore, 2012, p. 180). Steward's cultural ecology provided the analytical focus and an empirical base that led to his theory of multilinear evolution, which has been criticized for failing to thoroughly consider ecological and social dynamics (Kassam, 2009, p. 31).

2.2 Human Ecology

Human ecology is an interdisciplinary and transdisciplinary study of the relationship between humans and their natural, social, and created environments. Eugene Odum (1866) defined ecology, or "oekologie," as "the study of the structure and function of nature." This continues to be the standard definition of ecology. Human ecology applies a holistic approach to the study of ecology by seeking to understand aspects often overlooked by modern science and technology, such as people's spiritual relationship with their environment.

Although human ecology is as old as human existence, it was not until the 1940s and '50s that mounting concerns about humanities impact on the global environment culminated in human ecology becoming a field of academic study (Williams, et al., 2012, p. 5). In 1969, Atlantic College in Bar Harbor, Maine, was the first university in the United States to offer an interdisciplinary degree in human ecology. The quarterly peer-reviewed academic journal *Human Ecology* was established in 1972. The basis of a human ecological perspective reminds us

that we are part of a complex living world. This cognitive approach, with its interdisciplinary mandate, invites the crossing of academic boundaries such as biological and social forms of research (Williams et al., 2012, p. 15). Human ecology proposes that acculturation and exchange of different ways of knowing should be a two-way process that fosters harmony and growth.

2.3 Western and Euro-American Nature vs. Culture

One of the fundamental aspects of human ecology is the links between nature and culture. Before the Scientific Revolution, knowledge about the world in Western society was delivered through the church, deriving from the Judeo-Christian creation stories found in the book of Genesis. After the Scientific Revolution, very much like the current modern worldview, knowledge about the world came from observation of it, best done through controlled experiments. The Western mechanistic worldview, with its roots in the Scientific Revolution and Industrial Revolution, is influenced by the ideas of Newtonian mechanics. Phrases such as "the economy of nature" and "the balance of nature" convey a sense in which nature is perceived as a mechanistic system consisting of a well-oiled machine and functioning in an orderly manner (Winter, 1996, pp. 33-34).

Some of the most the influential proponents of the modern worldview, known for its anthropocentrism, rationalism, objectivism, and belief in scientific and technological progress, have largely denied the existence of spirit, including the subjectivity of the nonhuman world. These proponents include René Descartes, Francis Bacon, and Isaac Newton. French philosopher René Descartes (1596 – 1650), who is commonly referred to as the "father of modern philosophy," is credited as being one of the major contributors of a mechanical view of nature. In Descartes' view, everything in the universe was mechanical in operation except the human mind, which he believed was of a different substance. He argued that the human mind, imbued with soul, was under the

jurisdiction of the church; the rest of nature acted strictly according to mechanical laws, but not the human mind. The concept of an external environment or nature separate from human society is the basis of the Cartesian dichotomy of mind versus matter, and hence humans versus environment (Iwachiw, 1997, pp. 37-38). Spirit became to be associated with that of the supernatural, and because rationalist empiricism dismissed claims to supernatural phenomenon, spirit itself largely became irrelevant in European derived, modernist societies.

English philosopher Thomas Hobbes (1651) furthered this dichotomy regarding humanity's relationship with the natural world when he famously declared that human life in the state of nature was "solitary, poor, nasty, brutish, and short" (Chapters XIII-XIV). Since then, Western thought has continued to be pervaded by a view of nature as separate from human, and of humans as dominant over nature, largely due to unique cognitive abilities and the capacity for technological innovation.

The view of humans as separate form nature has also been reflected in the philosophies of nature conservation resulting in the further decline of cultural diversity. Traditionally, nature conservation policy such as the 1964 U.S. Wilderness Act looked to "take people out of nature" in the creation of wildlife refuges and parks, in many cases resulting in the severance of a long-standing co-adaptive relationship between local people and their environments. Maffi (2007) points out that this has often resulted in sociocultural consequences for local community residents and even severed long standing co-adaptive relationships among people and their traditional lands (p. 59).

According to Maffi (2007) the Western academic study of nature and culture has traditionally been seen as separate realms. This separation is exemplified by the long-standing institutional rifts between the natural sciences,

social sciences, and the humanities (p. 59). She also argues that these forms of institutional rifts have hindered the opportunity to create interdisciplinary research necessary for presenting the interdependence of all forms of the diversity of life. In addition, this view holds that the world's richness of cultures and languages should be understood as an intrinsic component of nature conservation (p. 56).

Human ecological knowledge is often embodied in the particular languages that are native to a specific ethnoecological region. Language provides the tools for thought, for memory, and for imagination, allowing people to share their experiences and pass on the skills necessary for survival (Hunn, 2006). In fact, the language used enables a speaker to express experience and contemplate it within a particular cultural context, from which the language derives, and so in part language is the primary tool in the social "construction of reality" (p. 144).

A critical aspect of documenting human ecological research includes summarizing key terminology that is used to highlight unique cultural perspectives. Hunn (2006) argues that ethnographies should at least attempt to summarize these forms of local vernacular, citing scientific and native names of flora and fauna used in descriptive analysis (p. 148).

Pilgrim and Pretty (2010) suggest that languages encode cultural knowledge bases in a way that is often non-translatable into other languages. Languages are often inextricably tied between speakers and the landscape for resource-dependent communities. The stories, proverbs, and names that derive from the land lose the necessary context to make such information meaningful outside of their local environment (pp. 7-8). During my travels throughout the Yukon River delta I learned that the landscape was embedded with traditional place based names. Numerous camps and settlements, back rivers, sloughs, and ponds hold stories from the past. Elders continue to pass on this knowledge to

the younger generations helping to ensure safe passage through the land and knowledge of the resources that it possesses.

Previous human ecological research has been documented in reports by international organizations such as the World Wide Fund for Nature (WWF), the International Union for the Conservation of Nature (IUCN), and the United Nations Educational, Scientific and Cultural Organization (UNESCO). These publications have taken a leading role in helping to emphasize and acknowledge the importance of research that explores the interrelationship between cultural and biological systems. Enhancing dialogue across different knowledge systems and collaborating among different stakeholders (i.e., local residents and land management agencies) is one of the hallmarks of successful human ecological research.

Berkes (1999) argues that the new trend in conservation should treat people as part of a sentient landscape to be conserved, enable local participation in decision-making, and encourage pluralistic ways of thinking about the world. Research has shown that the protection of nature can be part of the traditional norms of a society and traditions play an important role in nature conservation (pp. 155-156).

2.4 Local Knowledge, Traditional Knowledge, and Indigenous Knowledge

In the following I attempt to highlight the key concepts shared among the theories of local knowledge, traditional knowledge, and indigenous knowledge. In general, local knowledge, traditional knowledge, and indigenous knowledge refer to a shared body of knowledge often held by local residents dependant upon local resources. Although these forms of knowledge bases often contain a rich understanding of natural processes, they are not limited to only ecological

concerns. Despite their similarities in that regard, each represents a unique field of local, holistic knowledge based on relationships.

2.4.1 Local Knowledge

Local knowledge is multifaceted and influenced by changing social and economic circumstances that affect the way people come to know and relate to nature (Bell et al., 2008). Cruikshank (2005) describes local knowledge as tacit knowledge that is embodied in life experiences and reproduced in everyday behavior and speech (p. 9). Local knowledge is the accumulation of knowledge across generations about a particular place. Although local knowledge can be traditional or indigenous knowledge, it doesn't necessarily have to be.

One of the most significant aspects of local knowledge is that it may derive from frequent interactions with the land (Pilgrim & Pretty, 2010). Local knowledge is based on being able to decipher a variety of environmental conditions, and then being able to make sense of what these conditions are saying. These forms of cultural knowledge have important implications for sustainable ecosystem management practices such as understanding ecosystem dynamics, sustainable harvesting levels, and species interactions (p. 7).

Studying local knowledge gives insight into how social relationships are critical driving forces in the way in which people interact with their ecology and for the success of conservation management plans. Local knowledge influences community-based social, economic, and spiritual wellbeing. Bell's (2008) case study of Saimaa Ringed Seal conservation in Finland emphasizes how local people possess a deep level of local environmental knowledge and highlights the danger in terms of sociocultural consequence if seal conservation policies do not take into consideration local systems of belief (pp. 277-293). Because of local knowledge's multifaceted contribution to a myriad of socioeconomic factors,

researching this body of knowledge should be considered an essential element to the successful management of natural resources.

2.4.2 Traditional Knowledge

Traditional knowledge can be defined as a cumulative body of knowledge, practice, and belief evolving by adaptive processes and handed down through generations by cultural transmission, about human relationships with one another and with their environment (Bingwan, 2009, p. 8). Traditional knowledge derives from a deep knowledge of place and experience within that place, based in a particular culture. It is a culturally oriented body of knowledge that has been passed across generations of people and that is specific to a given community. These forms of cultural knowledge are commonly shared among extended family and kin who engage in a similar lifestyle such as subsistence hunting and fishing. Traditional knowledge has always included a holistic understanding of ecological processes based on a deep connection with the land. Traditional knowledge always includes local knowledge, despite that local knowledge is not always traditional knowledge.

2.4.3 Indigenous Knowledge

Indigenous knowledge is specific to individuals who are part of a culture that is indigenous to a particular place and who are the oldest known inhabitants of a land. Unlike local and traditional knowledge, indigenous knowledge can only be held by individuals who are the earliest known people who have inhabited their ecological region. Indigenous epistemology, often a key driving force behind indigenous knowledge, can be defined as "a cultural *group's* ways of thinking and of creating, reformulating, and theorizing about knowledge via traditional discourses (Ross et al., 2011, p. 36)." Indigenous epistemologies manifest themselves in a variety of ways including hunting and other subsistence practices,

spiritual beliefs, oral stories, song, and art. Understanding this knowledge-base provides valuable and detailed insights into local ecosystem processes such as an understanding of the flora and fauna, climatic changes, and how plants and animals behave and interact with each other and are influenced by seasonal variations (Kassam, 2009). Western scientific knowledge is similar to indigenous ways of knowing in that it fundamentally draws upon its sociocultural roots and is based upon repeated phenomenological and often empirical experience.

The potential for these bodies of knowledge to contribute to nature conservation has been widely recognized. For example, in the arctic and sub-arctic regions of North America, cooperative management schemes have become one of the major strategies for outside resource management agencies to work with local communities in attempting to achieve successful partnerships based in conservation oriented goals. Adaptive management is a method to bridge Western and indigenous ways of knowing in the area of ecology and resource management (Berkes, 1999). Kofinas et al., (2010) suggests that strengthening the existing system of local advisory councils, which are made up of regional residents who provide nonbinding advice to the state and federal regulatory agencies managing wildlife resources, would be an effective means of achieving and strengthening co-management systems in Alaska (p. 1357). However, this approach has so far proven to be of limited effect and has been criticized for continuing to require indigenous acculturation into Western management systems and organizations. For example, state and federal management organizations that are required to operate under a management philosophy of sustained yield will surely clash with indigenous cosmological beliefs of spiritual continuity.

Not surprisingly, indigenous communities have increasingly expressed a desire to maintain culturally prescribed methods of resource management that embody a traditional way of life. A balance of old and new ways, both spirit and

science, managed according to local preference, has been a common desire expressed by rural indigenous community leaders. Adapting to changing socioeconomic conditions while maintaining cultural identity and access to traditional resources lie at the heart of the issue.

Although the goals of conservation organizations and indigenous peoples often overlap, their motivations and methodologies often differ. Local indigenous peoples seek to continue utilizing natural resources in a sustainable fashion while maintaining control over their traditional lands. The central goal would be to pass on a way of life that maintains cultural heritage and ensures that future generations have the same access to resources. In contrast, conservation organizations' primary goal is the maintenance of biological diversity and species population. In order to achieve such a goal, conservation agencies often support a variety of policies that restrict resource harvesting and related socioeconomic activities that can often impose on the freedoms of local residents.

One of the primary wrongful assumptions about traditional knowledge is the underlying premise that different cultural perspectives are bridgeable by concepts in the English language and within scientific discourse. However, all languages are rich in cultural nuances that express meaning often untranslatable in another language. Another criticism of traditional knowledge is the idea that truthful knowledge can somehow be "captured" and recorded in databases. Documenting local knowledge from research participants often becomes stripped from place and context, and once the final product is transcribed, codified, and labeled essential meaning is inextricably lost (Cruikshank, 2005, p. 256). A third issue of working with traditional knowledge is the growing recognition that concepts most readily accepted as "tradition" by managers usually reflect ideas compatible with state administration rather than those understood by local people (Nadasdy, 2003). In this sense, modernist recasting of "traditional ecological knowledge" continues to present local knowledge as an object for

science rather than as intelligence that could inform science (Cruikshank, 2005, p. 257). A similar prevailing view of Western science as a form of "objective" knowledge can also lead to a failure to recognize the validity of other knowledge systems, such as indigenous or local epistemologies. Recent scholarship on the history of colonialism traces the social and political conditions under which particular kinds of local knowledge were suppressed and eliminated while other kinds, like Western sciences and humanities, gained authority and then claimed legitimacy to analyze forms of knowledge marginalized in this process. Finally, another common misconception of local and traditional knowledge is that it is static or frozen in time. Rather it is important to emphasize that cultural values are dynamic and constantly adapting to change. Local knowledge is not a fixed entity, but rather fluid in relation to various socioeconomic and ecological conditions. The effects of modernization and the influence of new systems of belief have changed cultural traditions, resulting in the abandonment of certain components and the adaptation and integration of new ones.

Despite such criticisms and challenges many scholars such as Berkes & Folke (2000) continue to argue for the co-consideration of Western knowledge systems and traditional knowledge systems, suggesting that these two knowledge frameworks no longer need to exist in opposition. Rather resource management agencies should work with local communities on building dialogue and forging collaborative partnerships. Both Western and traditional systems of knowledge have important information to share about conservation and the wise use of natural resources. These common interests can form a foundation for successful collaboration, and produce lasting partnerships (p. 180).

2.5 Yup'ik Worldview

This section of my thesis identifies some of the core principles and terms that underlie traditional Yup'ik worldviews. Like many other indigenous worldviews, Yup'ik worldviews are in contrast to a Western mechanistic/linear ideology. Yup'ik worldviews are locally adapted forms of knowledge and beliefs that inform and guide human's relationship to their ecology and all of life. These traditional forms of relating and understanding the world are still alive today and continue to be practiced.

The Yugtun word *ella*, which translates to "weather," "world," "universe," and "awareness," depending on the context, is a key concept in understanding the Yup'ik cosmological view that emphasizes the interconnectedness of life, of all natural and cultural phenomena (Fienup-Riordan & Rearden, 2012, pp. 59-60). *Ella* refers to the awareness that humans live in a responsive, sentient world that seeks to be treated with care and respect. According to Kawagley (2006), it is through the manifestation of *ella* that, "the Yup'ik developed a body of values and traditions that would enable them to maintain and sustain their ecological worldview" (p. 14).

Yua, meaning "its person," "its personality," or "its soul," is another key concept in understand Yup'ik worldviews. For Yup'ik society, all natural things in life are endowed with *yua* (Oleksa, 2005). This includes humans, animals, kayaks, drums, masks, and spears (p. 38). The belief of in *yua* can be analyzed as being rooted in Animism with a pantheistic leaning. According to Snodgrass and Tiedje (2008), Animism, or a belief in spirits, souls, and non-empirical levels of reality, is the basis of all religion and is found in all societies (22).

The basis of *yua* is that Yup'ik society included both human and nonhuman beings. This means that the idea of personhood is extended beyond

the human domain and is attributed to animals as well. They did not believe that only humans possess immortal souls in contrast to and dominant over mute beasts that served them. On the contrary, the Yup'ik viewed the relationship between humans and animals as collaborative reciprocity; the animals gave themselves to the hunter in response to his respectful treatment of them as persons (albeit nonhuman) in their own right (Fienup-Riordan, 1990, pp. 167-169). Similar types of worldview prevail throughout neighboring Beringia and the circumpolar north.[1]

Yup'ik beliefs hold that humans and animals alike possess "awareness." Joe Friday, a rural Yup'ik resident from western Alaska, summarized this belief when he stated, "We felt that all things were like us people, to the small animals like the mouse and the things like wood to the person who is using it and the person using it is grateful to the wood for being there to be used." From a Yup'ik perspective, the life of the individual took on meaning only in the context of a complex web of relationships between humans and animals, both the living and the dead (Fienup-Riordan, 1990, pp. 72-73).

The cycling of souls is especially important when considered in light of the traditional belief that animals must be cared for so that they could be reborn and voluntarily give themselves again. Seals, as well as other animals and fish, are believed to give themselves voluntarily. A seal, for instance, is said to sense, and in fact to see, the merits of a hunter. If the hunter is seen to be "awake" to the rules of the proper relationship between humans and animals, and between humans and humans, then the seal will allow the hunter's harpoon or bullet to kill it. When the seal is hit, and if the seal is likewise awake, it retracts to its bladder. Although its body will die and provide life to humans, its soul will stay alive and await return to the sea (Fienup-Riordan, 1990). All living things are

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[1] For an ethnographic overview of a similar belief system in Kamchatka, see Plattet, 2011.

believed to participate in an endless cycle of birth and rebirth; the souls of both animals and people were a part of this cycle, contingent on right thought and action by others as well as self (p. 45).

Anthropologist Ann Fienup-Riordan suggests (1995), “although the ceremonial cycle of the 19th century is a thing of the past, both the Yup’ik language, and the unique view of the world that it enables contemporary Yup’ik people to express remain intact” (p. xvi). Yup’ik children are still instructed in a code of etiquette toward their natural surroundings that is just as important as any code of etiquette toward other human beings (Fienup-Riordan, 1990). These teachings are often embedded in oral stories that embody a common system of values, ethics, and meanings that make up a particular culture, whether it be a Yup’ik community or indigenous peoples elsewhere (p. 35).

Chapter 3: Research Methodology

For this thesis, the primary field research was completed during a three-week stay from late July through late August 2012 in the Yukon River delta region of western Alaska. My field research began on July 27, 2012, with the goal of documenting Yup'ik subsistence practices, traditional knowledge, and conservation ethics. I wanted to understand what conservation means from a local perspective. How do people act as "stewards" of the land?

3.1 Ethnographic Approach

Although three-weeks can hardly provide the basis for an exhaustive ethnographic study, for the purposes of this particular master's thesis, this period of time will have to be sufficient. Although my goal always revolved around documenting Yup'ik notions of environmental stewardship and conservation ethics, I entered the field open-minded toward the direction of the research. Previous reviews of ethnographic literature taught me the importance of letting the data come to the researcher. For example, O'Reilly (2012) notes that, "ethnography should not begin with a rigid hypothesis to be tested, but rather proceeds with some basic ideas or interests and then is continually shaped and reshaped through immersion in the setting or community (p. 29)." I consciously made sure to take O'Reilly's advice, allowing the findings to come to me. Nonetheless, my intentions always remained that the end results of my research would attempt to honor the local knowledge and customs that I was graciously allowed to experience and record.

I relied primarily on participant observation and semi-structured interviews to illuminate my research interests. Participant observation, often referred to as the "hallmark of the ethnographic method" is a qualitative method of research that typically involves cross-cultural immersion. Participant

observation emphasizes the importance of learning by doing. Since I was interested in learning about traditional and local knowledge, I felt the best way to develop my research perspectives would be through a lived experience in a culture that still practices an active subsistence lifestyle. Living in Kotlik with a Yup'ik family provided me with that opportunity.

Semi-structured interviewing is also a qualitative method of research that seeks out local interpretations of actions and events (Bernard & Gery, 2009). The goal of the interviewee is to get out of the way and let the informants talk, observing them carefully and recording them as objectively as possible. Effective techniques of informal interviewing include active listening, conscious silence, repetitious feedback, asking naïve questions, and summarizing feedback (p. 57). Follow-up interviews were conducted over the phone after I had returned from the field.

Focusing on participant observation and semi-structured interviewing (which typically does not involve audio recording conversations) allowed for a more low-key form of research. After or during interviews, I would immediately transcribe notes into my computer. When working in the field, notes were recorded into my journal using the informants' own words to the best of my ability. I also counted on my memory, movies, and photographs to recall events in detail as best as I possibly could, asking for verbal clarification from research participants when needed. My conscious choice to document using field notes was because note-taking would be a less intrusive. I asked questions when I felt I needed to. I relied on my observations during events related to my study which I then recorded onto my computer in the evenings or when I returned from the many subsistence trips I participated in with my host family. I also took still photographs of the events that would capture the different events during my stay with my family. I would ask their permission to photograph such an event. Eventually, Mary would say to me, "Take a picture of that," or "Take as many

pictures you want." All the photographs that I have included in this thesis are with verbal permission from my hosts, Mary and Emmanuel Keyes. In addition, all other research participants that have been presented in this thesis have also consented to the use of their name and image.

3.2 Why Kotlik?

Gaining permission to perform research in a community is one of the essential first steps for ethnographers interested in carrying out ethnographic research. Although I knew that I wanted to conduct field research in a rural Yup'ik community, I wasn't exactly sure of how to best approach the situation. After I had successfully completed my comprehensive examination questions and my first semester in a Yugtun language course, I met with my professor, Dr. Walkie Charles, to seek out possible ideas. The traditional Yup'ik story about a boy who went to live with seals[2] had inspired an interest in doing ethnographic research that would document modern seal hunting practices. I knew that I was also interested in traditional knowledge and local forms of conservation ethics. After expressing this to Walkie, I learned that his family lives in a region where Yup'ik seal hunting continues to be practiced. Walkie graciously said that he would contact his sister and let her know that a student of his would like to learn about local Yup'ik methods of hunting seal. Fortunately, Walkie's sister, Mary, let me know that I was welcomed to come live with her family and that they would be willing to show me how people continue to hunt seal and live an active subsistence lifestyle. In that regard, I am very much indebted to Walkie and his family for providing me with this research opportunity.

I learned that my field research would be in the Yukon River delta community of Kotlik, Alaska. Kotlik served as an ideal place to conduct research

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[2] See Fienup-Riordan, 1994, pp. 3-6 for further discussion.

examining Yup'ik conservation ethics and traditional knowledge for myriad reasons. Many Yup'ik residents hold a deep sense of time and place toward their lands that is embedded in unique forms of ideology, cosmology, mythology, ontology and philosophy (see following chapter on Yup'ik worldviews). Despite rapid culture change that has occurred within a handful of generations, many local residents hold onto ancestral beliefs and possess a locally developed system of knowledge that is inherently different than Euro-American societies. Local residents continue to rely heavily on subsistence resources for social, economical, and spiritual purposes. The Yukon River delta region is also a place of international interest and concern in regards to the management of local fish and wildlife species, as outside agencies are primarily responsible for implementing local hunting and fishing regulations. With these factors in mind, I felt like participating in local subsistence practices in the Yukon River delta region would provide the basis for an interesting research topic.

The main research equipment for data recording included a laptop computer, a digital camera with video capability, and a digital voice recorder. Also, a field journal played an essential role allowing me to write out my notes during occasions when using a computer was either not practical or not possible. In addition to the firsthand data gathered from my field research, I use secondary data such as academic journal publications, public records, archival sources, memos, and media publications.

3.3 On Language

During the course of my research, almost all of the conversations and interviews were conducted in English. Although the past academic year I had been studying the Yugtun language at the University of Alaska Fairbanks (UAF), I found applying my Yugtun language skills outside of the classroom context challenging. Compounding my difficulties of trying to speak a newly learned

language, the Yugtun dialect spoken in the Kotlik region is different than the Kuskokwim dialect taught at UAF.

During the first potluck that I attended, I entered a home packed full of family members, friends, and food. I was the only outsider there, so I obviously stood out. I hoped to make a positive impression by speaking the local language. Conversations drifted in and out of Yugtun and English, so it was a great time to put my language skills to test. I found that I could often understand what was being said in Yugtun, but I didn't always know how to verbally respond. The Yugtun that I did speak was primarily basic expressions that I was comfortable with. For example, I could answer simple questions such as *"cangacit"* ("how are you doing?"*)* with something like *assirtua, quyana* ("I'm good, thank you"). I spoke more in depth than that, but for the most part I kept it simple and learned by listening.

Learning the language of the research community has been one of the hallmarks of the participant observation method since Malinowski. DeWalt & DeWalt (2002) argue that for a true ethnographic study, "it is not only worth the time and effort to learn the local language, it is imperative (p. 57)." Although my ability to speak Yugtun was elementary, it still played an important role in my research. In fact, part of the title of my thesis, "*ataam taikina*," would not have of happened without my education in Yugtun. *Ataam taikina*, meaning 'come again,' which was spoken by one of the research participants after a seal hunt, symbolically represents one of the fundamental themes of my research findings. Being able to speak Yugtun in a rural Yup'ik community has the potential to open up new doors of possibility for academic researchers, especially in the field of traditional knowledge.

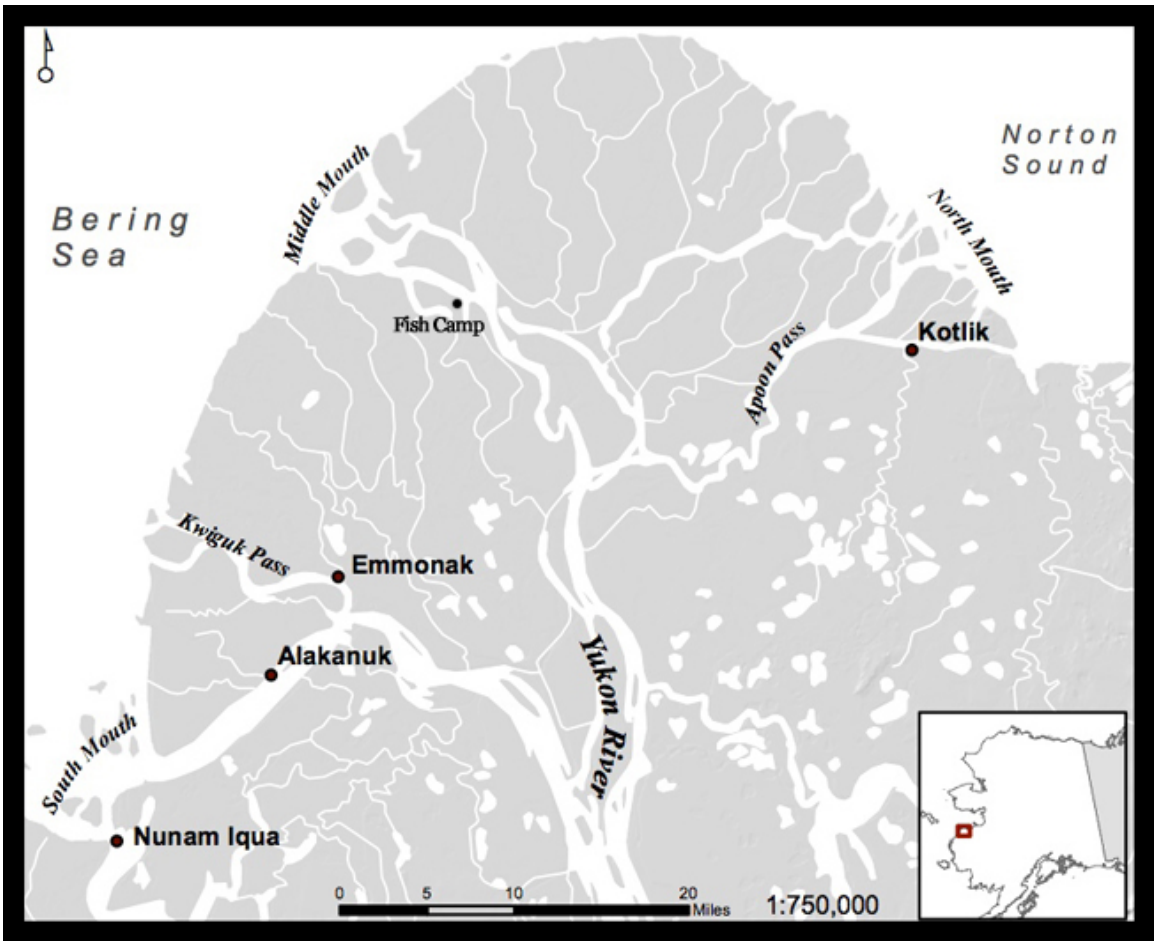

Figure 4.1 The Yukon River delta landscape. (Alaska Department of Fish & Game – Division of Subsistence)

Chapter 4: An Overview of the Yukon River Delta

4.1 Yukon River Delta Overview

The Yukon River delta landscape is dominated by low-lying wetlands, lakes, ponds, streams, inlets, bays, and coastal areas that support an extremely rich and varied community of fish and wildlife species. For more than at least several thousand years the Yup'ik people have lived a subsistence lifestyle closely tied to the lands and waters of the Yukon River delta and the neighboring Bering

Sea. Major villages within the region include Alakanuk, Emmonak, Kotlik, and Nunam Iqua (Fienup-Riordan & Rearden, 2012, pp. 10-13).

Flowing more than 2,300 miles, the Yukon River, the largest river in Alaska, drains approximately 35% of the state and is the fifth largest drainage in North America. When the Yukon River reaches the coast, it is divided into numerous channels that empty into the neighboring waters of the Norton Sound and the Bering Sea. The north mouth (Aprun Pass), the middle mouth (Kuigpak Pass), and the south mouth (Kuiggluaq Pass) make up the three main channels or mouths of the Yukon River. The movement of shifting and depositing silt throughout the region has created the shallow and flat wetlands that permeate throughout the Yukon River delta (Moncrieff, 2004, p. 26). The surrounding coastal waters are generally shallow in depth, ranging from 2 to 3 fathoms with shifting underwater channels. The land area has a low elevation of several feet above sea level, which often results in seasonal flooding (Alaska Geographic Society, 1991, p. 4).

The Yukon River delta supports a variety of land mammals including Arctic fox (*Alopex lagopus*), beaver (*Castor canadensis*), lynx (*Lynx canadensis*), mink (*Neovison vison*), muskrat (*Ondatra zibethicus*), red fox (*Vulpes vulpes*), river otter (*Lutra canadensis*), short-tailed weasel or ermine (*Mustela erminea*) and wolverine (*Gulo gulo*). Black bears (*Ursus americanus*), brown bears (*Ursus arctos*), and moose (*Alces alces*) make up the large land mammals found within the Yukon River delta (AGS, 1991, p. 4).

Marine mammals play an important role in the subsistence diet of local residents. Seals are harvested for their meat, oil and hides, and are exchanged through gift giving, bartering and trading among extended family members and friends (Coffing et al., 1998). There are five different species of seal that dwell near the mouth of the Yukon River: bearded (*Erignathus barbatus*), harbor

(*Phoca vitulina*), ribbon (*Phoca fasciata*), spotted (*Phoca largha*) and ringed (*Phoca hispida*). Beluga whales (*Delphinapterus leucas*), walrus (*Odobenus rosmarus divergens*), and occasional Steller Sea Lions (*Eumetopias jubatus*) are found in the region at certain times of the year.

The immense wetlands of the Yukon River delta help support one of the largest gatherings of migratory waterfowl in the world. In the greater Yukon-Kuskokwim delta region, more than 1 million ducks and half a million geese breed here. Millions of shorebirds and seabirds also use the delta for critical breeding and rearing grounds. In terms of both density and species diversity, the Yukon River delta is the most important water bird nesting area in the country and the most important wetland post-breeding zone for waterbirds on the west coast of North America (Yukon Delta National Wildlife Refuge, 2004).

A variety of fish species are found throughout the Yukon River drainage including all five species of salmon: Chinook or king salmon (*Oncorhynchus tshawytscha*), coho or silver salmon (*Oncorhynchus nerka*), chum or dog salmon (*Oncorhynchus keta*), humpack or pink salmon (*Oncorhynchus gorbuscha*), and sockeye or red salmon (*Oncorhynchus nerka*). Other species of fish found in the delta include Northern pike (*Esox lucius innaeus*), sheefish (*Stendous leucichthys nelma*), Alaska blackfish (*Dallia pectoralis*), burbot (*Lota lota*), Pacific herring (*Clupeid palace*), Arctic lamprey (*Lethenteron camtschaticum*), Bering Cisco (*Coregonus laurettae*), Arctic grayling (*Thymallus arcticus*), Dolly Varden (*Salvelinus mama walbaum*) and rainbow trout (*Oncorhynchus mykiss*) (AGS, 1991, p. 4).

Figure 4.2 Kotlik, Alaska (*Qerrullik* in Yugtun). (Photo by Chad M. Cook)

4.2 Kotlik (*Qerrullik*) Overview

Kotlik, Alaska is home to about 600 Alaska Native residents with more than 97% of residents identifying themselves as Yup'ik. Located on the east bank of the Kotlik Slough, which lies near the northern mouth of the Yukon River, Kotlik derives its Yugtun name "*Qerrullik,"* meaning "a pair of pants," from its geographical location, where the Yukon River splits apart like the legs on a pair of trousers. Kotlik is 35 miles northeast of Emmonak, 165 air miles northwest of Bethel and 460 Miles from Anchorage. The community lays at 63°03' North Latitude and 163°55' West Longitude. The area encompasses 3.8 square miles of land and 0.8 square miles of water. (ACDCIS, 2012).

The climate of Kotlik is sub-Arctic with temperatures ranging between -50°F and 87°F. There is an average of 60 inches of snowfall and 16 inches of precipitation, which often lead to high winds and poor visibility. The Yukon River delta and Norton Sound region remain covered in ice from about late October to early June (ACDCIS, 2012).

The local economy includes small-scale commercial salmon fishing, which has been developing since the 1930s. The Yukon Delta Fisheries Development Association (YDFDA) and its subsidiary company, Kwikpak Fisheries, provide one of the primary sources of income and employment opportunities for Yukon River delta residents. In 2011, 68 residents held commercial fishing permits.

For many rural Alaskans, the high cost of purchasing store-bought food and fuel represents an economic hardship, especially with the rising costs of these commodities. Permanent settlement in a village implies that local residents must now travel from a home base to their hunting grounds or family fish camp, which requires an increasing access to cash for maintenance and fuel. Therefore, without economic opportunities like commercial fishing many residents would be unable to afford to engage in an active subsistence lifestyle that includes gasoline engines and rifles.

Regional subsistence activities such as whaling, seal hunting, gathering berries, fishing and moose-hunting act as critical cultural components. The Kotlik region's per capita harvest of wild foods in among the highest in the nation, as subsistence hunting and gathering activities play a major role in the local people's diet and economy.

The village of Kotlik first became a permanent settlement in the 1960s when residents of nearby communities Caniliaq, Hamilton, Bill Moore's Slough and Pastuliaraq relocated after a Bureau of Indian Affairs (BIA) school was built

there. In addition to being a primarily Yup'ik community, many current residents are the descendants of Russian traders who settled in the region during the late 1800s (Calista Corporation, 2012). According to Griffin (1996), the village of Kotlik was first established as a Russian trading post in 1850, evidently placed there to compete with Pastuliaraq for Yukon River commerce. Shortly after the United States' purchase of Alaska, Kotlik reportedly consisted of a single house with a steam bath, a large cache and a *qasgiq*[3] (or a Yup'ik men's house). During the 1880s, Kotlik served as a trading post for the Alaska Commercial Company and a way station for riverboats passing on the Yukon River (Griffin, p. 105).

With the influx of miners and traders to the area in the late 19th century, steamship traffic began to increase along the Yukon River. Kotlik served as a refueling stop and resting area for many of these boats partially because of its location near the mouth of the river. Yukon River commerce eventually bypassed Kotlik when riverboats began wintering in Andreafsky (near the present village of St. Mary's) and a North American Transportation and Trading depot and warehouse was established in Hamilton (Griffin, 1996).

After 1930 Kotlik began to grow slowly, with a casual influx of families from several nearby communities. After the severe flooding of Yukon River mouth area settlements in the early 1960s and the construction of a school in 1962, the population of Kotlik swelled with residents from the villages of Caniliaq, Hamilton, and Bill Moore's Slough (Griffin, 1996).

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[3] Before the arrival of Western oriented housing structures, the Yup'ik lived in partially subterranean homes made largely of driftwood. Men lived together in a communal house , *qasgiq* in Yugtun. The *qasgiq* served as the community center.

4.3 The Yup'ik People of Western Alaska

The Yup'ik are the indigenous peoples of western and southwestern Alaska. It is estimated that more than 22,000 Yup'ik people are currently living in Alaska, with the vast majority living in rural locations in the Yukon-Kuskokwim delta and largely continuing a subsistence way of life. *Pastulirmiut* is the term for the peoples inhabiting the mouth of the Yukon River. The term derives from *Pastuliq*, which is the name of an abandoned village not far from the present location of Kotlik (Jacobson, 1985, p. 5).

The name Yup'ik (plural *Yupiit*) is the self-designation of the indigenous people of western Alaska and is derived from the word *yuk*, for "person," plus the post base *–pik*, meaning "real," or "genuine." Hence, it means literally "real or genuine people." According to Yup'ik beliefs, and similar to many indigenous beliefs found throughout the world, the Yupiit considered themselves the "real people." The use of the apostrophe in the name "Yup'ik" exemplifies the Central Yup'ik orthography compared to the Siberian "Yupik," or Yuut.

Yup'ik people of the Yukon-Kuskokwim delta speak the Central Alaskan Yup'ik language, which in the 19th century was one of five Yup'ik languages internally divided into four major dialects. The Yup'ik languages are still very widely spoken, with an estimated 18,950 speakers, making it the most widely spoken Alaska Native language (Sibens & Tiffany, 2011, p. 2). The Yup'ik people living near the mouth of the Yukon River, the Pastulirmiut, are part of the Yugtun-speaking members of the Inuit cultural unit, which extends from the Pacific Coast of Alaska to Canada's Arctic coast and into Greenland (Moncrieff, 2007).

While many other regions of indigenous Alaska were experiencing drastic sociological change fueled by missionization and resource exploitation, the

relative lack of commercially valuable resources meant that the Yukon-Kuskokwim delta region experienced the direct influences associated with non-Native contact at a comparatively later time period. However, Yup'ik lifestyles have changed considerably since the arrival of Westerners during the 19th century. Russian Orthodox missionaries, who were among the first outsiders to interact with the Yup'ik people, arrived in the Yukon-Kuskokwim delta by the 1840s. By the late 1800s, Moravians and Jesuits began to establish missions throughout the region, with the Jesuits taking the lead role near the mouth of the Yukon River. Unlike the more tolerant Russian Orthodox, both the Moravians and Catholics employed an intensive strategy designed to undercut the traditional ways of the people by eliminating pre-Christian ritual acts, such as masked ceremonies, and promoted a more "civilized" way of life. This involved not only forcing the Yup'ik people to adapt to Christian religious beliefs, but also imposing the English language and American culture on the people as well (Oswalt, 1963, p. 157).

Because of epidemics brought on by non-Natives, up to 60% of the Yup'ik population would die due to the illnesses during the early twentieth century (Napoleon, 1996). The 1918 influenza epidemic also referred to as "The Great Death," killed entire families and wiped out entire villages. An outbreak of tuberculosis in the 1930s and 1940s resulted in continued suffering for the Yup'ik people. Famine, starvation, and disease resulting from the epidemics continued to plague the Yup'ik peoples until the 1950s resulting in countless more deaths and loss (pp. 10-13).

Other major changes include the social reforms of the 1960s, the Alaska Native Claims Settlement Act of 1972, and the Alaska oil boom of the 1980s supported the establishment of modern villages. Houses with electricity have replaced the *qasgiq* (men's house), snowmobiles have replaced dog-teams, and motorized boats have replaced the kayak. However, despite these changes the

Yup'ik people continue to hold onto elements of their pre-Christian worldview, including the belief that all animals possess personhood (*yua*) and that the natural world is responsive to human thought and deed. People still believe in a cyclical process of life and many have learned to adapt their religious beliefs in a way that allows them to become genuine Christians while also still being Yup'ik. Many Yup'ik continue to speak Yugtun, access a rich oral tradition, hold potlatches, and gather wild food from the land (Fienup-Riordan & Rearden, 2012, p. 18).

Figure 5.1 A beluga whale is brought to shore. (Photo by Chad M. Cook)

Chapter 5: Documenting Yup'ik Subsistence Practices

5.1.1 Beluga Whale Hunting Ethnographic Description

Emmanuel, Mary, and I motored along the northern coast of the Yukon River delta, traveling a few miles from shore in search of a beluga whale in a 24-foot aluminum skiff. The sun still hung well above the horizon, even though it was after 10 p.m. It was the middle of August. We looked for any sign of whales. Because of their distinct white color, I imagined spotting a beluga would be relatively straightforward and that I should just look for a white hump breaking the water's surface. But as we got further from shore we started to encounter more and more choppy water with whitecaps breaking in all directions. I suddenly realized that with weather conditions like this, being able

to identify a beluga purely because of its white color is nearly impossible unless it surfaces for air right next to the boat.

As we traveled along Mary informed me that Kotlik residents most commonly go beluga hunting later in the year; right before freeze-up. But the last few years Emmanuel and Mary had missed their chance to catch a beluga because they waited too long. Mary told me, "This year we are not waiting."

We drifted several miles from shore and nearly an hour later there still were been no signs of beluga. The previous night we had also been searching for a whale to hunt, but only came across a juvenile, which are easily distinguishable because of their smaller size and bluish-gray skin color. Just like a juvenile bald eagle doesn't gain its distinctive white head until maturity, beluga whales do not form their distinctive layers of white skin until they're about 5 years old. Mary told me, "People from Kotlik don't hunt gray whales."

As we continued scanning the horizon of the Bering Sea coast looking for a beluga, I noticed that Kotlik residents Joe, Chris, and Barb were nearby in a separate boat also on tsshe lookout for whale.

It seemed like our chances of catching a whale began to diminish with the ever so slightly setting sun as it was already nearing 11 p.m. However, just as my hopes began to fade, Emmanuel had spotted a pod of belugas less than a mile away and we raced toward them. Looking behind I realized Joe had spotted the same pod of belugas, and that he too was converging on the pod. The chase had officially begun!

We converged on the whales fast. Initially, I had trouble tracking their wake, but it was as if Emmanuel had an innate sense of where the belugas were heading. At first, unknowingly, we began tracking a mother beluga with a calf.

Just as residents of Kotlik do not hunt gray whales, they do not hunt mothers with calves either. Emmanuel turned around the boat and began scanning the horizon for a new whale to hunt.

With Emmanuel driving the boat, Mary stood near the front holding onto the bowline with one hand and a harpoon in the other. Before long Emmanuel had singled out an adult white whale, motoring as closely as possible behind its wake. Mary got a clean throw off that looked like a direct hit, but for whatever reason the harpoon tip did not sink into its flesh. Emmanuel halted the chase to turn around the boat and collect the harpoon.

Just as we were about to resume, we heard shouts from a distance and realized that Joe had successfully harpooned a whale. Emmanuel quickly decided that, "one will be enough for us," and rushed over to help haul in the catch.

Before long Joe had safely hitched the harpooned beluga to the stern of his boat and began towing it to shore. We made a direct line toward the nearest bay and beached the whale on a grassy field so it could be processed before darkness.

It was a joyous moment and a time of celebration. "Lots of mangtak*!" "Wahoo!" "I'm glad we got whale before we got moose," Mary said. "But too bad Lolly's not here; he really missed out!"*

Figure 5.1.1 *Mangtak*, a Yup'ik delicacy. (Photo by Chad M. Cook)

5.1.2 Beluga Whale Hunting Overview

The beluga whale (*Delphinapterus leucas)*, also commonly referred to as "white whales," or *cetuaq* in Yugtun, utilize the coastal areas of the Yukon River estuary during the ice-free period from breakup in May or June until freeze-up in October or November. The *Kuigpagmuit* (Yukon River delta residents) have historically relied on marine resources for their livelihood and beluga whale hunting remains an important source of subsistence food.

Adult belugas range from eleven to fifteen feet long and typically weigh between 1,000 to 2,000 pounds, making them relatively small in comparison to whales taken off the northern coast of Alaska (e.g., the bowhead whale). At birth beluga whales measure approximately 5 ft long and weigh 90 to 130 pounds.

Unlike adult belugas, neonate belugas have a darkish gray colored skin. Not until they reach the age of maturity, when they are between 5 to 8 years old, will their skin reach fully white in color (Alaska Department of Fish & Game, 2008, p. 87).

The most common source of food for the beluga is Pacific herring (*Clupea pallasi*), which is found throughout the Norton Sound and Bering Sea region. Salmon, whitefish, flatfishes, capelin (*Mallotus villosus*), Pacific smelt (*Thaleichtys pacificus*), cod (*Gadus macrocephalus*, and sculpins (*Cottus cognatus*) are also major sources of food for the beluga. The majority of feeding is done spread across the continental shelf and in near shore estuaries and river mouths. During the summer months beluga frequent the mouths of the Yukon River where they feed on salmon. According to historical reports, belugas have traveled several hundred miles up the Yukon River following migrating salmon. In 1982, they had been reported being seen near the village of Tanana, 750 miles from the mouth of the Yukon River. In 1993, four belugas were also reportedly seen near Fort Yukon. In more recent years, belugas have been occasionally observed at Mountain Village, nearly 100 miles upstream (ADFG, 2008, p. 88).

According to estimates based on aerial surveys of the Norton Sound and Yukon River delta region, the estimated population for the eastern Bering Sea stock is 28,406 beluga whales (Allen & Angliss, 2013). These recent surveys helped confirm that the eastern Bering Sea beluga stock remains quite large and healthy. The eastern Bering Sea beluga whale stock is not listed as “depleted” under the Marine Mammal Protection Act, or listed as “threatened” or “endangered” under the Endangered Species Act (pp. 76-77). The total amount of subsistence take of beluga whales from the eastern Bering Sea stock averaged 192 during a 5-year period from 2005-2009. According to these harvest numbers, present subsistence harvesting practices by rural Yup’ik residents remains well below the estimated 5% sustained yield, helping to ensure the healthy existence of beluga populations for future generations (Allen & Angliss, 2011, p. 78).

Commercial fishing in the Yukon River delta region primarily consists of set net and drift net methods for various species of salmon and whitefish. These methods are not considered to be harmful to the beluga populations. However, belugas are known to occasionally tear large holes in commercial fishing nets and there have been reports of fatal entanglements (Allen & Angliss, 2013, p. 77). Considering the price of purchasing a new net, having a beluga tear through commercial fishing gear can be an expensive misfortune for local fishers.

The Eastern Bering Sea stock of beluga whales are currently managed by the Alaska Beluga Whale Committee (ABWC), a co-management agency whose mission is to manage, conserve, and research beluga whales. Comprised of scientists and hunters, ABWC is responsible for managing all populations of belugas in Alaska, except for the Cook Inlet population (ADFG, 2008, p. 64). ABWC signed a cooperative agreement of co-management with National Marine Fisheries Service (NMFS) in 1999 with the mission of helping to maintain healthy populations of beluga whales in northern and western Alaska waters and to protect the subsistence harvest of beluga whales for qualified subsistence hunters.

The committee has been viewed as a highly successful example of a co-management group, recently receiving a National Oceanic and Atmospheric Administration (NOAA) Environmental Hero Award. ABWC has provided a forum where scientific and Alaska Native perspectives can come together to work toward common goals and increase levels of understanding across different groups. ABWC members help scientists collect samples for DNA testing and other forms of analysis, while also providing updated subsistence harvest reports (Huntington, 2010, p.3). Alaska Native committee members not only assist in Western scientific research oriented goals, but they also help to oversee that such practices are conducted in a culturally sensitive manner. For example, a method

of satellite tagging to track beluga migration was criticized as being cruel and potentially disrespectful to Yup'ik beliefs.

The beluga has a special significance to the people of the Yukon River delta and continues to be treated with great respect. In the past, the tradition was when a beluga was caught, a song was offered to its *yua* in hopes that it would return and again give itself to a noble hunter. Certain hunting taboos included never hunting for beluga with iron-tipped harpoons. Today, modern Yup'ik hunters continue to show respect for the spirit of the animal by making sure not to waste the food it provides and sharing the meat within the community. Unlike fish, which is shared primarily within an extended family unit, beluga is shared among everyone in the community. Mary told me, "If it was Joe's first catch, he would have given it all away. So, when Lolly catches a beluga, we will have to give it to the elders first. We will give it all away. That's our tradition. We do this so it will come back even more, when he gets older, whatever he hunts will come back; more than what he gave away. It comes back to us."

Before the introduction of outboard motors and modern boats, the Yupiit would hunt belugas using sealskin kayaks. Belugas are known to be sensitive to noise, so an advantage of hunting with kayaks is that it allowed for hunters to approach the whales without causing panic. Once a pod had been surrounded, hunters would drive them toward shallow waters where they could be speared and taken to the nearest shore and butchered. Another hunting method involved using set nets along the shoreline during the fall season when stormy weather would make the mesh difficult for the whales to see. Up to 50 whales could be taken using this method providing for a tremendous amount of meat and oil for local consumption and trade (Fienup-Riordan, 1986, p. 117).

At low tide, belugas commonly gather at the end of the ocean flats where they wait to feed on the salmon attempting to go upstream to spawn. Ethnographer E.W. Nelson (1899) recorded an encounter with the beluga whale:

> Along the low, flat coast from Saint Michaels to the Kuskokwim River are many tide creeks running back into blackfish marshes. From midsummer until these streams freeze over they abound in tom-cods. In pursuit of these the White Whales go up these streams regularly every night after darkness has settled over the land, and while camping on the banks of these streams I have heard dozens of them blowing with a quick, forcible, hissing or sighing sound as they hunted up and down the creek. They hunt about the Yukon mouths at night in the same way and are found just off shore among the flats and sand bars during the day (p. 136).

Emmanuel informed me that one of the best times to hunt a beluga is when the tide starts to come in. A hunter should wait near the mouth of an estuary in hopes of catching a beluga feeding on migrating fish. I overheard Emmanuel share this method of hunting to a young man from the upriver village of Russian Mission. Knowledge of feeding habits associated with the movements of the tide can be effective hunting strategies that become acquired through experience and are shared among family and friends. In this sense, strategic hunting takes place not at the convenience of the hunter, but rather during proper conditions when belugas are most likely to come closer to shore. Hunters must learn to adapt to the natural fluctuations of their environment in order to maximize efficiency and avoid troubling situations such as being caught in the flats during low tide.

Hunting close to shore is done for a variety of practical reasons such as safer boating conditions, closer distance for towing to shore, and less consumption of gas. Hunting is often dependent upon weather conditions.

During the month of August when salmon are still migrating upstream there is basically no reason to hunt more than 5 miles from shore.

The *cavek,* or harpoon, used for beluga whale hunting is normally the same as the harpoon used for seal hunting. The harpoon is thrown by hand, without the throwing board, or *nuqaq*, which is described in greater detail in the following chapter on seal hunting.

Yukon River delta hunters continue to use older traditional hunting methods during beluga hunts. The whale is first hit with the *cavek*, a harpoon with a detachable head. After the harpoon has successfully penetrated the skin of the whale, any attempt by the whale to dive underneath the water will cause it to tire as the buoy, attached by line to the harpoon, forces it to come up while also serving as a navigational mark for the pursuit. Just as in hunting seal, this method is used to minimize the chances of losing a catch. Not until successfully harpooned with the line safely attached to the boat will a fatal shot be fired causing immediate loss of consciousness and death. Once the whale has been successfully killed a rope is tied around the beluga's tail and it is towed to shore for processing.

Mangtak, beluga skin with a layer fat attached, is considered a delicacy among the Yupiit. *Mangtak* is most commonly eaten either raw or boiled. Here Nelson (1899) describes the use of belugas by the Yup'ik people:

> The flesh of a young beluga is tender and not unpalatable, but is rather coarse and dry. The fat, or blubber, is clear and white, and is considered to be much superior to seal-oil by the Eskimo and Indians. The intestines are made into waterproof garments or floats, and the sinews are very much prized. Their small ivory teeth are carved into toys or ornamental pendants. The skin is made into

> strong lines or very durable boot-soles. When well-cooked the skin is considered choice eating and is really pleasantly flavored. This refers to the epidermis, which is nearly half an inch thick, soft, and has a flavor recalling that of chestnuts (p. 268).

Nowadays people hunt beluga primarily for the *mangtak*. This remains a favorite delicacy among the people of Kotlik and the lower Yukon River delta region. During my experience, only the *mangtak* was harvested from the whale. It was noted that back when people had dog teams the meat was used to feed the local dogs, but that nowadays people hunt beluga for the *mangtak*. Chris, who helped catch the beluga in the ethnographic description in the previous section, told me that even the village ravens would be making sure that all of the meat and carrion would be eaten and that nothing would be left to waste. He then pointed toward the eastern horizon and I noticed a large gathering of sea birds flocking toward our direction. A week after the catch there was also local reports that people had spotted a brown bear feeding on the leftover whale carcass.

The following day after the beluga was caught we spent the morning cleaning and vacuum sealing the *mangtak*. Mary invited over friends and family members so that others could take home a portion of the catch. Joe, Barb, and Chris likely did the same and in that way the meat was spread throughout the community. *Mangtak* is commonly shared with anybody in the community, not just nuclear family units. Mary said that the meat is shared with whoever is willing to take it. People take enough for themselves and then give the rest away to make sure that the food is not wasted in hopes that they will be rewarded with another catch in the future. This is also a way of showing respect to an animal's *yua*. These types of sharing practices emphasize the importance of reciprocity in Yup'ik society.

Figure 5.1.2 Beluga whale fluke. (Photo by Chad M. Cook)

5.1.3 Beluga Hunting Summary

The information that I was able to document about beluga whale hunting practices in the Yukon River delta was based on three different hunts, one of which successfully ended in a catch. I was able to observe the whale hunting practices of an extended family, and based on my experiences major themes emerged such as the importance of sharing the catch, treating the land with respect, eating Native foods, maintaining social identity through sharing, and the importance of not being wasteful. But probably the most fundamental theme is the notion that conservation of beluga whale populations is mediated through a social relationship that hunters have with their catch. This relationship is maintained through the following of culturally appropriate rituals such as honoring the spirits by offering a prayer and an awareness of the animal's

spiritual being. If the culturally prescribed rituals are not followed, it is believed that animals will become less plentiful in the future and possibly even non-existent.

Changes over time in beluga populations and distribution, in the size and timing of fish runs, climate change, and the possible effects of beaver dams on food supplies are all other potentially significant factors that could affect subsistence practices for local residents. Understanding and documenting these changes will help to ensure that a healthy population of belugas will be conserved for future generations of hunters and local residents. Integrating the knowledge of local residents and hunters is an important tool in helping to make sure that healthy numbers of belugas will remain for future generations, emphasizing the social element of successful wildlife management. In that regard, the ABWC has succeeded in moving in the right direction. If local accounts are true that less beluga are migrating throughout the Yukon River delta region, one source of attention must be placed on the overall health of the ecology of the Yukon River delta region, such as a reduction of salmon in the region and the possible effects of by-catch by offshore commercial fisheries. Unfortunately, I did not have the opportunity to research this issue as thoroughly as I would have liked, and I would suggest it is an area ripe for future research.

Figure 5.2 Hunting seal near the Bering Sea coast. (Photo by Chad M. Cook)

5.2 Seal Hunting Ethnographic Description

"I hope we chase a seal, any kind of seal," Lolly said. It was a beautiful afternoon in late July; blue skies with patchy white clouds and warm weather. Emmanuel, Mary, Lolly, and I were drift netting for summer chum salmon, so catching a seal didn't seem to be on the agenda. Today was a day just to catch fish, or so I thought.

Sure enough, less than five minutes later, as we made our way around a sharp corner heading toward a new fishing hole, we saw a maklak, *Yugtun for bearded seal, just before it slid back into the river. Mary shouted, "*Maklak*!" But it had happened so fast nobody could say for sure that it was a seal. With the engine of the boat lightly idling, we patiently waited in hopes that a seal would*

surface the water. Within a few minutes a maklak surfaced for a breath of air and Mary shouted, "Over there!"

Emmanuel then let a call of, "Hey, hey, hey!" and suddenly the chase was on. Emmanuel quickly pushed down the throttle in the direction of the maklak, while Mary and Lolly grabbed their nuqaq (spear thrower) and nanerpak (spear) from the stern of the boat. Before a spear could be thrown, the maklak *ducked back underwater out of view. Emmanuel and Mary's daughter Bee, who was fishing nearby, was alerted to the news via marine radio and quickly joined in hunt with her boyfriend Albert and her two sons, Mason and Kyrel.*

During a chase, as a seal hunt is locally referred to, everybody wants to be the first to hit the maklak. *Whoever lands their spear first will claim credit for the catch. On this day, it was Mary who ended up hitting the* maklak *with a spear toss from about 20 yards away. Shortly after the seal had been speared, Albert secured the catch with a harpoon, and Lolly fired the kill shot with his new .22 rifle. The* maklak *was then pulled into our boat and placed into a plastic tub. Mary told me that it was the first seal that she had caught in years and with a potluck upcoming in Kotlik the following week the meat and oil would serve as a special gift, especially for an elder.*

Once the maklak *had been safely brought into the boat, we quickly got back to drift netting for salmon. Commercial fishing opportunities don't happen every day, so it was time to put the nets back into the water to help offset the costs of living an active subsistence lifestyle.*

We continued to fish until the opening closed at 10 p.m., and then headed toward the nearest tender to drop off the catch. In total, we caught a little more than 60 chum salmon, a few pinks, and maybe a whitefish or two. Not a bad

day's catch. Afterward, we scrubbed the boat clean and then met up with Bee to agree on a place to process the seal.

In the old days, when a maklak *was taken to land, it was always the woman who was responsible for processing a seal. But now anyone can help. With Mary and Bee taking the lead roles, the seal was quickly skinned, gutted and divided up. Lolly and Mason watched their grandmother closely, quickly getting their hands dirty and helping out anyway they could. Mary pointed out all of the major parts of the seal's anatomy, while Lolly and Mason watched in close detail.*

After Mary had finished dividing up all of the major pieces of the seal she told me that, "We toss the head of the maklak *back into the water so that its spirit will be reborn. It is a way of saying thank you." As she began to toss the seal's head back into the river she lightly called out, "Ataam taikina," which literally translates to "Come back again." The phrase "ataam taikina," served as an appropriate metaphor of underscoring the Yup'ik peoples continued spiritual relationship with animals and the natural world.*

Figure 5.2.1 *Nanerpak* (spear) and *cavek* (harpoon). (Photo by Chad M. Cook)

5.2.2 An Overview and Description of Seal Hunting Practices

During my field research of documenting modern seal hunting practices by residents of Kotlik, I had the opportunity to participate in hunts of two species of seal: the bearded seal and the ringed seal. The following section will provide a brief overview of each species before moving into seal hunting practices.

5.2.2.1 Bearded Seal (*Erignathus barbatus nauticus*) or *Maklak*

Bearded seals are the largest seal in Alaska, occasionally weighing up to 750 pounds and averaging almost 8 ft in length. Their common name derives from their prominent whiskers. Bearded seals are usually solitary animals that make seasonal migrations as they follow the movement of sea ice and food

resources. Although they are more commonly associated with icy conditions, many seals remain in ice-free areas such as the Yukon River delta where they frequent the region's estuaries and coastline. Males are generally larger, as a female can attain a weight of almost 600 pounds compared to 700 pounds for a male. According to population estimates, there are a total of 63,200 bearded seals within the Bering Sea region (Cameron et al., 2010, pp. 3-4).

During my experience in Kotlik, the vast majority of seals that residents hunted were *maklaks*. Based on my observations, this is largely a product of availability and also that of local preference. Due to their larger size, a greater quantity of meat is obtained after a successful hunt and the overall quality of the meat is generally preferred as well.

5.2.2.2 Ringed Seal (*Phoca hispida*) or *Nayiq*

The other species of seal commonly hunted by residents of Kotlik are known as *nayiq,* or ringed seal. The color of ringed seal can vary, but they are typically dark with silver rings on both their sides and backs (Taras, 2007, p. 6). Ringed seals are the smallest and most widespread seals found in the Arctic. Adults in Alaska commonly range about 5 ft in length and up to 150 pounds. Ringed seals are known for having a thick layer of blubber, thickest during winter and early spring, which helps to provide insulation and can be used as a source of nutrition for rearing young pups. Despite an estimate worldwide population of 2 million, ringed seals are currently listed as "depleted" under the Marine Mammal Protection Act (Citta, 2008).

During the course of my field research, I had the opportunity to observe one seal hunt involving a *nayiq* (Yugtun for ringed seal*)*. Despite their differences in size, the hunting methods for both *nayiq* and *maklak* are largely the same. *Nayiq* are preferred for their oil. Seal oil is a Yup'ik delicacy, often used as a dip

for dried fish, strips of beluga, or any kind of meat. *Nayiq* meat is not as preferred as *maklak* meat, so after the *nayiq* oil has been gathered and stored it is fairly common to feed the leftovers to local dogs rather than being used for human consumption. This depends on personal preference of individual households and the overall availability meat.

Coastal Yup'ik communities have relied on seals more than any other sea mammal, and seal continues to be a key resource for the people of the lower Yukon River delta region. Seals and seal hunting figure heavily in cultural and ceremonial iconography and storytelling. For example, a young man's first seal kill remains an important occasion and is followed by a ceremonial distribution of the meat. In numerous ways, seals and humans continue to embody close reciprocal relationships bound from the practices of countless generations. For example, according to local beliefs, like human beings, seals continually pass through the cycle of death and rebirth. For example, many seal hunters believe that they have caught the same seal year after year after year. This reflects how the rebirth of animals operates on a yearly cycle contingent upon a social relationship with humans.

Figure 5.2.2 *Nuqaq* (spear throwing handle). (Photo by Chad M. Cook)

5.2.2.3 Seal Hunting Methods and Hunting Equipment

Before the introduction of boat motors, the Kuigpagmuit hunted seal by kayak in the rivers, sloughs, and coastal regions of the Yukon River delta. Although today local residents hunt seals using aluminum skiffs with outboard motors, certain older traditional seal hunting methods continue to be practiced because of their practicality and effectiveness. In Alaska, this method of hunting seal is most prevalent in the Yukon River delta where hunting in fresh water conditions significantly increases the chances of a lost catch. The buoyancy of saltwater helps keep a recently killed seal afloat, whereas in freshwater they are much more likely to sink. Hunting seals by the use of throwing boards, spears, and harpoons via kayak or umiaq has long been practiced from Prince William Sound to the Aleutians Islands to the Bering Strait. In the far east of Russia, a

similar method of hunting seal in freshwater continues to be practiced by Koryak hunters on the western shore of Kamchatka.

The *nuqaq*, or throwing board, is typically the length of the hunter's elbow to the end of his forefinger. The *nuqaq* increases the distance, speed and power of the spear by artificially lengthening a hunter's arm. The butt of the spear rests on a wooden peg at the end of a shallow groove on the throwing board, waiting to be released when the hunter makes his throw. The *nuqaq* and *nanerpak* are held in throwing position, arm raised shoulder length, while the spear is resting on the throwing board with the help of the ring and index finger in hopes a seal will surface in accurate throwing distance (Fitzhugh & Kaplan, 1982, pp. 81-82). Research participants expressed that the ideal feather tips of the *nanerpak* are cormorant feathers, which are favored because of their ability to resist the build-up of water. The estimated length of the *nanerpak* is about 3 times the size of the *nuqaq*, although they will vary in length depending on personal preference.

The *cavek*, or harpoon, serves as an important tool because it prevents a seal (or beluga) from sinking. Traditionally, the size of the harpoon or spear used was designed to the specific sea mammal that was being hunted. For example, a harpoon designed to take a *maklak* would differ in size and weight from a harpoon designed to take a *nayiq*. Before the modern use of buoys, a sealskin poke[4] would be attached to the shaft of the spear. In the case of hunting a whale, as many as three sealskin floats may be tied to the harpoon line, which would greatly increase the drag. Early ethnographic accounts described harpoon finger rests that were carved out of ivory or bone often representing the head of a seal or another animal. Finger rests were used to help increase accuracy and also were believed to help attract seals (Fitzhugh & Kaplan, 1982).

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[4] Dried and inflated sealskins, or pokes, were used for storage before the introduction of plastic bags and 5-gallon buckets and buoys.

A harpoon or spear tip is designed to cut beneath the skin and to turn sideways, by means of a toggle, in the flesh as the animal pulls away. As such, the spear and harpoon tips were not designed to kill the seal, put to impede the free movement of the animal (Oswalt, 1991, p. 59). E.W. Nelson (1899) describes this process:

> When the spear is thrown, the barbed point, when imbedded in the animal, is immediately detached from the head of the shaft, to which it remains attached only by the sealskin cord which has been wrapped around the shaft; as it unwinds the shaft of the spear is drawn crosswise after the retreating animal, and serves as a drag to exhaust its strength and rendered it more easily overtaken by the hunter (p. 136).

Once the spear tip has been embedded into the seal, a hunter is able to predict where it will rise for its next breath of air. The seal is then hit with a *cavek* so that it can be safely killed without being lost.

In the past, Yup'ik people relied on seals primarily for their meat, oil, and skin. The most common methods of preparation included drying the meat, storing raw meat in deep holes in the ground, or drying the meat and storing it along with blubber inside of a seal poke. The oil was used in lamps, as a condiment for food, and for preserving greens and meat. The hide and sinew were commonly used as clothing, rope, nets, and for sewing. Sealskin could be used to make a large storage bag and various storage containers. Sealskin could also be used to make strands for rope and were used to make *maklak* skin boots. Intestines were used to make waterproof parkas. And even the fur of an unborn pup was used as a favorite trimming for clothing (Ray, 1975). Seals were never left to waste and hunters made sure to utilize all of their catch.

Preparation of seal meat can be done in a variety of ways, but probably the most common way is to boil it. Frying the meat is another common method. Among the organs, the liver, kidneys and heart are most commonly eaten. Seal liver is often eaten raw immediately after the animal has been taken. The seal's trachea is commonly chewed after it has been freshly killed as well. This tradition is a favorite among young boys and is referred to as "gum."

In order to collect the seal oil, the fat of the seal is removed with an *uluaq*, or semi-circular knife, cut into strips, and the strips are then put into a 5-gallon bucket. As the days go by the fat drains out, and by a couple of weeks the strips and oil are fully separated. The strips of fat are commonly fried and eaten as well.

Speaking about the uses of seal oil, Mary describes the various ways people use seal oil, "Any kind of fish if they're dry, frozen fish, black fish, loche fish, people like seal oil mostly on fish; some other meats, birds, boiled seal meat. It is a dip. When we were growing up my mom use to put a tablespoon of seal oil into the *akutaq,* but we didn't like that. You can use seal oil for crabmeat. Really good fat. It is energy food." During the course of my stay in Kotlik, a glass jar of seal oil would commonly be left out on the table any time we ate dried fish or other traditional foods.

5.2.3 Seal Hunting Summary

Throughout the course of my research I had the opportunity to observe a total of five different seal hunts, all of which ended in a successful catch. My host family caught two of them, both being bearded seals (or *maklaks)*. The hunts varied in location: two were located just outside the village of Kotlik; two were located near the mouth of Kuigpak Pass and the Bering Sea coast; and one was near the confluence of Kuigpak Pass and Aprun Pass.

Local perceptions of the current health of seal populations in the region were often described as potentially diminished compared to the past, but still sufficient for the community's needs. Although there may be fewer seals, people still have enough for subsistence purposes. Although people may have to travel farther or spend more time before catching a seal, there is still a sufficient population to fulfill people's subsistence needs.

From the perspective of traditional Yup'ik beliefs, seals offer themselves to people as gratitude of respect and a merit of an individual's worthiness as a hunter and a person. It is believed that hunters are awarded this sacrifice because they've been following the rules and will continue to follow the rules that dictate proper relationships among seals and humans (and humans and the natural world). A seal will give its life so that a person can live, but it gives its life for only a temporary period of time, as its *yua* shall be reborn upon proper treatment after its death. This treatment includes the etiquette of leaving no waste, obeying the proper cultural taboos, and giving thanks to our Maker. Humans will offer prayers to a seal so that it can come back again and return to repeat the cyclical process of life, death, and back again.

For many Yup'ik people, conserving animal populations involves the continuance of a social contract that is shared among humans and animals. Because of age-old traditions, this is especially true with seals. By offering a prayer of thankfulness and returning the seal's head safely back into the water, Yup'ik hunters continue to practice a spiritual bond. Whoever returns the head of the seal back into the water is primarily responsible for asking for the seal's return. However, anyone can offer a prayer for a return. When spoken after a successful seal hunt, the phrase "*ataam taikina*," literally meaning "come back again," illustrates the Yup'ik cycle of life. Respectful hunters who follow these rules, who treat seals according to culturally attuned values, are helping to ensure

that this relationship will continue on. Hunters are dependent upon animals for life, because without animals people could not survive. Seals are dependent upon successful hunters who are aware and conscious to the socially defined rules. Gifts are not only received from the land, but they must also be returned as well. This is how land becomes sentient. This is the essence of conservation from a Yup'ik worldview. The spiritual beliefs and practices of Yup'ik seal hunters help maintain the integrity of the ecosystem by emphasizing the sacredness and sentientness of life. These types of spiritual understandings and worldviews can help foster environmentally sustainable lifeways, while also maintaining people's traditional ties to the land.

Figure 5.3 Gathering berries near Caniliaq, Alaska. (Photo by Chad M. Cook)

5.3.1 Gathering Wild Berries Ethnographic Description

After a week of rainy weather, the clouds had parted and we were finally due for some sunshine. With a light breeze blowing to help keep away the mosquitoes, we had perfect weather to spend a day on the tundra gathering berries.

After loading our supplies in the boat, we left Kotlik for Hamilton sometime late in the morning. After traveling along Aprun Pass, one of the main arteries of the Yukon River, we reached the abandoned village of Hamilton. We continued to motor up a narrow slough, passing numerous places where the berries appeared thick enough to begin picking. The bright reddish-orange color of a tightly clustered patch of salmonberries can easily be detected, even from a

low-lying boat. But we continued to travel up the slough until we reached our pre-determined destination. After anchoring to shore, we each grabbed a bucket and set out to start picking.

Initially, everyone spread out following their own intuition as to where to begin. The berries were visible in every direction. After taking in the view, a seemingly endless sprawl of tundra with the beautiful Nulato Hills far off into the distance, I began to get to work. Walking on the delta's tundra presents challenges as the ground begins to give way and sink on every step that is taken. However, it wasn't long before I quickly adjusted to traveling across the large mounds of soggy tussocks, learning to find my stride as I scanned the tundra in search of berries.

My method of picking varied depending upon the density of the berry patches. I found the most effective method was to get down on my hands and knees and start picking as fast as I could. Other times I stood afoot, hunched over as I grazed away. With practice, I became more and more efficient. One aspect of showing respect toward the land involves taking advantage of the gifts that it offers. The weather conditions were perfect and the salmonberries were peaking. There are only so many opportunities with such prime berry picking conditions, and it could be seen as disrespectful to not take advantage of the opportunity. Now was the time to gather fresh fruit for the long winter ahead.

Gathering berries is a perfect opportunity to reflect on the importance of people's relationship with the land. I learn that Mary's mother lived in Hamilton many years ago. She told me how when she was a child her family would camp in this exact spot and not return home until they had filled a 50-gallon drum with berries. Nowadays there are still a few houses at Hamilton, but it's mostly empty, as people have migrated to nearby villages such as Kotlik or Emmonak.

During our lunch break Mary told me how after the passage of the Alaska Native Claims Settlement Act in 1971, her mother had received a land allotment for this piece of land and they've continued to gather berries here since. This idea of "ownership of the land" reminded me of a conversation that I had with Emmanuel just the previous day.

I had asked Emmanuel if people claim certain berry picking spots as their own. His answer was that, "some people think they own the land, but nobody owns the land. You can't own the land. After ANCSA, people started thinking they own the land, but you can't own the land." In the Yukon River delta, it is commonly believed that the berries will always be here as long as the people continue to share. Although people continue to gather from customary locations, even owning land allotments, the importance of sharing remains a deeply rooted Yup'ik belief. Those who do not share are believed to be stingy and are the most likely not to be rewarded in the future. Emmanuel said that there are a few people who act like they own the land, thinking they own certain berry patches, but most Kotlik residents freely share what they have.

By the end of the day we had picked a total of 13 gallons of salmon berries among the five of us; not a bad day's haul. As the sun began to set we loaded into the boat and began to make our 15-mile journey home.

5.3.2 Gathering Wild Berries Overview

Yukon River delta residents continue to harvest a variety of different types of berries including cloudberries, commonly referred to as salmonberries, (*Rubus chamaemorus*), or *atsapik*; blueberries (*Vaccininium uliginosum*), or *curaq*; crowberries, commonly referred to as "blackberries," (*Empetrum nigrum hermaphroditum*), or *paunraq*; lingonberries or lowbush cranberries (*Vaccinium vitis-idaea minus*), or *tumagliq*; highbush cranberries (*Viburnum edule*), or

kitngik; and two species of raspberries (*Rubus idaeus* and *R. arcticus sp.)*, or *puyuruaq* in Yup'ik. Despite the variety of berries found throughout the Yukon River delta, the unquestioned favorite among the Yup'ik is the salmonberry.

Wild berries are high in vitamin C and are used in many types of desserts like jams, toppings, and especially *akutaq* (Eskimo ice cream). Each year, Yup'ik families travel to local berry patches on the tundra to harvest supplies that will last throughout the year. Families often pick up to 20 gallons of berries each fall to last them all winter. Most residents travel by boat (aluminum skiff) to reach familiar berry patches. For Kotlik residents, the Caniliaq region serves as one of the most popular destinations because of its usual abundance of fruit and its close proximity to town. Families work together to handpick berries, store them in Ziploc bags, and freeze them for winter.

A traditional Yup'ik method to preserve berries involved wrapping the berries in grass baskets and submerging them in freshwater. This would be done in the summer and the berries could be gathered in the fall before the water becomes frozen. Most commonly salmonberries, blackberries, and cranberries were preserved in this manner, but not blueberries, as they were known to become soggy (Fienup-Riordan, 2007).

Figure 5.3.1 Salmonberries for *akutaq*. (Photo by Chad M. Cook)

5.3.3 Gathering Wild Berries Summary

Gathering berries provides an opportunity for residents to provide food for traditional and customary events that come up throughout the year such as *yuraq* (a traditional form of Yup'ik dancing), potlucks, and funerals. In describing the importance of sharing berries among friends and family, Mary said:

> We share during out traditional potlatches. In the village we share a lot of food and *akutaq* to take to the families. We do a lot of feeding when a death occurs in a person's home; it is something special when you bring *akutaq* to the mourning people. Normally people feed on the first anniversary of a death too. We share with family and friends and if they

> run out of berries they give us what we need. Berries are shared during special occasions.

Berries are not only shared on traditional and customary occasions, but they are also shared during any special occasion, such as Christmas or Easter.

The value of respecting the land is an important aspect of environmental stewardship for Yup'ik people. Showing respect to the land can be manifested in a variety of ways including not leaving behind waste, the continuation of relationships, and sharing the harvest. Gathering berries provides an opportunity for family members to spend time on the tundra and maintain traditional ties to the environment. The practice of gathering of wild berries helps to make sure that culture continues to grow as knowledge of place becomes passed on to children and grandchildren. Respectful attention to the land and mindfulness toward the lives of plants is a prerequisite of gathering wild berries, providing people with an education that gives them pride in their culture and deepens their sense of place.

Figure 5.4 Wormwood (*caigglu*k in Yugtun). (Photo by Chad M. Cook)

5.4.1 Yup'ik Traditional Medicine Overview

Another important aspect of my research involved local knowledge of traditional medicine. Although not intended to be a comprehensive overview of Yup'ik medicinal plants, this section highlights several important species of traditional Yup'ik medicine such as *caigglu*k and *ayuq*, which were observed during the course of my fieldwork. The use of traditional medicine, also referred to as etho-medicine, underlies local residents ability to identify the correct species, its location, the proper time of collection, the solvent to use, and the way to prepare it (Torri, 2010, p. 4). Many Yup'ik residents continue to gather wild medicinal plants for a variety of healing purposes, both physical and spiritual, continuing to put their ancestor's holistic traditional knowledge to use.

5.4.2 Wormwood (*Artemisia sp.*) or *Caiggluk*

Caiggluk (wormwood), as it is locally referred, remains an important medicinal plant used for a variety of ailments such as sore throats, fevers, arthritis and treating heartburn or indigestion by adding the leaves to food or drinking the juice. Other common names for *caiggluk* include 'stinkweed' and 'Eskimo Tums.'

A common method of preparing *caiggluk* involves boiling the leaves and buds in water and letting it cool overnight. Once done, the juice is drained into a jar and kept cool. "It keep's the cold away, kills the germs, and keeps you healthy," Emmanuel told me. *Caiggluk* can also be directly applied on the body for relieving pains such as arthritis, backache, muscle strains, sprains and cramps. The plants are cooked and the hot plants applied directly over the affected area and covered to retain the heat. For arthritis in the knees, the patient is required to soak the feet in solution while it is hot. The leaves of *caiggluk* can also be used for an astringent for cleaning wounds.

There are many stories of local people adapting to a strictly natural healing process, without the use of modern pharmaceuticals, and being cured of their sickness. For some people, modern medicine can be ineffective in bringing about proper healing. Relying on traditional medicines often integrates a spiritual element with the addition of the medicinal properties of the herb and a greater level of satisfaction associated with treatment by means of local/traditional methods as compared to treatment by Western medical doctors. This often results in local people attempting to overcome health problems by the use of traditional methods of healing (Sax, et al., 2010, p. 9). Emmanuel told me a story of a Yup'ik man from Kotlik who was cured of cancer from a strong steady diet of nothing but *caiggluk*. "It healed that man," he told me.

Another common method of using *caiggluk* among the Yup'ik people involves light whipping on the back while taking a steam bath[5]. Several stalks of the plant should be brought fresh into the steam bath to use as a skin stimulant and invigorator. After working up a good sweat, smack yourself along the arms, legs, and back with a small bouquet of the long leafy stems. This reduces the sting of the steam and creates a pleasant aroma. I found *caiggluk* to produce menthol, or icy-hot, type of sensation. *Caiggluk* is still commonly used among many residents of Kotlik today and is found in abundance.

5.4.3 Labrador tea (*Ledum decumbens*) or *Ayuq*

Labrador tea (*ayuq* in Yugtun, literally translated as 'carrying away'), commonly referred to as Eskimo tea, is a low shrub with evergreen leaves and a strong, pleasant aroma found throughout the tundra (Wolsko et al., 2006, p. 361). *Ayuq* is commonly used as a tea. The leaves can be chewed raw for its strong flavor and spit when finished. Although most commonly gathered during the summer, during the winter months *ayuq* can also be harvested in areas that have been blown free of snow. *Ayuq* has a strong somewhat bitter flavor that can be made sweet with the use of honey or sugar. Eskimo tea has been a favorite beverage among the Yup'ik people for countless generations and remains so today.

The first time I was exposed to *ayuq* during my field research was during a trip to Hamilton to collect salmonberries. Mary had gathered several handfuls of *ayuq* to be used as tea for our afternoon lunch. As Mary instructed me on the proper identification of *ayuq,* Lolly and Mason gathered around to watch as well. I learned what to look for, I realized that *ayuq* can be found in abundance all over the tundra and that it was practically everywhere. The *ayuq* Mary had gathered

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[5] Steam bath houses, or *maqiviit* in Yugtun, are ubiquitous throughout Yup'ik communities in the Yukon-Kuskokwim Delta region.

was put into a Stanley thermos full of hot water and let to steep for five minutes before being served. The *ayuq* tasted strong, even somewhat bitter I thought, but it became a flavor that I thoroughly enjoyed. Although Mary told me that she doesn't like to drink store-bought tea she told me, "I'll drink Eskimo tea any day."

Harvesting locally grown and wild tea offers local residents an opportunity to avoid spending money on store-bought teas that are brought in from the outside. These types of gathering activities continue to hold both economic and social value to many rural Yup'ik residents. Considering a box of store-bought tea can cost more than $5, drinking *ayuq* is not a bad way of saving money and still enjoying a delicious tea. Also, *ayuq* is a healthy alternative to sweet drinks such as soda and goes well with dried fish. Wolsko et al., (2006) note that there is also medicinal value associated with the use of *ayuq* and that it is commonly used as a treatment for colds, dizziness, stomach problems, heartburn, hangover and even symptoms of tuberculosis (p. 361).

The Yup'ik people have been utilizing the healing powers of *ayuq* since the earliest of times. During the traditional ritual of the Yup'ik Bladder Festival, dried *ayuq* was commonly tied in tight bunches and hung throughout the *qasgiq,* placed next to the hanging seal bladders and associated hunting gear. The tightly bunched *ayuq* would be burned like incense and the seal bladders and hunting gear (e.g., kayak paddles, harpoon, and spears) would be drenched in its smoke as a form of spiritual blessing (Keim, 2006). The leaves were also traditionally burned as a method of alleviating sickness, purifying a village after a human death, and as a method of cleansing a hunter.

5.4.4 Willow (*Salix spp.*) or *Uqviaq*

Willow continues to have medicinal and ecological significance to the Yup'ik residents of the Yukon River delta. Probably the best-known remedy of the

world, the leaves and bark of the willow are chewed for their pain and fever relieving properties. Willow bark contains an elemental form of salicylic acid, from which aspirin is made. The bark or leaves can also be boiled in water and used for medicine to cure head colds. Often growing along the banks of rivers and creeks, willow brush also provide important habitat for moose, especially during the winter season. Willow brush is also known to provide good bear habitat as well. Although willow bark was never utilized during my field research, its importance was pointed out to me during our trip gathering berries near Hamilton. Emmanuel told me that although willow bark is less commonly used nowadays some of the elders still prefer to chew on the bark for slight pain relief rather than using store-bought medicine, like Advil.

Several other plants are frequently used for medicinal purposes by the Yup'ik people including a tundra variety of chamomile, which produces a small hard yellow "berry." The berries can be chewed raw or boiled and drunk as a tea for stomachache or mouth sores. Also, stinging nettle leaves are boiled and eaten, and the tea drunk, for acne problems and pimples.

5.4.5 Yup'ik Traditional Medicine Summary

Yup'ik knowledge of the medicinal values of local flora reflects an additional layer of the ecological knowledge Yup'ik people possess about their surroundings. I learned that many Yup'ik residents continue to prefer traditional forms of medicine because they find it to be a more holistic and spiritual healing process. Research participants expressed that it can be hard to trust all of the different kinds of Western medicine, but that Yup'ik medicine can always be trusted. Also, unlike Western medicine, there is no serious side effects with traditional medicine. For these reasons, many local residents of the Kotlik region continue to harvest wild plants for medicinal purposes. Such practices reflect the richness and subtle nature of local understandings of the environment and can

potentially serve as a localized method of monitoring ecological change that is occurring in the region.

Figure 5.5 Emmanuel repairing a fish net. (Photo by Chad M. Cook)

5.5.1 Yukon Fishing Ethnographic Description

My first full day in Kotlik I spent the afternoon outside with Emmanuel learning to repair a fish net. This involves inspecting the net for any rips and also making sure to remove any debris likes twigs or sticks that have been caught in the mesh.

There was a light afternoon rain with a cool breeze under gray skies. Anchored to the shore, we worked inside of Emmanuel's boat. First, we removed the net from a large plastic tub that's also used to store fish while the net is in the water. At each end of the net are two large buoys attached to a float line. I learned that the bottom end of the net, or lead line, is designed to make the net hang like a curtain when it is placed in the water.

Set nets and drift nets utilize different mesh sizes to target different species of fish. Emmanuel told me that there would be a commercial fishing opening the following day from 1 p.m. to 10 p.m. During late July, local fishers primarily target summer chums. But we might catch some humpies and whitefish too.

Emmanuel and I found a bunch of small tears in the net that needed to be mended back. Emmanuel would add a new line to the mesh, tying a few knots, and it would look as good as new. Afterward, we carefully lined the net into the plastic fishing tub, making sure there were no snags in the line. Emmanuel told me that taking care of gear is an important part of the subsistence process, "so we'll be ready."

Figure 5.5.1 Chum salmon dries on a fish rack. (Photo by Chad M. Cook)

5.5.2 Yukon Fishing Overview

Kotlik, Alaska lies at the mouth of the world's longest salmon migration. Beginning in the freshwater of the Yukon River delta, salmon continue to travel up to 2,000 miles upriver to reach their spawning grounds. The residents of the Yukon River delta are blessed with an abundance of high quality fish that are utilized throughout the year. Processing techniques such as cutting, smoking, and storing salmon for the long winter months have sustained the Yup'ik people of this region since the earliest of times.

More than any other type of fish, Kotlik residents continue to rely heavily on the subsistence harvest of salmon runs, which occurs from break up until the end of August or early September. Salmon, and other species of fish, provide

critical nutrients to the environment not only for local human residents, but also for the entire ecosystem.

In the Yukon River delta, many extended families work together at a fish camp to harvest and process salmon for subsistence use. Salmon are commonly cut into strips and will be put outside to air dry for a few days if the weather is good. Once the strips have been dried, they will be brought into a smokehouse to be smoked and dried for an additional few weeks. Generally, a fire is kept going every day, all day, except if it is really windy outside. Dead cottonwood that has drifted from upriver is gathered from nearby locations and used as the primary fuel for smoking. Chum salmon and Chinook salmon are two of the more popular kinds of fish to be dried and smoked. There is a variety of different ways that fish can be processed, and it really depends on personal preferences. For example, some families prefer their fish to be heavily smoked and others prefer them to be more air-dried. Not every family uses the same wood for smoking their fish either, which will affect the flavor.

Commercial fishing provides economic opportunities for local residents to help pay for costs associated with subsistence hunting and gathering. In 2010, 78 residents held commercial fishing permits and more than 90% of commercial fishermen and women are residents in villages along the Yukon River drainage (ACDCIS, 2012).

Because of concern regarding the uncertainty of annual fish runs, conservation management plans are enforced to monitor the health of fish populations. Chinook salmon (*Oncorhynchus tshawytscha*) runs have been particularly hard hit. As a result, the Alaska Board of Fisheries has implemented policy that bans all Yukon River delta residents from selling Chinook salmon commercially. Moncrieff (2004) points out that lost commercial earnings affect subsistence practices because most local people fish commercially to provide

income to support a subsistence lifestyle (p. 145). Harvest restrictions have the ability to cause serious negative effects on local residents and the regional socioeconomics. Based on the conversations that I had with research participants, there was still more than enough Chinook salmon for subsistence purposes. For example, Mary told me that, "We get enough to last all winter during subsistence. But we can't sell the kings commercially, so we either keep them for subsistence or release the live ones and send them further upriver." She added that, "the extra cash would be nice, but people get by."

The management of the Yukon River fisheries is overseen by numerous agencies and organizations including the ADFG, the SFWS, and the Yukon River Drainage Fisheries Association (YRDFA). The State of Alaska received management of the Yukon River from the federal government in 1960 following the creation of the ADFG. Since then, the state has developed a complex regulatory system intended to maximize sustainable yield of the commercial harvest while protecting the biological stocks and subsistence harvest as well. The state's Alaska Board of Fisheries (BOF) is primarily responsible for setting policy and regulation of fisheries management in Alaska. The BOF receives input from the BOF Advisory Committees (AC) and the public, to set policy and establish regulations for the overall direction of the state's fisheries management. ADFG conducts the management based on the BOF's decision.

In federal public waters, the United States Fish and Wildlife Service's Federal Subsistence Board (FSB) manages the subsistence fisheries with input from the Federal Subsistence Regional Advisory Councils (RACs) and in consultations with federally recognized tribes. In the Canadian portion of the Yukon River drainage, Canada's Department of Fisheries and Oceans (DFO) manages and regulates all Yukon River fisheries. In 2002, the Pacific Salmon Treaty (PST) was created to ensure enough spawning salmon escape harvest and ensure escapement goals.

The YDFDA was created in 1992 to provide employment opportunities for residents living in the Yukon River delta. Kwikpak Fisheries, a subsidiary of YDFDA, was created in 2002 to improve the regional economy through additional employment, training, educational opportunities, and policy recommendations.

Although federal, state, and local agencies share the common goal of ensuring a healthy and sustainable future for the Yukon River fisheries, complex challenges remain due to the heavy demand on resources, the uncertainty of escapement predictions, and conflicting organizational missions and goals. Furthermore, an indigenous based worldview has been known to put many local residents at odds with non-local stakeholders. An example of this conflict is currently being played out in court, as 23 Yup'ik villagers from the Kuskokwim River were cited by the ADFG for breaking the law by fishing during hours of closure. However, the defendants are arguing that the state of Alaska failed to uphold their constitutionally protected right based on religious and cultural rights to fish (Burke, 2013, p. 1). This conflict underscores the challenges that exist in regions with ideological divisions based on a difference in cultural systems of understanding (e.g., indigenous and Euro-American worldviews).

Figure 5.5.2 Drift netting for salmon. (Photo Chad M. Cook)

5.5.3 Yukon Fishing Summary

During the course of my fieldwork I had the opportunity to observe local drift net and set net fishing practices, both commercially and for subsistence. Due to the timing of my research, the main variety of fish species that were harvested included chum salmon (*Oncorhynchus keta*), pink salmon (*Oncorhynchus gorbuscha*), coho salmon (*Oncorhynchus kisutch*), and broad whitefish (*Coregonus nasus*).

Traditional knowledge that results from fishing practices includes an understanding of how conditions such as winds, clouds, and tides can affect local fish runs. For example, one afternoon spent drift netting near the confluence of Aprun Pass and Kuigpak Pass, Emmanuel suggested that we were not catching

fish because of a big high tide and strong winds from the west. Local residents are known to believe that west winds often push salmon into Kuigpak Pass or the middle mouth of the Yukon River, bypassing the nets of Kotlik fishers. Cloudy weather is believed to be better for fishing as the fish are less likely to see the nets and high tides are good at drawing the fish into the Yukon River. All fish species are sensitive to subtle changes in the environment and are believed to follow the path of least resistance.

Research participants also expressed the importance of sharing subsistence-caught salmon with family and friends. Mary told me that, "We always share our fish." Dried fish is commonly shared with *allaneqs* (visitors) who come to the house and during special occasions. Mary also gives dried fish to family members such as her daughter who lives in Wyoming, and her brother who lives in Fairbanks. The sharing of fish is primarily conducted within an extended family unit and is not shared with the greater community like whale meat. Sharing symbolizes the traditional belief that those who give are the most likely to be rewarded in the future. It also reflects the importance of not being stingy and making sure food does not go to waste. Like all subsistence gathering activities, sharing fish remains an important aspect of the subsistence way of live for Yukon River delta residents.

In the Yukon River delta, fishing is one of the primary activities that connect people to their natural environment. This means getting away from the conveniences of life in town and spending time in the wilderness, or "*yuilquq*" in Yup'ik. "Some people would rather stay home and use their remote control than enjoy the wilderness," Mary told me, "but my family loves to be out in nature. We love to fish." During commercial fishing openings, Mary, Emmanuel, Lolly, and I would head out toward Kuigpak Pass from Kotlik, while Bee, Albert, Mason, and Kyrel would follow behind in a separate boat. Fishing strategies like where to drift were openly shared among the family. Mason would come aboard our boat

to play with Lolly and spend time with his grandparents. While the nets were in the water and the boat drifted with the current, Emmanuel would also commonly talk with friends over the radio in Yugtun, always making jokes and laughing. During breaks, we would often dock up with Bee just to talk or share food. Commercial fishing openings commonly lasted more than eight hours. Once the nets had to be removed from the water, the catch was delivered to the nearest tender and then the boat was scrubbed clean. Often we would not get back to Kotlik until well after midnight.

Commercial and subsistence related fishing activities underscore the importance of community values such as sharing, maintaining social connections with the land, and gathering Native foods. Traditional knowledge of fish migrations suggests that wind, cloud, and tide all play a role in influencing fish migration patterns (for a more detailed study, see Moncrieff et al., 2009). Many local residents cherish fishing activities not only for the economic benefits, but also because it involves bringing families and communities together by getting away from the distractions that are found in town and being outside on the river.

5.6.1 Moose Hunting Ethnographic Description

The Yukon River delta is made up of a maze of back rivers and small sloughs. Hunting for moose during the late summer season mostly consists of traveling by boat in the hopes of spotting a moose foraging along the riverbank.

We had been traveling for several hours without any sightings of a moose. Hours had gone by with minimal to no talking, just the ever-present hum of the engine and the sound of wind. Occasionally, we would anchor the boat in an area that offered a clear view of the tundra, scanning the horizon with binoculars in the hopes of sighting a moose.

Lolly lay down near the bow of the boat, protected from the strong winds and took a nap. Emmanuel, Mary and I remained on alert, watching the riverbanks in hopes we might spot a moose. Hours passed with no luck.

Suddenly, Emmanuel had spotted something as the boat began to pick up speed and the engine worked its way up toward its highest pitch. Lolly, who had been sleeping near the bow, immediately popped up his head to see if we had found a moose. As we raced ahead I could see several moose crossing along a medium sized slough. It was a mother with two calves. Within a few moments, the cow had completed the crossing and was sprinting toward the brush, leaving her two calves behind. As the calves finally reached the shore, with an ungainly stride they followed in the direction of their mother and were soon hidden in the brush.

Emmanuel killed the motor and we slowly drifted with the current looking to see if we could catch a final glance at the moose. But they had already vanished from sight. It was the first moose sighting we had of the day, and unfortunately it was a cow with calves.

After a brief pause and a moment of quiet reflection, we continued the search in hopes of catching a moose. On this particular day luck was not on our side. We arrived back in Kotlik after midnight without another sighting.

5.6.2 Moose Hunting Overview

Moose (*Alces alces*), or *tuntuvak* in Yugtun, are commonly found throughout the numerous waterways and wetlands of the Yukon River delta, and range over a large portion of the state of Alaska. Moose play an important role for contemporary village economies, providing a major source of food that can last throughout the year. The most common ways of preparing moose meat is boiled, fried, or roasted. Moose soup is also a favorite. The meat is shared within an extended family unit, except for special occasions such as potlatches when meat may be distributed to anyone within the community.

Not until recent times has it been common to find moose in the lower Yukon River delta region. In recent years, people have seen moose all the way toward the Bering Sea coast. Mary told me that, "my father use to have to travel up to Pilot Station to catch a moose, but not anymore. Now there's lots of moose right here. We don't have to travel as far."

The rise of moose populations is believed to be associated with a change in the region's ecology. When I asked Mary why she thought there had been a rise in moose populations she told me, "We have food for them now. We hardly had any trees like we do now growing up. They're still growing, the trees are getting bigger and there are more of them now. I don't know why the moose are here now, but it could have to do with more trees in the area."

5.6.3 Moose Hunting Summary

My experience moose hunting with local residents highlighted the importance of patience in regards to hunting. In order to be a successful hunter one must be willing to continue to invest time with the land, learning by actively being involved in the hunt. Taking into consideration the traditional Yup'ik worldview of animals as non-human persons, the notion of patience emphasizes the social element of successful hunting. All animals and all objects of the natural world contain a *yua,* and are to be treated with respect. Because moose in the Yukon River delta are a relatively recent occurrence, local residents have not developed the deeply established spiritual traditions and practices that are associated with other animals such as seals. Mary told me, "When we were growing up we didn't have moose around here, they were further up river, I'm sure people upriver have beliefs that we have with seals." Moose are still considered to be a spiritual animal that possess *yua* and are to be treated with respect. Just as meaningful human relationships grow stronger over time, hunters display notions of respect to the natural world by remaining patient and by continuing to wait for animals to give themselves.

Figure 5.7 Beaver Dam. (Photo by Chad M. Cook)

5.7.1 The Influence of Rising Beaver Populations

Beaver (*Castor canadensis*), *paluqtaq* in Yugtun, are now commonly found throughout the Yukon River delta region. Mary told me that, "Beaver are here more than ever before, we use to rarely see them but now they're everywhere." Previously, beaver was more commonly found up river of the delta region. Research participants shared a general consensus that the increase of beaver is associated with an increase of vegetation, especially the growth of trees in the area. The rise of willow along the banks of rivers and sloughs are perceived to be bigger than ever before leading to ideal habitat for beaver and moose. Others have noted that salmonberries and crowberry season is beginning to arrive earlier because of changing climates and that could be influencing the rise of local beaver populations (Fienup-Riordan & Rearden, 2012, p. 312). Local

residents expressed concern that increasing beaver populations will negatively affect fish spawning habitat. Although beaver could be hunted or trapped to help alleviate this problem, Yup'ik people have expressed that there is an unwillingness to do so because it is uncommon to eat the meat and pelts are of limited value.

On one occasion while out drift netting, we came across two beavers and attempted to take them with a .22 rifle, but we were unable to get a clear shot before they swam off into the brush. The target practice would have been beneficial and the fur likely would have been used to make warm mittens had we caught them. Also, the process of removing the pelt with little fat or muscle clinging to the hide makes for good practice for the inexperienced before they move on to larger mammals such as seal or moose. Except for this one occasion, beavers that were encountered during my stay were left to go about their business and mostly ignored. During the busy late summer subsistence season, time is expended on other prized resources such as summer chum, salmonberries, and seal.

Despite this unwillingness for local residents to make any type of large-scale effort to reduce the rising beaver populations, some residents remain concerned about their impact on local resources. For example, Huntington's research on traditional ecological knowledge (TEK) of Bering Sea beluga whale hunters documented local beliefs that linked the increasing populations of beavers and the decreasing populations of beluga whales together. One elder suggested that because the beavers were creating dams in salmon spawning habitat, beluga were suffering from a reduced number of essential food resources (Huntington, 2010, p. 2). Beaver are also known to introduce giardia[6], or "beaver fever," into freshwater areas that were previously safe to drink. The

[6] Giardia, or "beaver fever," is a microscopic parasite that can contaminate food or water causing intestinal illness.

contamination of areas of previously safe drinking water is another concern associated with the rise of beaver populations.

For many Yup'ik residents, the rise of local beaver dams is not perceived as an isolated event, rather it reflects a broader spectrum of environmental change that is occurring within the region. Research participants suggested that the changes that are occurring on an ecological level are likely connected with the social change that is taking place as well. For example, Emmanuel told me how there is fewer people that hunt whale in the Yukon River delta than ever before, yet the whale populations are believed to be at their lowest they have ever been. This is not something that is seen as a coincidence. The encroachment of willow and aspen into the deltas of western Alaska is also seen as a sign. Animals such as beavers and moose have migrated into the area like never before and some see these changes as a sign that the landscape is trying to tell us something, and unless people get outside and listen that the message will be lost.

Figure 5.8 Steam bath house (*maqivik* in Yugtun). (Photo by Chad M. Cook)

5.8.1 Ethnographic Description of Steam Bathing in Kotlik

I was beginning to learn that there was always something to do in Kotlik, every day was a new experience for me. Last night Mary had caught a seal; it was pretty late by the time we got it processed so we decided to have it for dinner the following night. I awoke the next morning to light rain, the sky covered with dark gray clouds. After a relaxing morning I began to hear that maybe later in the night we would take a steam bath. I spent the afternoon helping Emmanuel get the maqi *ready: we installed a new sheet metal roof, re-installed an old chimney for the wood stove, swept and cleaned out the inside, and split more than enough wood for several baths.*

When we had finished our chores dinner was ready to be served. Mary let me know that we'd be eating seal for dinner, and if I didn't like that I could heat up some freeze-dried noodles. "Of course, I was going to eat seal," I told her.

The seal was lightly pan-fried, I would say medium rare. Personally, I was more interested in eating the ribs than the delicacies like heart, liver and kidney. There were also fried strips of fat to choose from. Preparing myself for I didn't know what, I dove in. With a little bit of Worcestershire sauce and some seasoning the seal ribs were actually pretty delicious. At times, the eating was slightly intense; I don't know if it was from the mental aspect of eating seal meat or the meat itself, but I enjoyed it nonetheless. Feeling quite proud of myself, I asked for seconds. I drank lots of water knowing that a burning hot steam bath was waiting for me afterward. I had heard that Yup'ik people like really hot steam baths, so as I ate my seal meat I drank as much water as possible, wondering just how hot was it going to get. Somewhat nervously, I was feeling ready for the test.

After dinner, Mary handed me a towel for drying, another smaller towel to sit on, and a hat to protect my ears. "Your ears usually will burn the fastest," she told me, "you should take a hat." Curiously, wondering if I knew what I was getting myself into, I said thank you and headed out to the maqi.

There are two main rooms in Emmanuel's maqi*: the entranceway, an area for cooling off in between heating sessions, and the main room with the wood stove inside. When I entered, Emmanuel lay resting on the floor of the entranceway, he had already completed his first round of steaming. Quickly, I got myself ready and grabbed my small towel to sit on and my hat before entering the main room. According to the temperature gauge, it read 200°F[7]; I*

[7] In a recent conversation with my research participant, Mary, she indicates that they prefer the maqivik temperature to reach 230°F or hotter for a good "*maqi*" or steam bath.

laid down my towel, put on my hat and sat cross-legged as I took in the heat. Feeling comfortable, I relaxed and refrained from pouring water on the volcanic stones, Emmanuel had left it hot enough for me without creating any additional steam.

I crawled back into the entrance room after five minutes, spread out my towel and rested on the floor. I felt great. Not too hot, just like a relaxing sauna. Shortly after, another Kotlik resident entered the maqi. *His name was David Mike and was a friend of Emmanuel. After a brief hello, David headed into the main room so that he could catch-up with us before we took our second session.*

After David returned, I began psyching myself up, and I got myself ready for my first group trip into the maqi. *I knew this time it was going to get hot. So, I had established a plan, I assured myself that I wasn't going to die and as long as I could take some pain I would be able to hang with them. I had heard stories of Yup'ik men testing non-Natives' ability to handle a hot steam bath, and I convinced myself I was going to be tough and not be the first one out. No matter how hot!*

After we all piled in, the thermometer reading 230°F, we got into our position. Immediately, Emmanuel poured the first ladle full of water onto the pumice rock, dissipating burning hot steam into the air. At first, it felt pretty good, slightly intense but still enjoyable. As the pouring continued, my own tolerance began to get tested. It felt like my lungs were breathing in fire, my kneecaps and other places on my body began to burn. Emmanuel and David started to shout, making loud noises and even encouraged me to do the same. I couldn't do it; I couldn't even speak. The outside of my body was on fire. Remaining quiet and focusing on my breathing, I stuck to the plan and constantly reminded myself that I wasn't going to die.

Finally, after what seemed like an eternity, David headed toward the door. I followed right behind him. I had accomplished my goal… I was not the first one out of the room! Shortly after me, Emmanuel exited as well.

After an extremely hot steam bath like that, the first several minutes are spent in a mode of recuperation. It takes a moment to resettle yourself, to begin to be able to form coherent thoughts again. But after this phase the body begins to feel incredibly loose and relaxed. It is an excellent time to speak and share stories. Conversation drifted in and out of Yugtun, sometimes English to possibly include me. The men talked about hunting, about the importance of the Yup'ik language, and about the importance of listening to the elders.

After we had cooled off, we reentered for another round. This time I was the first one to leave, still putting up a good fight, but knowing when I was beaten. As I crawled toward the exit, David was right behind following me out. The temperature gauge read 255°F. That was hot enough!

After our third round of steaming we soaped and shampooed ourselves clean, dousing ourselves with warm freshwater. We made sure the stove was full of wood for the women who were planning to steam after we had finished and that they had fresh water too. After saying goodbye to David, I headed back home probably feeling the loosest that I've ever felt in my life. My arms had become covered with blotchy red patches, completely covered. I figured it was no big deal, headed to bed, and went to sleep.

5.8.2 Steam Bathing Overview

In the early 1800s, the Russians are believed to of introduced steam bathing to the Yup'ik people and it has remained a much-loved pastime

throughout southwest Alaska since (Fienup-Riordan, 2012, p. 69)[8]. The *maqivik* (or steam bath house) serves as a place where the stories come out: about the hunt, about the proper treatment of animals, about connecting with the land and the traditional values of the people.

In the traditional men's house, or *qasgiq*, the Yup'ik people enjoyed sweat baths, which involved soaking in an intense, dry heat created by closing the entry way and building up a fire in the central fire pit. The competitiveness of tolerating heat has long been a Yup'ik tradition and precedes the *maqivik*. According to Father Rene Astruc, a Jesuit missionary priest who served in the lower Yukon River delta region for more than four decades, in Kotlik the transition from fire bathing in the men's house, or *qasgiq*, to the steam bath began after 1962, around the time Kotlik became a permanent village (Fienup-Riordan, 2012, p. 69).

Hensel (1996) suggests that in many ways the steam bath has replaced many of the traditional roles of the men's house (p. 124). He goes on to add that it is one of the few places where competition is basically encouraged, whereas in the old days men often competed in gift giving, strength, and ability; competition in the endurance of heat in the steam bath remains. Whoever can withstand the intensity of the heat wins the unspoken game.

5.8.3 Steam Bathing and Yup'ik Ecological Knowledge

Although it may not seem like the perfect embodiment of local environmental knowledge, Yup'ik steam-bathing practices reinforce a variety of ecologically related knowledge and symbolizes Yup'ik people's connection to the land. For example, despite the fact that the tundra of the Bering Sea coast is treeless, home to nothing taller than alder and willow bushes, people actively log

[8] Many Alaska Natives claim that the steam bath was locally invented, then altered by Russian steam bath traditions, possibly deriving from Karelian Finnish traditions.

the rivers and shoreline, harvesting rafts of driftwood for heating homes and steam baths, constructing drying racks and sheds, and making innumerable tools (Fienup-Riordan, 2007, p. 53).

One of the distinctive images of Kotlik is the large piles of wood stacked in a manner that resembles a tipi. The people of Kotlik pile their firewood this way so that during seasonal flooding they're less likely to drift away. This locally adapted practice is based upon generations of experience dealing with the seasonal flooding that occurs within the region.

Yup'ik traditional beliefs held that wood possessed its own form of personhood, or *yua*. Many Yup'ik people believe that families stocked with plenty of wood would be able to draw animals toward them in the hopes that they would be attracted to such a home because there would be plenty of wood to cook them (Fienup-Riordan, 2007, p. 53). Therefore it is believed that homes with a plentiful supply of wood are more likely to be lucky, and the next time a hunter goes in search of food they are more likely to be rewarded for their hard work gathering wood. Yukon River delta residents gather firewood throughout the year, primarily after breakup as the wood makes its way downriver.

Figure 5.8.1 The inside of a *maqivik*. (Photo by Chad M. Cook)

Another aspect of the *maqi* that requires local ecological knowledge is that of gathering proper stones capable of withstanding extremely high temperatures while also giving off the most amount of steam. The local preference is pumice, or *keggalrun*, which is a type of volcanic rock found throughout the Bering Sea coast. Many Yup'ik prefer this rock because of its ability to withstand high temperatures without cracking (Fienup-Riordan, 2007, p. 58). Emmanuel informed me that the pumice rocks he uses for his *maqi* were gathered from Egg Island, located near Stebbins in the Norton Sound, specifically because of their ability to produce a great amount of steam. Just as driftwood possesses a *yua,* a rock has life too as it is a product of nature. Inanimate objects like pumice rocks gathered for steam bathing continue to possess spirit and have the potential to bring about positive health and wellbeing if properly used in according with cultural traditions and traditional ways of living.

5.8.4 Steam Bathing Summary

I argue that modern Yup'ik steam bathing reinforces traditional Yup'ik values and traditional knowledge. Steam bathing aides in the cultivation of Yup'ik cultural identity and offers an opportunity to reflect on the lessons learned from the land. The *maqivik*, or steam bath house, serves as a place where the construction of knowledge is delivered by the elders and local experts who were trained from a very early age.

In many ways, the *maqivik* has taken on the former roles of the *qasgiq*. It is a place of learning and telling oral stories that underlie cultural principles and values. Telling stories passes on information about how people should work together and take care of each other. Stories also can provide warnings as to what would happen if those actions are not followed. Examples of traditional knowledge that are shared in the *maqivik* include knowing how to understand and read the weather, about learning proper gender roles, and speaking Yugtun. Conservation ethics are embedded in oral stories that emphasize themes such as the importance of not wasting food and learning how to respect the spirit of the things that are relied upon for survival.

Chapter 6: Discussion and Conclusion

6.1 Discussion

For the purposes of this master's thesis, the usage of the term "conservation" or "conservation ethics" will not necessarily conform to the definition of the term according to purely empirical sciences. Johannes (2002) defined a conservation ethic as "the awareness of one's ability to deplete or otherwise damage natural resources, coupled with a commitment to deuce or eliminate the problem" (p.3). As stated in the introduction, I argue that from a Yup'ik perspective a "conservation ethic" also implies the continuation of a social relationship with the land and its resources that is in accord with a series of culturally attuned values. Documenting traditional knowledge is important in that it underlies what people believe.

According to Gifford Pinchot (1910), often considered the father of the conservation movement, the three primary principles of the conservation movement include developing natural resources for the benefit of local people, the avoidance of waste, and that natural resources should be developed for the benefit of the many and not merely for the profit of the few (p. 46). Surely, Yup'ik hunting practices fall into all three of the above categories. The engagement of local subsistence practices helps insure people harvest from the land and learn the traditional ways of their ancestors. The discussion of my research attempts to highlight the importance of maintaining social connections, training the youth, eating Native foods, respecting the land, and to highlight Yup'ik people's spiritual connection with the land.

Figure 6.1 Hunting for seal. (Photo by Chad M. Cook)

6.1.1 Maintaining Social Connections

Hunting and gathering activities in the Yukon River delta act as a method of maintaining social connections among community members. It is a way of bringing together people of all ages, young and old. Subsistence practices like seal hunting are important in that they often help foster notions of kinship and strengthen ties among the community.

Although reinforced throughout my stay in Kotlik, I became keenly aware of the theme of maintaining social connections during my first seal hunt, which took place several miles downriver from Kotlik. It was the first hunt of the season and nearly 100 people from the community gathered to take part or simply watch from ashore. People relayed messages over the VHF radio, many speaking in

Yugtun. In total, I observed 15 boats, often containing up to six people, involved in the hunt of one seal. Elders and experienced hunters had the opportunity to pass on knowledge to the youth, and the youth had an opportunity to publicly display their skill. People develop hunting skills by observing and participating. Advice was given by the more experienced, such as the importance of applying saliva to the tip of the spear so that it would be more likely to embed itself into the animal. Generally, adult men and young boys were the primary spear throwers, although women engaged in the hunt as well by also throwing spears.

Worl (1982) suggests that cultural values such as sharing and working together among extended family members are hallmark traits of Alaska Native subsistence practices (p. 54). Engaging in subsistence practices is one of the best ways of bringing people together from all ages. Many Yup'ik residents develop a personal relationship with the land and waters. This means that Yup'ik subsistence practices also offer an opportunity for local residents to engage in a form of cultural continuity through continued engagement with their ancestral lands. For many Yup'ik residents, the gathering and harvesting of wild foods is a sacred activity that brings them closer to their spiritual creator. The lands and waters are the ultimate providers of food and therefore demand the foremost amount of respect. Relationships with the land and water are developed through culturally defined thoughts and deeds, which are often best learned through traditional oral stories and the following of appropriate rituals. Oral stories are known to contain the conceptual blueprints for understanding the cosmological and spiritual foundation of a culture's system of belief. The ritual often serves as the living reenactment of the sacred past, and helps provide balance and order into the world which otherwise would be lost. That is why for many Yup'ik, subsistence related activities become a religious experience in which they are in touch with the sentient nature of their home.

Figure 6.2 Mason learns how to hunt for seal. (Photo by Chad M. Cook)

6.1.2 Training the Youth

Throughout the course of my fieldwork, research participants expressed the importance of passing on the knowledge and skills to the younger generations. Training children from an early age provides the skills needed to continue to live a subsistence lifestyle and acts as a way of passing on the cultural heritage of their forbearers. Indigenous and traditional ways of knowing and relating to the environment are imbedded within subsistence and gathering related activities, and passing on these skills helps to nurture culturally attuned stewards of the land.

As in many other indigenous subsistence societies, children in Kotlik (e.g., Lolly and Mason) acquire ecological knowledge through something like an

apprenticeship with family members and adults, as well as exposure to oral tradition. The way in which young people express interest in hunting and fishing practices will also help determine how fast subsistence-related knowledge and skills are passed on as experience is gained watching adults hunt or practicing with toys. Small versions of harpoons are made to accommodate children so that when they are older they will have the skills necessary to become self-sufficient hunters themselves. During the course of my fieldwork, I commonly observed Lolly playing with a toy boat during our time spent fishing on the river. One of Mason's favorite toys was a miniature chainsaw that he often played with. When adults operated a real chainsaw he watched in close detail, mentally preparing himself for the important chore of gathering firewood. On one occasion, Emmanuel and Lolly worked together to build Mason a smaller harpoon, or *cavek*, to be used in future seal hunts. Although it was probably too small to actually catch a seal, it was a perfect size for a 3-year-old. Adults make smaller versions of hunting equipment such as harpoons and spears so that the children can still feel involved in the hunt while not interfering with the grown up "toys."

Many Yup'ik children learn to hunt from a very early age. I observed this repeatedly throughout the course of my research. For example, on one occasion I remember how 3-year-old Mason stood at the bow of the boat with harpoon raised, waiting for a seal to resurface (see photograph above). When it finally did resurface Mason had just narrowly missed with his throw. Both 11-year-old Lolly and 13-year-old Brendon had already caught several seals during their lifetime. Lolly had told me that he was 5 years old when he caught his first seal. I learned that it is not uncommon for a boy to catch his first seal by the time he is 7 years old. The age at which boys take on hunting responsibilities depends on the availability of adult teachers, whether direct family or friends of family, who pass on the necessary knowledge and skills.

Mary and Emmanuel told me how they have taken several of their grandson's friends out to their fish camp. There are a shrinking number of Kotlik residents that maintain active fish camps outside of the village. Although there is no clear specific reason why this shift has occurred, a few possible reasons include a local preference for modern conveniences not available at fish camp, the inconveniences of fishing rules and regulations, and economical issues such as the high cost of fuel. Therefore, some residents have started to dry fish at home, potentially saving fuel costs and having the conveniences that life in town provides. Another reason is that there are more jobs in the village during the summer season; so many people stay home because they have to work. In earlier generations, many parents didn't have jobs so many more people worked at fish camp. Mary told me that, her family just loves being in nature, living in the wilderness, and getting away from town. But not all families are living such an active subsistence lifestyle, which has cultural ramifications such as limiting the amount of fishing and hunting knowledge that is being transferred to the younger generations. Overall, younger generations are spending significantly less time on the land than their parents and the impacts of this transition is an area of research that could benefit from future studies.

In order to address the problem of making sure that all children have an opportunity to engage in subsistence practices there are several programs in which local students have the opportunity to learn about a subsistence way of life in an academic setting. In Russian Mission, Alaska an educational revitalization project was recently created to pass on culturally important values that highlight a traditional Yup'ik way of life. Located along the Yukon River, about 100 miles upriver from Kotlik, Russian Mission is a Yup'ik village that also has a heavy dependence upon subsistence resources for economic and cultural wellbeing. In 2000, a newly formatted school curriculum was developed for students in grades K-12 which incorporated seasonal subsistence activities into school-sponsored trips. A variety of skills such as hunting, fishing, reading, and writing were

integrated together during a three-week field trip that enabled Russian Mission students to interact with their local environment in an academic context (Pilgrim & Pretty, 2010, p. 242). Similar types of educational programs are also offered to K-12 students in the Yukon River delta communities of Kotlik and Emmonak. Students can spend their weekend at a remote field camp where they have an opportunity to learn about fishing, cutting up and drying salmon, picking berries, and a variety of other subsistence related activities.

Making sure that the younger generations have the proper skills and knowledge to continue to live an active subsistence lifestyle is a way of ensuring that the pathways between humans and animals will remain open for future generations. In Yup'ik society, reciprocity is the basis of the relationship between humans and animals, which is especially apparent with sea mammals like seal and whale. But many other subsistence practices including harvesting fish and gathering berries are commonly believed to rely on this notion of reciprocity. For example, many local fisherman believe that those who are immoral or reckless toward the spirits of fish will see diminishing catches. People who do not share their berries will experience diminishing future harvests. Not surprisingly, a common Yup'ik perspective on the reason why wildlife species populations have been in decline suggests that the root of the problem lies at a greater discontinuity between human and animal relationships. The yearly spiritual cycle of animals and their availability revolves around the notion that humans follow the proper rules of making sure that they are treated properly, showing them that they are wanted, not leaving behind waste, and harvesting in according with moral codes. Passing on the knowledge of how to hunt and treat animals lies at the core of Yup'ik cultural values, acting as a locally adapted method of ensuring that a cycle of life will continue. In fact, passing on such a knowledge base is actually a community-based conservation effort that explicitly ties people's spiritual beliefs with local resource management practices. For Yup'ik people, it is

believed that future generations will prosper if they learn the traditional way that people have cared for the land and the animals.

Figure 6.3 Mason and Lolly after a successful seal hunt. (Photo by Chad M. Cook)

6.1.3 Subsistence Hunting Practices as Reinforcing Yup'ik Identity

For Yup'ik residents living in the Yukon River delta, the importance of maintaining relationships with their ancestral lands goes beyond any economic or nutritional value. It is the continuation of a way of life that has been occurring for countless generations. Engaging in local subsistence and hunting gathering related activities helps cultivate a sense of self-identity and what it means to be Yup'ik.

From a Yup'ik perspective, the issue regarding conservation practices in the Yukon River delta is not merely maintaining a quantitative number of healthy seals for future harvest (essential as it is); the act of "conserving" also includes the continuation of a way of life. A holistic understanding of conservation from a

Yup'ik perspective holds that maintaining social relationships with the land is fundamental in maintaining healthy species populations. Although such a concept may sound illogical from a Western-trained mind, it lies at the basis of Yup'ik epistemology. Yup'ik culture builds itself around a continuation with traditional practices while at the same time adapting to a rapidly changing socioeconomic and ecological setting.

Figure 6.4 An *uluaq* is used to cut whitefish. (Photo by Chad M. Cook)

6.1.4 Eating Native Foods

The importance of eating Native food seemed to be one of the strongest notions of cultural identity that I observed during my stay in Kotlik. The process of eating is an integral part of Yup'ik society. The notion of eating properly emphasizes the importance of eating what is given and not wasting the food. Dinner is a time of learning, a time to listen to the elders share stories and pass on the knowledge. Eating is also closely tied to important cultural concepts such as nutrition, wellbeing, aesthetics and spirituality.

I learned that Native foods are believed to offer a healthier alternative to commercially available store-bought food. Knowing where their meat came from, that it was processed cleanly and that the animal ate a natural diet free of

hormones and other chemicals is of significant importance. Numerous studies have indicated the importance of traditional foods in modern Yup'ik diets (Bersamin et. al. 2006; Hopkins et. al. 2007; Wolsko et. al., 2006). Since the introduction of Western store-bought food there has been a rapid increase in diet-related health problems such as type II diabetes, coronary heart disease and obesity among Native Americans adjusting to changing traditional ways of life, (Samson & Pretty, 2006).

According to a study conducted by the Northwest Territories Health and Social Services (2002), seal meat, oil, and organs are an excellent source of protein, vitamins, and minerals, especially iron and phosphorus. Seal meat is also low in saturated fat, cholesterol and sodium. Whether eaten raw, frozen, boiled, dried, or aged, seal meat is an excellent source of nutrition (pp. 21-22). Seal meat is only one of many examples that could be used to highlight the nutritional benefits of Native foods. Berries, fish, wild greens, and many other local foods continue to provide essential forms of nutrition into local communities.

Pilgrim and Pretty suggest that, "cultural identity gives people a sense of what distinguishes them from others or outsiders" (Pilgrim & Pretty, 2010, p.87). In Kotlik, outsiders may be tested to see if they are willing to eat the traditional food. This acts as a way of testing one's ability to adapt to the local culture. For many Yup'ik people, eating Native foods lies at the core of self-identity. For some, that is what subsistence is all about. It is symbolic of an entire way of life.

Figure 6.5 Yukon River delta, Alaska. (Photo by Chad M. Cook)

6.2 Conclusion

Primarily through the ethnographic method of participant observation and informal interviewing techniques, this thesis explored how traditional knowledge and cultural values manifest through engagement in subsistence practices. I have also sought to understand what conservation means from a Yup'ik perspective and how people practice a localized form of conservation ethics. Local conservation ethics have practical implications for not only biological purposes, but for cultural purposes as well. I argue that conservation in a Yup'ik context is not only about conserving biological resources for future generations but also involves maintaining a lifestyle and a culturally adapted ways of interacting with the natural environment. From a Yup'ik perspective, the two are intertwined. The

basis of this understanding is that animals and humans rely on a reciprocal relationship dependent upon culturally attuned values and traditional beliefs.

The findings of my research suggest that:

1- The success (or failure) of conservation-oriented goals is perceived to be dependent upon human/animal relationships. Western science is recognized as valid, but only part of a whole.
2- Cultural values and traditional knowledge are intricately intertwined with ecological concerns.
3- Maintaining a subsistence way of life allows for the continuation of a fluid body of knowledge and cultivates local environmental stewardship.

In conclusion, understanding and learning from local experience with the land can provide invaluable knowledge to resource managers and lead to a more collaborative form of problem solving techniques. What this requires is an understanding that Western science holds limited applicability in issues that are inherently about human and social processes. Including cultural and spiritual values into conservation management schemes has real practical value in achieving collaborative resource management goals. Fundamentally, this requires an openness of mind and a willingness to learn and appreciate different ways of knowing. Yup'ik spiritual and cultural beliefs are valid forms of knowledge that need to be treated with sensitivity and respect, and not dismissed as Native superstition or inferior to Western knowledge.

Learning from Yup'ik notions of conservation ethics and environmental stewardship provides an opportunity to appreciate and respect the accomplishments of local people's ability to sustain and manage their resources. Western conservation management agencies should continue to share scientific understandings about ecological monitoring and stewardship, while also being aware that they too can learn from the ideologies of local people. This requires

that outside agencies and organizations provide the proper training and educational background to employees working or conducting research in cross-cultural situations. If local people are expected to contribute in any meaningful way in management plans or scientific research than consideration of local ways of knowing are essential.

Table 1.1. Common English, Yup'ik and Latin terminology for key species encountered during my field research in the Yukon River delta, Alaska.

English Common Name	Yup'ik name	Latin name
Beluga whale	*Cetuaq*	*(Delphiapterus leucas)*
Bearded seal	*Maklak*	*(Erignathus barbatus)*
Ringed seal	*Nayiq*	*(Phoca hispida)*
Walrus	*Asveq*	*(Odobenus rosmarus divergens)*
Moose	*Tuntuvak*	*(Alces alces)*
Brown Bear	*Taqukaq*	*(Ursus arctos)*
Red Fox	*Kaviaq*	*(Vulpes vulpes)*
Beaver	*Paluqtaq*	*(Castor canadensis)*
White-fronted Goose	*Leqleq*	*(Anser albifrons)*
Snow Goose	*Kanguq*	*(Chen caerulescens)*
Chinook Salmon	*Taryaqvak*	*(Oncorhynchus tshawytscha)*
Chum Salmon	*Teggmaarrluk*	*(Oncorhynchus keta)*
Coho Salmon	*Uqurliq/qakiiyaq*	*(Oncorhynchus kisutch)*
Pink Salmon	*Cuqpeq*	*(Oncorhynchus gorbuscha)*
Broad Whitefish	*Qaurtuq*	*(Coregonus nasus)*
Sheefish/Inconnu	*Ciiq*	*(Stendous leucichthys nelma)*
Salmonberry	*Atsalugpiaq*	*(Rubus chamaemorus)*
Wormwood	*Caiggluk*	*(Artemisia alaskana)*
Labrador tea	*Ayuq*	*(Ledum decumbens)*
Willow	*Uqviaraq*	*(Salix)*

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Appendix 1. Statement of Informed Consent

"Ataam Taikina: Traditional Knowledge and Conservation Ethics in the Yukon River Delta, Alaska"

Dear Participant,

You are being asked to take part in a research study about how traditional Yup'ik beliefs influence subsistence practices in the Yukon River delta region. The goal of this study is to learn how, and/or if, traditional Yup'ik beliefs influence subsistence practices. You are being asked to take part in this study in the hopes that your traditional knowledge may shed light on the interconnections between traditional beliefs and subsistence practices.

If you decide to take part, you will be asked to share your knowledge regarding traditional Yup'ik beliefs and how they may, or may not, influence local subsistence practices within your community. The interview process shall contain three steps: (1) pre-interview; (2) primary interview; and (3) pos-interview follow up questions. Each session shall take approximately one hour. The information shall be preserved on audio files allowing future generations of scholars, researchers, and interested individuals to access the information.

The risks to you if you take part in this study are extremely minimal. All research will be conducted in a sensitive and respectful manner. The fundamental goal of this study is to promote individual and community wellness by respectfully honoring Yup'ik cultural heritage and beliefs.

Your decision to take part in the study is voluntary. You are free to choose whether or not to take part in the study. If you decide to take part in the study you can stop at any time or change your mind and ask to be removed from the study.

If you have questions now, feel free to ask me know. If you have questions later, please feel free to contact: Chad Cook – 907-371-0085 or comcook2@alaska.edu; Dr. Patrick Plattet – 907-474-6608 or pplattet@alaska.edu; or Dr. Mary Ehrlander – 907-474-7126 or mfehrlander@alaska.edu.

If you have questions or concerns about your rights as a research participant, you can contact the UAF Office of Research Integrity at 907-474-7800 (Fairbanks) or 1-866-876-7800 (toll-free outside the Fairbanks area) or fyirb@uaf.edu.

Statement of consent:

I hereby grant digital audio and visual permission to the University of Alaska Fairbanks to use my photographic, video and audio likeness in information such as official publications and displays without further consideration.

I understand the procedures described above. My questions have been answered to my satisfaction, and I agree to participate in this study. Also, I have been provided a copy of this form.

_____

Signature of Participant & Date

_____

Signature of Person Obtaining Consent & Date

Thank you,

Chad M. Cook