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IV. List of Abbreviations

AAC	Alaska Administrative Code
AC	Advisory Committee
ADF&G	Alaska Department of Fish and Game
AITRC	Ahtna Inter Tribal Resource Commission
AK	Alaska
ANCSA	Alaska Native Claims Settlement Act
ANILCA	Alaska National Interest Lands Conservation Act
AOC	Alaska Outdoor Council
AS	Alaska Statute
BLM	Bureau of Land Management
BOG	Board of Game
BOF	Board of Fisheries
CRNA	Copper River Native Association (Ahtna Tene Nene´)
CRITR	Copper River-Ahtna Intertribal Resource Conservation District
CSH	Community Subsistence Hunt
C&T	Customary and Traditional
GMU	Game Management Unit
IK	Indigenous Knowledge
OSM	Office of Subsistence Management
PC	Public Comment
RAC	Russian American Company
RAC	Regional Advisory Councils
RC	Record Copy
RY	Regulatory Year
TCA	Trend Count Area
TEK	Traditional Ecological Knowledge
TK	Traditional Knowledge
USFS	U.S. Forrest Service
USFWS	U.S. Fish and Wildlife Service

Preface

My interest in the topic of the present thesis was triggered by a seminar called 'Cultures of Alaska' held by Prof. Schweitzer at the University of Vienna in 2014. It was the first time I came into contact with Alaska and the variety of Alaska Natives living in this arctic and subarctic environment, as well as the diverse strategies, techniques, activities, and cultural patterns to 'live off the land' developed by Alaska Native groups over the course of centuries, termed subsistence. In my undergraduate studies I had read and heard the term subsistence in connection with slash and burn agriculture and other agricultural modes of production, but I did not take much notice of the hunter & gatherer subsistence mode of production and the diverse and rich cultures associated with it. This instantly changed and I commenced reading extensively about hunter & gatherer societies of the present and past in general as well as with a particular focus on Alaska and the arctic and subarctic environment.

The mentioned seminar was held in preparation for a fieldwork trip of a group of students from the department of Anthropology, which took place the following year and consisted of a roughly three-week stay in Alaska in May 2015. The fieldwork resulted in a preliminary study of the dual-management system for subsistence hunting and fishing and laid the groundwork for this thesis.

In the course of finding a specific research topic for my thesis, I conducted a comprehensive literature review of studies and research dealing with wildlife management and participative processes like cooperative management and adaptive co-management, as well as the challenges of combining scientific and administrative procedures with Alaska Native conceptions and knowledge. All this culminated in my conviction to organize a second fieldwork trip to Alaska to conduct a case study of the regulatory process and Native participation. I planned for a fieldtrip in April 2017 and was still looking for a tangible situation I could research. Through contacting the people I had met during my first visit, I was guided to the situation of the Ahtna, a group of Athabaskan Indians living in the Copper River Basin, and their efforts to establish a cooperative management project with the federal government. It was a fortunate coincidence that a Board of Game special meeting on Copper Basin moose was scheduled for March 18-21, and that I was able to change my plans in accordance with my work.

The gathered data from the three-week fieldwork stay together with the wide-ranging anthropological literature on Alaska Natives and the Ahtna constitute the base for this thesis on the Copper River Basin Community Subsistence Hunt. The situation of the Ahtna and the Copper River Basin has unique features and characteristics, rendering it to be a prime objective for research in ecological resource distribution conflicts and the field of political ecology, as I will illustrate in the course of the thesis.

1. Introduction

Subsistence hunting, fishing and gathering of wild food resources continue to be important characteristics of Alaska, the largest and simultaneously the lowest populated of the US states. Subsistence harvests of wild foods remain at high levels, despite the influence of industrial development and growing urban regions. Alaska is home to various indigenous groups, commonly named Alaska Natives, that have lived in the region for centuries. Although they have different languages, customs, beliefs, values, practices, etc., all these groups have in common a long-term engagement in subsistence practices of hunting, fishing and gathering wild food resources from their surrounding environment, be it the ocean, the river, the forest or the mountain. To date, the rich Native cultures of Alaska have resisted all of the assimilation and development policies implemented by the non-Native majority that settled in Alaska over the course of the last 200 years and they have not, as anticipated by many, dropped out of the subsistence way of life completely. Although there have been great changes in the daily lives of Native people during the last century – from a nomadic lifestyle to a settled, wage labor and the engagement in the cash economy, new technologies in all aspects of life – they have never stopped pursuing a subsistence way of life. Of course, some have moved to urban areas or outside the state or dropped out of the subsistence practice for other reasons, but overall the importance of subsistence is still clearly visible in rural communities throughout Alaska. However, not only have Native people resisted any obstruction of their subsistence way of life, but they have also passed on their passion to incoming non-Native settlers. Today, every resident of Alaska is legally a subsistence user, and most of them also feel that way. Subsistence hunting and fishing are recreational activities for the majority of Alaskans. These circumstances shaped the development of the current structure of wildlife management. The high appreciation of wild food resources of all user groups, be it Native or non-Native, rural or urban, have led to a wildlife management system that regulates almost all aspects of hunting and fishing practices. Furthermore, the competition between different user groups is reflected in various conflicts over access and allocation of specific resources. These distribution conflicts of wild resources become visible in the attempts and efforts of Native people to secure their subsistence economies against outside competition – from urban as well as non-Native rural residents. This thesis is also concerned with these conflicts

over natural resources. The Copper River Basin Community Subsistence Hunt has been an attempt by the management authorities to meet Native (Ahtna) subsistence needs and practices, but the specific legal and political situation in Alaska has led to severe resistance and opposition from non-Native groups of subsistence and sport hunters. The central location of the Copper River Basin and the road connection to the two major urban regions of Alaska further increases the competition over a limited resource such as moose, in the case of the Community Subsistence Hunt.

In this thesis I focus on this specific resource distribution conflict and analyze the impacts of the current conflict on the attempts of the Natives to become a meaningful partner in the management process of wildlife. Two questions are particularly important for my thesis and will be discussed: First, what are the impacts and effects of growing urban competition on the subsistence economy of a 'road-connected' rural community? Second, what are the effects on Native rural people of engaging in a bureaucratic, rational-driven wildlife management system? I will discuss these questions theoretically and empirically via a case study.

I applied the theoretical framework of political ecology to this specific distribution conflict over moose in the Copper River Basin, an animal resource highly regarded by all user groups. With the framework of political ecology, I present in detail the historical, legal and political events as well as the different actors and interest groups involved in the distribution conflict. I look at the present distribution conflict from different perspectives, including economic, cultural, legal, political and technological aspects, to provide an accurate and correct impression of the current situation. In the concluding pages I will give some ideas on possible outcomes of the present conflict and theoretical conclusions that arise from the case study.

In chapter 2 of the thesis I describe my research design and fieldwork, and display and discuss the applied methods and techniques for gathering data. Chapter 3 deals with the theoretical framework of political ecology. I trace the emergence of the field of political ecology to its roots and underlying concepts, describe the approach and then discuss two theoretical aspects that are connected with the case study. The first aspect is the material and infrastructural factors that shape and influence subsistence economies, and the second consists of theoretical aspects of the interplay between Traditional Ecological Knowledge, co-management and bureaucratization. In chapter 4 I present the most important events and developments concerned with subsistence

in a historical summary from pre-state Alaska to the present time. Chapter 5 then goes deeper into the topic of wildlife management, showing the historical development of game laws in the United States before focusing and describing the actors involved in the Alaskan wildlife management system. In part three of the chapter I focus on the economic situation in rural Alaska, which is characterized by the mixed-economy structure and the two distinct (but related) modes of production: the income from the cash economy and the resources obtained from hunting, fishing and gathering. Chapter 6 deals in detail with the Ahtna people and the Copper River Basin moose Community Subsistence Hunt (CSH). Before dealing with the Board of Game meeting and the outcome of the present struggle, I focus on some aspects of Ahtna life, in particular with ecological and environmental features of their territory, demographic structure, social and political organization as well as economic aspects and subsistence. After tracing the events at the meeting, I conclude by discussing important features and aspects that came up in the interviews and during the meeting.

2. Research design and methodology

At the beginning of my research project for this master thesis, I was concerned and interested in questions of wildlife management, subsistence, human-animal relations, hunter-gatherer, nature and culture, and co-management, as well as the belief that wildlife management was more about managing human activities than animals. As I started reading about these different research fields and digging deeper into the details of the topics, my interest shifted toward the questions of Native and rural subsistence and competition from the growing urban population, the 'techno-economic differentiation' (Pelto 1973, 1987, see Chapter 3.4 of this thesis) between urban and rural and wealthy and non-wealthy hunters, and the socioeconomic effects on the people who are living 'partly off the land'. Additionally, the issue of political participation and Native and rural people's access to the management became more relevant for my research. With the first ideas and thoughts becoming clearer, I started to design a formative research model that was still very broad and open.

Researchers build formative models based on their own experience, curiosity, knowledge base, self-conscious 'biases' or predilections, close reading of the literature on the topic, and ideally, initial visits to the field – or if not that, at least in-depth conversations with people who know the field situation well. The formative model can be very general, or very specific, or somewhere in between. (LeCompte/Schensul 2010: 151)

In the preparation for a second field trip to Alaska with the help of James Van Lanen from the Alaska Department of Fish & Game (ADF&G) and Robbin La Vine from the Office of Subsistence Management (OSM), I came across the efforts of the Ahtna people to establish a co-management regime together with the Department of the Interior and their struggle over the Community Subsistence Hunt (CSH). I planned my fieldwork trip around a special Board of Game (BOG) meeting in Glennallen which concerned the CSH on March 18th to 22nd, 2017. During the three-week fieldwork trip in 2017 I had the chance to speak and interview Ahtna people, listened to their testimony at the BOG meeting, met management officials and visited some of the Ahtna villages. Back in Austria I started to explore the approach of political ecology and came to the conclusion that the Ahtna CSH would be a suitable case study in political ecology.

2.1 Research design

I started the research for my thesis with a broad and open approach and with very general questions about wildlife management and human-nature relations. This was refined to a narrower framework of political ecology and a detailed case study of a specific local situation (Copper River Basin) and resource (moose).

I ended up with this particular case study partly because of serendipity, as the BOG meeting happened to be at a time I could get off work, but also due to the efforts of the Ahtna. Their efforts were brought to my attention by Robbin La Vine and James Van Lanen, with whom I corresponded in advance of my fieldwork.

It was clear from the start that the study would have a qualitative design, using ethnographic methods like observation, participant observation, semi-structured and open-ended interviews and intensive document analysis and research. In addition, I also wanted to include quantitative data from government agencies (Census Bureau, Department of Labor and Workforce Development, Alaska Department of Fish and Game, Office of Subsistence Management, etc.) for statistical information about the population, employment, wages, incomes, etc. A combination of qualitative and quantitative data is more fruitful than relying solely on either set of data. The framework of political ecology is based on a variety of qualitative and quantitative methods:

Political ecology is thus methodologically plural, and most studies employ some combination of qualitative, broadly ethnographic methods (interviewing, direct observation) with historical documentary analysis and frequently quantitative analysis using GIS, survey methods, and an array of methods common in ecological science. (Bridge/McCarthy/Perrault 2015: 8)

2.2 Fieldwork

The initial idea for this thesis was the three-week field trip organized by the University of Vienna in 2015. This resulted in a preliminary study of the dual-management regime for subsistence hunting in Alaska. Over the course of this study I researched the historical, political and legal processes that led to the current system. From this starting point I began to plan the research design for my thesis. After half a year of intensive literature review and research into the subject of subsistence hunting and fishing, I started to organize a second fieldwork trip for March or April 2017. Because

of my work situation, I could only plan a three-week trip, which meant a tight schedule and limited time for field-based methods.

I arrived in Anchorage, Alaska on March 15th and had a meeting the next day with Robbin La Vine at OSM, where she introduced me to people who work for the federal government managing subsistence uses and users on federal lands. I had informal talks with some of the officials as well as recorded interviews. The next day I drove to Copper Center inside the Copper Basin, and Ahtna people organized an evening event at the Wrangell-St. Elias National Park and Preserve Visitor Center. The Ahtna people occupy their own building used for cultural and social events as well as a museum for Ahtna history and culture. At this informal event, which took place the evening before the start of the special Board of Game meeting, I had the chance to meet some of the Ahtna people and engage in some informal talks about the subject. I enjoyed some superb typical Ahtna foods like moosehead soup and could get a first glimpse of the issues at stake for the Ahtna people and the CSH. The following day, the BOG meeting commenced in the morning at the Alaska Bible College in Glennallen. The meeting was scheduled for four days and went from the morning until the afternoon. Over the course of the four days, I listened to the reports of management officials and wildlife biologists from ADF&G, OSM and others as well as to the testimony of hunters (rural and urban, native and non-native) and the representatives of the Advisory Councils. The last day of the meeting was for deliberation and decision-making by the board members. During breaks I had the chance to talk to various people and get some background information. On two of the evenings I was invited to dinner with currently or formerly employed anthropologists from the Division of Subsistence at ADF&G, who were also present at the meeting. On the last day of the meeting, James Van Lanen took me on a short hunting trip with a friend of his. I had the chance to experience the most common mode of hunting practiced by Ahtna people, 'road hunting,' which is described in greater detail later in this thesis. The next two days were spent writing down and transcribing records taken during the meeting and trying to arrange meetings with people for interviews or talks. The following week I kept my base in Tazlina, which is close to Glennallen, and visited the Ahtna villages Tsedi Na (Chitina), C'ulc'e Na' (Gulkana), Ggax Kuna' (Gakona), Tssiis Na' (Chistochina) and Mendaesde (Mentasta). I was invited to the main office of Ahtna Inc. by Bruce Cain and had some conversations there. I spent a night in Tok, at the northern end of the Ahtna traditional territory, and

then drove to Yidateni Na (Cantwell) via Fairbanks, where I spent a day at the library to gather data. In Cantwell I had an interview with an Ahtna elder and talked to some younger Ahtna hunters.

As the Denali Highway was still closed at that time, it was not easy to return to Copper Basin. The last few days were spent in Anchorage collecting literature and reports not available in Austria or online.

The fieldwork time was very limited and I couldn't get as much contact with the Ahtna people and the Copper Basin environment as I would have liked. I am nonetheless thankful for the time people spent with me and the opportunity to go there. To compensate for the limited fieldwork time, I read additional extensive case studies and literature about the Ahtna, the Copper River Basin and subsistence in Alaska.

2.3 Methods

The time for field-based data-gathering methods was limited over the course of this thesis. Nonetheless, I applied several ethnographic methods during my fieldwork and research. These methods were observation and participant observation, semi-structured interviews with open-ended questions, and text analysis and literature research. I did not apply any methods for gathering quantitative data but relied on the statistical data provided in reports, studies and by government agencies.

The main anthropological research method is participant observation, introduced into anthropology in the beginning of the 20th century. Most researchers acknowledge Bronislaw Malinowski (1922) for the development of the method. Malinowski was one of the first to apply and thoroughly describe the method. Others at the time and before him also applied similar techniques in research. Despite the long tradition of using this method in anthropology, there is no single agreed-upon definition of it. Some use the term 'participant observation' to refer to ethnographic fieldwork in general and to the broader approach of scientific research including different methods, but I agree with Dewalt and Dewalt (1998) in their use of a narrower definition of the method. This sets it apart from the general mode of observation and participation people pursue in everyday life:

We take this position [a narrower approach to the definition] because, while much of what we call fieldwork includes participating and observing the people and communities with whom we are working, the *method* [italics in original] of participant observation includes the explicit use in behavioral analysis and recording of the information gained from participating and observing. That is, all humans are

participants and observers in all of their everyday interactions, but few individuals actually engage in the systematic use of this information for social scientific purposes. (Dewalt/Dewalt 1998: 259)

The systematic recording and making use of the information gathered is the main element of the method. Without it there would be no scientific method. Besides focused observation and participation, taking notes of fieldwork experiences and systematically structuring these notes is the primary task of an anthropologist using this method. Reflecting on your own position and the influence that your presence may have on the behavior of others is equally important. Successful use of the method also relies on the character and charisma of the researcher as well as the situation.

During the course of a day of fieldwork, the researcher shifts from observation to participation and back, so there is no clear boundary between observation and participant observation. The method of observation can, of course, be used exclusively without participation at all; the other way around is not possible. One's own assumptions are challenged through systematically and carefully logging the activities and observations and thoroughly reviewing notes and materials. This is crucial for the successful use of the participant observation method in scientific research.

Interviews are another method used in this thesis that require other skills of the anthropologist. In addition to participant observation, conducting interviews is the second most important method for data gathering in anthropological research. Ethnographic or narrative interviews with open-ended questions are the most elaborate form of interviewing and these require proficiency and experience. Successful interviewing is regarded by some as more of an art than a technique and, at least in some respects, this is true.

The interviewing and observing discussed here are rather performing arts, and this manual is something like a musical score. You have to know how to do it (or something very like it) in some important sense beforehand; you have to already be a 'musician.' You have to make use of social, psychological, and probably evolutionary skills of social knowing and interpersonal interaction that you bring to the 'score,' to the manual. (Levy/Hollan 1998: 334f)

Interviewing has to be learned by practice, and with experience the interviewer has a better chance of getting detailed and extensive answers from the interviewees. Paying attention to the details and feelings, being able to read between the lines, and

being responsive as well as charismatic are crucial factors. For interviewers with less experience, semi-structured or guided interviews are better suited. For my interviews I prepared questions and a guide, trying to ask the same questions to the same group of people (officials, Ahtna, etc.) to have comparable answers and responses. Depending on the answers during the interviews, I did not always stick to the guide, as being flexible is also an important skill of interviewing.

The method of interviewing and the reliance on it in anthropological research is also the source of some criticism from other disciplines and experts within the discipline. The reasons given for this are that interviews do not produce easily replicable results and answers in interviews cannot always be taken as reliable and true. People in general exaggerate, downplay, lie or make up stories in their interactions with other people, and the same applies to interviews. When using interviews in research, the answers must be checked and verified by other sources, including other interviews. The more interviews and individual perspectives that can be gathered, the more possible it will be to make comparisons and more general conclusions.

Recording the interview is necessary, as taking notes during the interview is often very difficult and can be detrimental. After conducting an interview, the following task is to transcribe the spoken words. Transcribing means to write down word-for-word exactly what and how it was said in the conversation. Transcribing an interview is time-consuming, but without it the interviews would be useless for research. Only in the written form can you compare the interviews and answers, look for similarities and start to analyze the spoken words into categories and codes suitable for the research (see Silverman 1993: 59ff).

In addition to the data collected in-field, the use of literature and other sources of information is equally important. This means extensive research in libraries, archives and online. For the analysis of texts there are different approaches that can be used like content analysis or discourse analysis.

Content analysis is an accepted method of textual investigation, particularly in the field of mass communications. It involves establishing categories and then counting the number of instances when those categories are used in a particular item of text, for instance a newspaper report. (ibid.)

I used both methods for this thesis – content analysis for newspaper and government reports and discourse analysis for the written transcripts of the interviews.

Besides the qualitative methods used in this thesis, I have also integrated quantitative data collected by other institutions, agencies and researchers into my analysis. This includes, among others, demographic figures, income and wage numbers and harvest quantities. The numbers are an important addition and contrast to the statements and perspectives of individuals.

One last point concerning the methodology and research design in anthropology that must be mentioned is the importance of continually reviewing the collected materials, questioning assumptions and cross-checking information.

A key feature of ethnographic data analysis is that the process is recursive or iterative. It involves continually raising questions in the field, further and further modifying and clarifying ideas about what has been discovered. (LeCompte/Schensul 2010: 197)

3. Political ecology and theoretical framework

Anthropology is defined as the science that deals with human origins and the development of cultural and social behavior at different places and times in the world. Humans and their development cannot be separated from the given environment and surroundings; therefore, ecology and the study of ecological features and their influence on humans becomes an important task in anthropological research. Further humans are social and political beings, making decisions together and in consultation with other humans. From this perspective, the approach of political ecology for anthropological research concerned with competing interests over natural resources and the question of a sustainable cohabitation of groups with heterogeneous cultural and social beliefs seems useful and fruitful. This approach combines two aspects: that human development and actions are influenced and limited by the environment, and that competing interests always politically influence decisions about the distribution of resources. This occurs even in decisions where scientific objectivity ostensibly seems to be the key basis. Acknowledging this, the approach of political ecology seeks to reveal the competing interests underlying a decision and to take into account the ecological, economic and cultural features (Escobar 2006: 9). These findings and conclusions mainly resulted from scientific research of the last century and demonstrate a historical process. In the 20th century, the social sciences were characterized by successive approaches, with each tearing down the preceding approach and starting over again. “As each new approach goes after its precursors with an ax, the social sciences have come to resemble, as Eric Wolf (1990:588) so poignantly phrased it, ‘a project in intellectual deforestation’” (Greenberg/Park 1994: 1).

Political ecology does not amount to a new program for intellectual deforestation, rather it is a historical outgrowth of the central questions asked by the social sciences about the relations between human society, viewed in its bio-cultural-political complexity, and a significantly humanized nature. It develops the common ground where various disciplines intersect. (ibid.)

Where did political ecology come from and what are the roots and common ground? What can be achieved through this approach? These are the questions I want to answer on the following pages.

3.1 Ecology, evolution and the emergence of political ecology

Political ecology as a scientific approach in social sciences emerged in the 1970s and 1980s and was further developed by the increasing environmental concerns triggered by the growing industrial exploitation of natural resources and the ever-increasing demand for energy. The theoretical concept of political ecology is rooted in the approaches of cultural ecology, pursued by Julian H. Steward and others in the 1950s, and political economy. Political economy, as an approach to questions of economic distribution and organization, originated in the writings of 18th and 19th century scholars like Adam Smith, Thomas Hobbes and Karl Marx.

Cultural ecology is defined by Steward as “the study of the process by which a society adapts to its environment. Its principal problem is to determine whether these adaptations initiate internal social transformations of evolutionary change” (Steward 1977: 43). Cultural ecology and ecology are rooted in the concept of biological evolution postulated by Charles Darwin in his most famous work, “The Origins of Species”, first published in 1859. Darwin argued that the diversity of biological organisms in the world was the result of individual competition and natural selection (“survival of the fittest”).

Cultural ecology is broadly similar to biological ecology in its method of examining the interactions of all social and natural phenomena within an area, but it does not equate social features with biological species or assume that competition is the major process. It distinguishes different kind of sociocultural systems and institutions, it recognizes both cooperation and competition as processes of interaction, and it postulates that environmental adaptations depend on the technology, needs, and structure of the society and on the nature of the environment. (Steward 1977: 44)

Successive research showed that competition was not the only process at work in evolution, but also cooperation, and that “short-term self-interested behavior” could not account for all the developments in the world.

An adequate analysis of such decisions cannot be usefully reduced to an explanation in terms of short-term self-interested behavior. The relationship between productive activity, human character and the environment is fluid and both historically and regionally specific. There is a contribution from evolutionary processes but rarely any causal domination. (Greenberg/Park 1994: 3)

Cultural ecologists in the 1960s and 1970s conducted studies concerned with specific populations and their place in ecological systems. They tried to explain cultural practices and institutions of specific groups as adaptations to the ecological

system they live in. A major question was how internal dynamics lead to change within a specific system. They did, however, mostly stay on a micro-level and concerned themselves with specific situations and local adaptation (ibid.).

Although micro-approaches had considerable success with small, rural populations, the application of simple ecological models to human societies soon seemed problematic. Some analyses were accused of reifying the ecosystem and over-emphasizing its self-regulatory characteristics and stability. Others were criticized for having no clear criteria for determining the boundaries of systems, and of minimizing the interactions between 'defined' local populations and larger wholes in which they are embedded economically and politically. (ibid. 4)

The biggest influence of ecological research on the social sciences was, rather than looking at individual self-interested behavior as the explanation for adaptation, they started to consider the interactions between populations and their environment and looked at structural causalities instead. Cultural ecologists consistently highlighted the role of power, politics and culture and they consistently argued to enlarge the unit of analysis. "The logical outcome of this has been incorporation of the broader political and economic systems proposed in the field of political economy" (ibid. 5).

Political economy originated, as mentioned above, in the writings of 18th and 19th-century scholars like Adam Smith, Karl Marx and Thomas Malthus, among others. They were concerned with questions of economic distribution and political organization. At the same time, cultural ecologist approaches gained ground in the 1970s and dependency theory emerged as a criticism of modernization theory. Modernization theory argued "that societies went through a regular series of stages in their economic development" (ibid. 6). In this light the developing countries were characterized by dual economies: the modern capitalist sector on the one hand and, on the other, the backward traditional sector, which was seen as a remnant of the past. Dependency theorists like Andre Gunder Frank rejected this dualist view and argued that the backward part of the economy was a product of the integration of and dependence on the "capitalist metropolis."

In this view, a hierarchical chain of metropolis-satellite relations linked developed metropolis countries to their dependent satellites; within these, national metropolises were surrounded by regional satellites, which in turn were metropolises for local satellites. (ibid.)

One of the main criticisms of the dependency theory was that in the model "exchange replaces the role of production [and that] the model has no internal dynamic through

which it can transcend its own contradictions” (ibid.). The world-system theory by Immanuel Wallerstein (1974) attempted to meet the criticisms of dependency theory. In this theory, with its increased scope and chronology, it is argued that since the 16th century a global market has emerged which includes all the of the world populations in a single economic system with a worldwide division of labor. World-system theory distinguishes three different situations inside the global market: core, semi-peripheral and peripheral states or geographic areas. The core states dominate politically and economically the world-system and appropriate the raw materials and agricultural products of the semi-peripheral and peripheral areas. The core states are marked by capital-intensive systems of production and advanced technologies, whereas the peripheral and semi-peripheral areas are marked by labor-intensive systems of production. The world-system theory has been criticized for more or less the same reasons that the dependency theory was subject to criticism. World-system theory puts large parts of the world out of sight and analysis and concentrates on the dominating effects of the core on the periphery. It neglects the social, cultural and political processes in the periphery and obscures the heterogeneity inside the societies that make up the system (Greenberg/Park 1994: 7).

Because these macro-approaches to the world-system were more interested in how the core exploited the periphery than in the reactions or ecological adaptations of local populations, not only did these approaches tend to lump the breadth of social and cultural diversity under the rubrics of ‘periphery’ or ‘traditional society,’ but they tended to leave unexplored the complex processes by which other modes of production were penetrated, subordinated, transformed, or destroyed as they came into contact with the world-economy. (ibid.)

In 1972 Eric Wolf published his article “Ownership and Political Ecology,” using the term ‘political ecology’ for the first time to discuss ownership and inheritance in the Alps. It was a starting point for a new way of inquiry that combines “multiple local ecological contexts with a greater knowledge of social and political history, the study of inter-group relations in wider structural fields” (Wolf 1972: 205).

After Wolf’s publication, social scientists began to increasingly explore the “complex interactions between local populations and the larger, even global political economies in which they are embedded” (Greenberg/Park 1994: 7). Through a non-monolithic view on capitalism that acknowledges the different and uneven processes of development throughout the world, the focus of investigation could be put on the local manifestations and impacts.

In the historical process of combining with other modes of production, capitalism introduces new social forms, appropriates or transforms others, and yet – although subordinate to the capitalist economy; these resulting syncretic modes not only retain some indigenous ingredients, but creatively rework those forms imposed upon them to meet their own needs. (ibid.)

The stage was open for new ways and approaches to look at the different developments on a local and global scale that the spread of capitalist production brought to the different parts of the world. The interaction between local communities, larger units and the global economy as well as the local adaptations and creations now came into focus. In 1999, Arturo Escobar's article "After Nature: Steps to an Antiessentialist Political Ecology" was published. In this article Escobar posed the question:

Is there a view of nature that goes beyond the truism that nature is constructed to theorize the manifold forms in which it is culturally constructed and socially produced, while fully acknowledging the biophysical basis of its constitution? (Escobar 1999: 2)

The aim of Escobar's argument is to establish that social, cultural and biophysical all have central roles, although not essential ones. Nature is socially constructed, but at the same time is also a biophysical reality. The question is not which is more important or essential. They are working at the same time and have an important role to play, and Escobar's focus is on interconnectedness and inter-relations. He introduces a framework for analyzing political ecology questions distinguishing three regimes: capitalist nature, organic nature and technonature. These three regimes "coexist and overlap. Moreover they co-produce each other, like cultures and identities, they are relational" (ibid. 5). For the examination of each of these regimes, Escobar proposes a different field or approach: the anthropology of local knowledge for organic nature, historical materialism for capitalist nature and science-and-technology studies for technonature.

When Escobar introduced his antiessentialist framework, the approach of political ecology was subject to severe criticism. In 1999, Vayda and Walters published their article "Against Political Ecology," arguing that most studies in political ecology are too narrowly focused on political rather than ecological factors.

As a general rule, more attention to political influences on human/environment interactions and on environmental change itself is no doubt a good thing, since such influences are no doubt often important. Many self-styled political ecologists, however, go well beyond asking for or paying more attention to such influences.

Problematically, they insist that political influences—especially political influences from the outside, from the so-called *wider* political-economic system—are *always* important, arguably more important than anything else, and should accordingly be given priority in research [*italics in original*]. (Vayda/Walters 1999: 168)

The criticism of Vayda and Walters resulted in a shift away from questions of politics and power in some recent studies in political ecology, which focus more on human-animal relations as well as on non-human beings. In a recent article from 2018 called “After Political Ecology,” which reviews four recently published books in the field of political ecology, Bengt Karlsson argues for a synthesis of the more recent approaches with the established focus on the political:

While I have argued that political ecology tends to reduce the environment to questions of resource appropriation, issues of power seem to be sidelined in the newer type of anthropology that is attentive to the lives of animals, plants and other non-human beings. While this might not be considered a problem – scholars in the respective fields just study different things – the call here is for some kind of synthesis, a scholarship that manages the balancing act of riding two horses at the same time. In the case of political ecology, it is a question of engaging with nature in a new way. (Karlsson 2018: 24)

In a recent contribution for the “Routledge Handbook of Environmental Anthropology” Brondizio, Adams and Fiorini (2016) trace the historical and chronological development of Environmental Anthropology, the general area of investigation of human-environment relationships, from cultural ecology to ecological anthropology, political ecology, symbolic ecology, historical ecology and ethnobiology. They argue, like Karlsson, for a synthesis of the different approaches in Environmental Anthropology, “moving the discipline towards a new synthesis commensurable with the complexity of human-environment interactions in a world of accelerated and interconnected changes” (Brondizio/Adams/Fiorini 2016: 1).

A look at recent publications and studies in the field of political ecology as well as Environmental Anthropology reveals that there are various attempts to accomplish this new synthesis to overcome disciplinary boundaries. The scope of current research in political ecology alone is wide and encompasses a variety of topics and fields from resource distribution to health care.

Even a cursory look at journal titles and conference presentations shows that the label ‘political ecology’ is applied to research topics as seemingly disparate as water

access in India, land grabs in the Amazon, Sahelian pastoralism, lawn care in the United States, fisheries management, wetland markets, indoor air quality, AIDS, and obesity. (Perrault/Bridge/McCarthy 2015: 3)

The wide applicability of political ecology on different fields, topics and areas can be a strength, as researchers from different disciplines unite under a common framework. It can also be a disadvantage, as without clear definition the framework may appear arbitrary. In their introduction to the first volume of the *Journal of Political Ecology* in 1994, Greenberg and Park write:

The space for dialogue between political economy, at its best, and ecology is potentially enormous. As semi-devout Wittgensteinians, we feel it would be ill-advised to define 'political ecology' and maintain rather that all legitimate forms of political ecology will have some family resemblance but need not share a common core. (8)

I doubt that the 'family resemblance' is enough common ground to establish a scientific approach that can easily be followed. That is why I present a more concrete definition of political ecology as the study of ecological resource distribution conflicts by Martinez-Alier:

Political ecology studies ecological distribution conflicts. By ecological distribution is meant the social, spatial and inter-temporal patterns of access to the benefits obtainable from natural resources and from the environment as a life support system, including its 'cleaning up' properties. The determinants of ecological distribution are in some respects natural (climate, topography, rainfall patterns, minerals, soil quality and so on). They are clearly in other respects, social, cultural, economic, political and technological. (Martinez-Alier 2002: 73).

My thesis with the following case study of the Ahtna Community Subsistence Hunt is rooted in this second, more concrete definition of political ecology but does not reject the openness of the approach as a whole. Ecological resource distribution conflicts can be examined and analyzed from a wide variety of angles, each contributing important insights and answers to different questions.

Apart from defining political ecology as the study of ecological resource distribution conflicts, Martinez-Alier also detects two different styles of political ecology studies:

The first style of political ecology is 'a fusion of human ecology with political economy... [It is the study of, (comment by author)] a series of actors, differentially empowered but with different interests, contesting the claims of others to resources in a particular ecological context'. [...] The second style of political ecology consists of 'discourse analysis'. This has to do with queries about the meaning or lack of

meaning of 'environmental resources and services' for different cultures, with the 'social constructedness or reinvention of nature.' (ibid. 256)

This thesis adopts the first style with its "emphasis on material interests as much as social values" (ibid.) but also takes into account the importance of understanding the different meanings of specific resources, values and nature itself. One of the main questions in environmental conflicts, as well as resource distribution conflicts from a political perspective, lies in the differing views on nature from different peoples and the nature–culture dichotomy (or nature–society dichotomy) discussed and contested in Anthropology for at least the past fifty years (see Ingold/Pálsson 1996). I will briefly trace this discussion and highlight some important points before engaging in a theoretical discussion on the integration of Traditional Ecological Knowledge in management processes. I will discuss this integration with a focus on power and on the impacts local people experience in connection with bureaucratic procedures in the management of wildlife and subsistence resources. In the fourth part of the chapter, I present and discuss the concept of "techno-economic differentiation" and the effects of material dimensions on the ability to pursue subsistence hunting today.

3.2 Differing views on nature?

The ecological problems and ills of the present time and questions about the relationship between man and nature are often traced back to the acceptance of 'Enlightenment Thinkers' that nature was there for the use of man. The domination of nature by man was seen as an assignment to transform the world to the needs of man. Many obstacles encountered today in resource distribution conflicts involving indigenous or Native people and management authorities originated from this contrasting view of the relationship between nature and man. Traditional Ecological Knowledge (TEK) is more than just knowledge about nature, it is the framework in which the worldviews of indigenous people are rendered and made explicit. TEK does not create a distinction between man and land or man and animals but binds them together. This is explicitly illustrated by Paul Nadasdy in his research about TEK with the Kluane, a group of Athabaskan Indians, living in the Yukon Territory, not far from the Ahtna:

the absence of a strict separation between humans and the environment, the very idea of separating 'ecological' from 'non-ecological' knowledge becomes nonsensical. This is powerfully illustrated by Native elders who, when asked to share their knowledge about the 'environment,' are just as likely to talk about 'non-environmental'

topics like kinship or respect as they are to talk about animals and landscapes” (1999: 4).

Some see the concept of ‘mastery over nature’ rooted in Judeo-Christian beliefs and, although early Christian texts mention nature and the relationship to man, they actually do not say much about what is conceived as nature today (Atkinson 1991: 129). It is more likely that most of the ideas and thoughts of the early Christian age are derived from Greek philosophers and the emergence of early science in Greece.

By contrast [to early Judaic and Christian thought of nature, comment by author], the intellectual residue of ancient Greece is immensely rich in attempts to conceptualise nature. The great age of Christianity from Saint Augustine to the Renaissance was, in so far as it was interested in nature at all, concerned with assimilating ancient Greek thought, as it filtered into Western Europe from various sources, in terms of Christian concerns and terminology. (ibid. 128f)

According to David Harvey, the Christian influence on the ‘domination of nature’ thinking was not overly significant, although some thoughts may have been powerful, but puts emphasis in the discussion on the ideals of Enlightenment.

The particular role of the ‘domination of nature’ theses can best be understood in relation to the twin Enlightenment ideals of *human emancipation* and *self-realization*. *Emancipation* addressed a whole range of issues starting with problems of material wants and needs, physical, biological, and social insecurities, passing through varieties of oppression of the individual by state, dynastic, or class privileges and powers, through to emancipation from superstition, false consciousness, organized religion, and all-manner of supposedly irrational beliefs. *Self-realization* was an even vaguer proposition, but it certainly called for the release of the creative and imaginative powers with which humans are individually endowed and the opening up of entirely new vistas for individual human development, whether it be through production, consumption, artistic, scientific and cultural output, policies or law [italics in original]. (Harvey 1996: 122).

The 17th and 18th centuries did bring huge transformations to the lives of people living in Europe and, over the course of the 19th and 20th centuries, these transformations were carried over to most places in the world. The ideals of emancipation and self-realization broke up former political systems and systems of social organization, and they brought new ways of thinking and acting towards nature and man. The scientific achievements and discovering of natural laws further boosted the conviction that nature and its resources were here for the taking and to improve the lives of individuals. Man, it was postulated, was not living at the mercy of nature anymore,

but nature could be controlled and managed. This can be seen in the evolution of conservation and management regimes for nature at the beginning of the 20th century.

Individualism, derived from the ideals of emancipation and self-realization, is a dominating concept in capitalist society and lies at the core of the exploitative view that exists towards nature. The individual appropriation of natural resources for one's own benefit without taking into consideration the consequences for fellow human beings and the environment contradicts the views of the relationship of nature and man in many contemporary and former indigenous cultures, where the well-being of the community and culture is in the foreground, and this well-being cannot be separated from the surrounding environment. This can be seen in the attempts of the Ahtna to become a meaningful partner not on an individual level but as a community and a culture. It is also explicit in the effort to obtain quotas for hunting not individually but as a community, like in the Community Subsistence Hunt.

It is important, however, not to make the mistake of seeing indigenous people as true or better conservationists and preservers of nature, as Harvey points out.

Indigenous groups can, however, also be totally unsentimental in their ecological practices. It is largely a western construction, heavily influenced by the romantic reaction to modern industrialism, which leads many to the view that they were and continue to be somehow 'closer to nature' than we are. Faced with ecological vulnerability often associated with such 'proximity to nature,' indigenous groups can transform their practices and their views of nature with startling rapidity. Furthermore, even when armed with all kinds of cultural traditions and symbolic gestures that indicate deep respect for spirituality in nature, they can engage in extensive ecosystemic transformation that undermine their ability to continue with a given mode of production. (Harvey 1996: 188)

It is, of course, a question of scale, as the impact of indigenous people on the environment with their mode of production is usually marginal compared to the mode of production of capitalist society with its large-scale extractive industry and an increasing demand to obtain energy and resources from nature.

In a contribution to the book "Nature and Society," edited by Gísli Pálsson and Philippe Descola in 1996, Pálsson argues to distinguish three paradigms in relation to human-environmental relationships. The three paradigms are environmental orientalism, environmental paternalism and environmental communalism. The first is characterized by negative reciprocity, the second by balanced reciprocity and the last

by generalized reciprocity. While environmental orientalism exploits nature, environmental paternalism protects nature, but both are rooted in the belief that there is a distinction between nature and society/culture. Environmental communalism, on the other hand, rejects this dichotomy of nature and society and emphasizes reciprocity, dialogue and contingency (Pálsson 1996: 63).

The first two paradigms are often present and working at the same time in the same place, creating an area of tension drawing the public attention sometimes in the direction of exploitation and sometimes in the direction of protection. This clearly can be seen in a lot of environmental conflicts when the line of conflict is drawn between more economic development and the protection of nature. Depending on the situation at a specific time and place, people will either be drawn to support more economic development or stricter protection of nature. The paradigm of communalism, presented by Pálsson, may also be simultaneously present in a specific place, but it represents a clearly different conception of the nature-human relationship that corresponds with the views and convictions of a lot of indigenous peoples and the concept of TEK.

In Alaska there is a management regime that propagates and secures the individual rights of hunters and fishers according to the principle of individualism. In other words, the management regime operates in an area of tension between the paradigms of orientalism and paternalism. The interests and objectives of communities living together in a specific region like the Ahtna are not secured on an equal level and communalism as a paradigm is not part of the current management regime. The Community Subsistence Hunt has been an attempt by the Alaska Board of Game to accommodate the community interests, as will be seen at the end of the thesis, but opposing interests are strong in Alaska and resistance against these attempts is common.

At the same time, the spread of the capitalistic mode of production and the cash economy, moving further into rural Alaska, is slowly but persistently eroding community interests and the paradigm of communalism, and promoting individualistic ambitions and responses by Alaska Natives. The consequences and attempts to push back individual interests against community interests are an overlying topic of this thesis and will be seen in Chapter 6.

In the next section of the chapter, I will discuss what practical consequences the differing views of nature and the different paradigms in human-environment relations

have for resource distribution conflicts. A common theme in management and co-management regimes is the use and integration of local knowledge (Traditional Ecological Knowledge) into the practices of managing wildlife. On the next pages I will briefly discuss what this integration has to do with power and bureaucracy.

3.3 Traditional ecological knowledge, power and bureaucracy

Traditional knowledge (TK), traditional ecological knowledge (TEK), indigenous knowledge (IK) and local knowledge are all terms that have been used to describe the knowledge and experiences indigenous or Native people have about their society, culture and ecology. Some are more specific than others, like traditional ecological knowledge, which refers to the empirical knowledge Native people have of the land they live in. After considering multiple ways of defining indigenous knowledge and pointing out some inconsistencies in the term, Berkes (2012) comes to a working definition of traditional ecological knowledge I find useful for this thesis. He defines traditional ecological knowledge “as a cumulative body of knowledge, practice, and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment” (Berkes 2012: 7).

Charles Menzies (2006: 1) points out similar attributes for TEK and IK as follows: cumulative and long-term, dynamic, historical, local, holistic, embedded, moral and spiritual. Aboriginal people themselves often define TEK or IK much further. Highlighting the practical means of TEK, McGregor writes:

Aboriginal people define TEK as much more than just a body of knowledge. While this is a part of it, TEK also encompasses such aspects as spiritual experience and relationships with the land. It is also noted that TEK is a ‘way of life’; rather than being just the knowledge of *how* to live, it is the actual *living* of that life. One way of looking at the differences between Aboriginal and non-Aboriginal views of TEK is to state that Aboriginal views of TEK are ‘verb-based’ – that is, action-oriented [emphasis in original]. (2004: 78)

Out of these considerations it would likely be more accurate to talk of a worldview rather than of knowledge or science, as knowledge for Natives is nothing without the doing and living. It is not surprising, therefore, that TEK is not easily incorporated into the western management process of wildlife. For western researchers, TEK is only a part of a knowledge system they may or may not take into account for their decisions. For Native people, there is no such decision. Berkes traces the differences between

western science and indigenous knowledge systems to a philosophical and also political/power question:

According to some scholars, the philosophical differences between the two kinds of science are not sharply defined; rather, it is our reductionist analysis that tends to exaggerate the differences (Cordell 1995). [...] Suffice to point out that the sources of conflict between practitioners of Western science and traditional science often have to do with the power relationships between Western experts and aboriginal experts, who have different political agendas and who relate in different ways to the resource in question. (Berkes 2012: 13)

For the successful cooperation between western scientists and regulating bodies with Native people, it is crucial to recognize that there are several ways to conserve the land and that wildlife management is not a unique western invention but one that has been practiced by indigenous people for a long time (see Berkes 2012: 14).

The common way of incorporating TEK into management bodies without this recognition leads to problematic developments:

With the increasing acceptance of traditional ecological knowledge in recent years, a new kind of political problem has emerged. Many national and international programs incorporate indigenous values and knowledge; in some cases, there is a legal obligation to do so. This has resulted in the creation of a 'traditional ecological knowledge industry,' often using rapid rural appraisal kinds of techniques (Grenier 1998) to generate material to be used as mandated. There are two problems with this approach. First, the material so generated is often out of cultural context (Nadasdy 1999). Second, traditional ecological knowledge often becomes co-opted into non-indigenous frameworks that may be fundamentally different from indigenous ways of thinking (White 2006). (ibid. 16)

Out of these considerations two questions arise. First, is traditional knowledge or TEK really a body of knowledge comparable to western scientific knowledge? Second, what effects and impacts does the integration of TEK into the management process have on local indigenous people, and what are the consequences for current co-management regimes?

The first question I will not be able to answer in any satisfactory way, as so many established researchers have already tried and it is still discussed to date. On the one hand, it is clearly possible to integrate parts of the knowledge local indigenous people have by using scientific methods to objectify and quantify the experiences of local people. This process, however, reduces and distills the everyday experience of

local people to a set of data usable in scientific approaches. On the other hand, indigenous people testified and claimed variously at different places and times that their knowledge is doing – the everyday practice of being out on the land observing the environment. As a consequence, the integration of traditional knowledge will always be accompanied by a reduction and loss of experience that cannot be translated into standard scientific data. Nadasdy writes:

Because the standards of relevance by which traditional knowledge is distilled derive from the need for it to be ‘useful’ those aspects of local First Nation people’s experiences that might actually present an alternative to the official discourse are distilled out as useless or irrelevant. For this reason, traditional knowledge often reflects existing management policies and agendas more than local understandings. (Nadasdy 2005: 225)

To answer the second question, I first have to address the recent success story of co-management and then some theoretical aspects of bureaucracy presented by Max Weber in his 1946 essay on bureaucracy. I will discuss the effects and impacts of TEK-integration and co-management with the theoretical and empirical work of Paul Nadasdy, who did extensive fieldwork with First Nation people in the Yukon, Canada.

In the last two decades, co-management regimes for wildlife resources have been established in a lot of places throughout Northern Canada and Alaska, bringing indigenous people together with biologists and state bureaucrats in management boards and advisory councils. These developments have been generally assessed as a success story of empowering local peoples and communities to participate more meaningfully in the management of wildlife resources.

The proliferation of co-management policies and initiatives has been accompanied by a burgeoning literature, both academic and policy-oriented. Although some of this literature examines the phenomenon of co-management in general or theoretical terms, much of it consist of case studies that assess particular instances of co-management [...] Even a cursory perusal of this literature reveals a striking fact: virtually every co-management case study encountered in the literature is a success story. (Nadasdy 2003a: 367)

On the other hand, Nadasdy argues that these success stories often only seem successful on a superficial level. Although most case studies of co-management regimes or land claim negotiations do state that difficulties and obstacles in the cooperation between state officials and indigenous people exist, they tend to blame

'technical' difficulties and selfish behavior of particular members for the encountered problems instead of the structure and design of the management regime.

As a result, when bureaucrats (whether federal, provincial, territorial, or First Nations) encounter difficulties in their attempts to co-manage wildlife or negotiate/implement land claims agreements, they tend to put the blame on a lack of technical expertise and/or selfish political interests on the part of others. (Nadasdy 2005: 221)

On the contrary, in 'Hunters and Bureaucrats,' Nadasdy argues that many of the problems faced in negotiations and management practices are "inherent in the structure of those relations themselves and in the assumptions underlying land claims and co-management" (ibid.) and not in the individual capacities of members.

For this reason, I argue that the current restructuring of Aboriginal-state relations, which on the surface appears to be empowering to First Nations peoples, may in fact be having exactly the opposite effect. Although on the surface land claims and co-management seem to be giving Aboriginal peoples increased control over their lives and land, I argue that these processes may instead be acting as subtle extensions of empire, replacing local Aboriginal ways of talking, thinking, and acting with those specifically sanctioned by the state. (Nadasdy 2003b: 9)

However, Nadasdy does not argue that these "imperialist aspects" of co-management are always intentional or even conscious, but that they are inherent in the current structure and incompatible with beliefs, experiences and practices of indigenous peoples. Indigenous people who want to address problems with wildlife management or land claims are not able to do this on their own terms. For the interaction with federal, state or territorial government officials, indigenous people have to adapt to specific customs and adopt a way of talking and thinking that is often not compatible with their own beliefs and values. However, without accepting these procedures and the official language of management, their concerns will not be heard or accepted. These specific customs and ways of talking and thinking are rooted in bureaucracy and the 'objective rationality' associated with it. Max Weber analyzes and discusses the characteristics and specific features of bureaucracy in his 1946 essay on bureaucracy. Weber discusses bureaucracy and its structure extensively, so I will only point to small aspects of the whole discussion that are most relevant to wildlife management and for indigenous people's engagement:

Bureaucratization offers above all the optimum possibility for carrying through the principle of specializing administrative functions according to purely objective considerations. Individual performances are allocated to functionaries who have

specialized training and who by constant practice learn more and more. The 'objective' discharge of business primarily means a discharge of business according to calculable rules and 'without regard for persons.' (Weber 1946: 215)

Bureaucratization gives rise to 'expert knowledge' that replaces former authorities, like elders or chiefs, and leads to more specialization. Further, bureaucratization eliminates all emotional and irrational elements and feelings like love, hatred and anger from business and administration (ibid. 216).

The specific identities of co-management board members become irrelevant. So long as they abide by the established rules of procedure, the boards continue to function despite the regular turnover in membership. Such rules enable co-management boards to interface with existing offices and institutions of state management, and this is absolutely essential if they are to play their appointed roles. In this important sense, co-management boards are inherently bureaucratic entities. (Nadasdy 2005: 225)

The connection between bureaucratic forms of management and state power is also important to consider. The state only accepts an official language and concerns have to be rendered in a specific way to be accepted and heard. This leads to the development of bureaucratic structures by indigenous peoples themselves, drawing them into offices and away from the land and animals. This actually reverses the prospects that indigenous people are expecting from their involvement in the management processes:

By framing debates over land and animals in the Euro-North American languages of biology and property relations, these processes put most Kluane people at an automatic disadvantage when dealing with government biologists and lawyers. And by forcing Kluane people to bureaucratize their society and to spend their days in an office rather than out on the land, these processes serve to undermine the very social relations, practices, beliefs, and values that Kluane people hope to preserve through co-management and land claims in the first place. (Nadasdy 2003b: 263)

The power structure Nadasdy refers to is discussed by Eric Wolf (1990) as 'structural power' and is inherent in structures of the state dealing with the group's efforts to gain some control, whether over natural resources or political participation:

But the fact that Kluane people's concerns about land and animals must be dealt with in bureaucratic context at all is a function of what Wolf refers to as structural power. Given the realities of state power and the bureaucratic nature of government in Canada, it is difficult – even for the critical anthropologist – to imagine some alternate (and non-bureaucratic) way of giving Kluane people a role in the management of their own land and resources. (Nadasdy 2003b: 269)

The impact of 'structural power', however, goes even further than only rendering the practices and way of talking in bureaucratic forms. To be involved in co-management processes, indigenous people not only have to adapt to ways of talking and acting but also have to accept the underlying assumptions accompanying these bureaucratic, objective and scientific processes. Everything has to be rendered in rational and objective terms, altering thinking and beliefs as well as confidence in their own knowledge permanently:

By accepting and adapting to government's bureaucratic approach to aboriginal-state relations, First Nation people therefore also tacitly accept the assumptions about the nature of land and animals that underlie the rules and functions of that bureaucracy. Though First Nation people can and do voice their disagreements with these assumptions, very little comes of their protests because in the context of contemporary bureaucratic wildlife management and land claim negotiations, decisions/concessions simply *cannot* be based on anything other than Euro-North American assumptions about land and animals. When First Nation people make arguments based on their conception of animals as intelligent social and spiritual beings, they get nowhere because government biologists and resource managers, regardless of their own personal beliefs and understandings, simply cannot implement management decisions based on such alternate conceptions of animals. (Nadasdy 2005: 226)

The consequences of this discussion about the bureaucratic involvement of indigenous people in the management of wildlife are many and profound. Less time spent on the land engaged with observation and subsistence activities leads to a loss of knowledge and experience, while at the same time the assumptions and beliefs about nature and animals and the relationship between humans and the environment are constantly questioned and sometimes ridiculed by biologists and bureaucrats on management boards. The impacts of this loss of knowledge and experience can be seen in younger generations of hunters that often do not have the profound knowledge elders have about animals and the environment because of less and less time spent with subsistence activities. In connection with changed hunting techniques and new technologies incorporated into the subsistence practice like snow-mobiles, ATV, high-power rifles, etc., this loss of knowledge is further accelerated. With new technologies for transportation, the time spent on hunting activities is significantly reduced. The involvement in the cash economy and the need for wage labor also

further decreases the time available for subsistence. I will discuss the effects of infrastructure and cash economy on subsistence in the next section of the chapter. Another effect of the bureaucratization of indigenous communities is the fact that it questions the inherent assumption that co-management leads to an empowerment of local communities. Nasday argues that it actually has the reverse effect. Local communities are drawn more and more into the realm of state power, helping bureaucracy spread into rural communities and altering the way of life and beliefs that had existed in indigenous communities for centuries.

Despite the rhetoric about 'co-operation' and 'participation,' then, co-management does not represent as radical a break from centralized state management as is often supposed. Indeed, far from representing an *alternative* to bureaucratic state management, co-management processes have instead been inserted into that bureaucracy. This perspective sheds new light on claims about the empowering tendencies of co-management. Co-management, it seems, much like participatory development elsewhere in the world, has 'empowered' First Nation people to participate in existing processes of state management. First Nation people have simply been given their own 'slot' in the bureaucratic system. To participate, however, they have had to accept the rules and assumptions of the state management game. (Nadasdy 2005: 225)

However, in my view, this is not to say that co-management has only adverse effects for indigenous people. New methods and knowledge can support indigenous people and give them new opportunities to advocate for themselves. Knowledge (like TEK) is never static and unchangeable, but a flow of ideas and beliefs. People incorporate new ideas and methods that they find useful and reject former ideas no longer useful, and indigenous people are no exemption – nor should they be. It is, however, important to take into account the various effects and changes that a co-management structure can initiate among a community as well as the inherent power-structures of co-management regimes and their bureaucratic forms. I cannot absolutely say whether co-management is a success story, like most argue, or a failure, like some argue, but a critical examination of co-management regimes has to take into account the mentioned problematic aspects and discuss the situation in greater detail and in a more nuanced way than just accepting the assumed properties of empowerment or rejecting them completely. After all, co-management is currently the only way indigenous people can express their views and become a partner in the management of wildlife resources, but if co-management only turns

them into Native bureaucrats who work and think in the same way as their Euro-North American counterparts, then the outlook of new co-management regimes is not very promising. On the other hand, co-management also includes the hope that a new synthesis of different paradigms and knowledge and the building up of new structures lead to a more equal partnership and positive developments in indigenous communities.

For more critical evaluations and analyses of TEK-Politics, obstacles to knowledge integration and the impacts on indigenous people by bureaucratization, see for example Paul Nadasdy (1999, 2003a, 2003b, 2005), Elisabeth Padilla and Gary P. Kofinas (2014) and Kofinas (2005).

In the last section of this chapter I will trace the connections between subsistence activities and infrastructure, focusing on material aspects of subsistence hunting and fishing in connection with the cash economy, highlighting relevant aspects for the case study of the Community Subsistence Hunt in the Copper River Basin.

3.4 Subsistence, infrastructure and ‘techno-economic differentiation’

The link between subsistence and cash economy in the rural communities of Alaska is an established fact. Various studies and research show that contemporary subsistence economies are crucially connected and intertwined with the industrial world and wage labor (see Chapter 5 this thesis).

“Today, very few of Alaska’s hunter-gatherers have experienced hunting, fishing, or gathering by any means other than the use of motorboats, snowmobiles, ATV’s, automobiles and aircraft” (Van Lanen 2017: 257). The introduction of transportation technologies and modern hunting equipment has altered the traditional subsistence economies since the beginning of the 20th century and most rural communities have adopted these new technologies for hunting, fishing and gathering. The fact that these technologies require a regular cash income to purchase and maintain them has linked subsistence tightly to incomes from wage labor or other means. Today the energy input and technologies coming from outside the communities actually enable the subsistence economies to continue:

The adoption of motorised mobility is an adaptive response to the conditions and opportunities presented to hunter-gatherers through interaction with the world-system. It is not only a sensible and physically efficient means to harvest wild resources, more importantly, since settlement this adaption has largely enabled a hunting, fishing and gathering mode of subsistence to continue. Accordingly, the equipment and energy-

inputs required for subsistence mobility are critical components in the infrastructural capital of modern circumpolar hunter-gatherer communities. (ibid.)

Due to extensive research in rural communities over the past 50 years, another characteristic of contemporary Alaskan subsistence economies was discovered. This is the link between higher cash income and higher productivity of wild food resources. Wolfe et al. (2010) have analyzed rural communities all over Alaska and found a positive correlation between subsistence productivity and household incomes:

For Alaska Native households in rural communities there was a positive correlation between subsistence productivity (measured by a household's rank in the community) and a household's earned monetary income ($r = .213$, sig. 0.01). Increased household income was associated with increased subsistence productivity by households within a community." (Wolfe et al. 2010: 20)

Recently, in an analysis of rural communities all over Alaska, Magdanz et al. (2016) came to the conclusion that household harvest levels increase by 14% with every 10% increase in household income. This is an important and interesting fact because it was often assumed that people who are successful in the wage labor sector rather tend to drop out of subsistence altogether or just pursue it on minimal basis. In fact, the cash income on the household level is even more important. In a 2010 report for the National Science Foundation termed "The 'Super-Household' in Alaska Native Subsistence Economies," Wolfe et al. analyzed households of rural communities all over Alaska and found out that about 70% of wild food resources are harvested only by 30% of the households.

Subsistence production of Native households appears to exhibit a common pattern across rural communities in Alaska: most wild foods consumed within a community were produced by a subset of community households. This analysis confirms that wild food production was concentrated in a relatively small set of households within rural communities. In general, the high-third of households produced 75% or more of the wild foods consumed in a community. The analysis also confirms that wild foods flowed out from high-producing households to other households in the community. In the wild food distribution system, households with special needs commonly were recipients, including elders and single mothers with young children. In short, a small set of high-producing households (so called super-households) produced wild foods in excess of their own household requirements to feed others in the community. The concentration of subsistence production was found to occur in communities across all

geographic and cultural areas. It was a general feature of subsistence economies in Alaska Native villages during the late 20th century. (Wolfe et al. 2010: 27)

These 'super-households' are often also the most successful in wage labor and have higher household incomes that provide them with the means to be so highly productive in subsistence harvests. The presence of the 'super-household' poses questions on contemporary subsistence hunting management regimes with their focus on individual allocation of harvest tickets and bag limits, but I will not explore this question here.

I will instead focus on a different aspect of these 'super-households' and the link between cash income and productivity in subsistence activities.

The relationship between subsistence and new technologies was termed 'techno-economic differentiation' in 1973 (1987) by Pertti Pelto in a study of the introduction of snowmobiles in Lapland, Finland in connection with subsistence practices.

What I want to focus on in using this slightly awkward but expressive terminology is that, for any socio-physical environment, adaptation is effected by means of material things—technological inventories—which are the items of equipment that each individual or household must own or have access to in order to accomplish their food-getting and other subsistence activities. The ownership and utilization of these technological items is closely intertwined with the less material aspects of economic systems—the occupations, the cash reserves, the distributive connections—in terms of which some families and individuals (and other units) are relatively successful in fulfilling their material needs while others experience varying degrees of deprivation. (Pelto 1987: 169)

'Techno-economic differentiation' refers to the link of cash income and new technologies for transportation or hunting. Only community members and households who are successful in the cash economy can afford the necessary technologies to maintain productive subsistence harvests. The existence of technological and economic differentiation leads, on the one hand, to the specialization of certain households on specific productive resources for which they have the means to successfully harvest them. On the other, it leads to the dependence of less economically enabled community members and households on store-bought food, and even leads to the complete dropout of subsistence activities of those who cannot obtain sufficient cash income to afford the necessary technologies for transportation and equipment.

Pelto noted that specialisation led to an evolving dependency on those who have machines by those without them, and he observed that people who could not afford motorised mobility ended up increasingly dependent on store-bought foods and even tended to drop out of subsistence practices altogether. (Van Lanen 2017: 267)

Economic and technological differentiation not only influences the community level but also can be felt on a regional level between urban subsistence users and rural subsistence users, and the growing competition from urban subsistence users in some rural places is a common topic in contemporary subsistence management decisions in Alaska and is an important part of this thesis.

This growing competition is linked to infrastructure, especially transport infrastructure, and the influence of infrastructure on subsistence economies is often overseen in subsistence research and has received little attention. In the case study I present in this thesis, road-connection and the growing competition between urban and rural subsistence hunters is a dominating theme brought up by Native and other rural residents during Alaska Board of Game sessions.

This process [the growing competition] has been escalating ever since the 1970s oil boom when population growth resulted in large-scale intensification of demand for hunting opportunities in many areas of the state and non-local hunters became a great concern for rural indigenous peoples. Complaints about the impacts of non-local hunters are consistent topics of discussion in interviews with rural hunters. Meanwhile, urban hunters view any obstruction of their own hunting rights as discrimination. (Van Lanen 2017: 271)

The influence of road-connection to subsistence productivity, though, was already mentioned by Wolfe and Walker in 1987:

The presence of roads is significantly associated with reduced subsistence productivity. Harvests of communities along the road network or marine highway system are 69% less than harvests by communities off the road network. (Wolfe/Walker 1987: 66)

The competition of urban hunters in rural areas is not only felt quantitatively in bigger numbers of hunters in the field, but also qualitatively. Most urban hunters have higher individual incomes and therefore can spend more money on equipment, fuel and motorized transport vehicles like ATVs, motorboats and aircraft. Furthermore, most urban subsistence users do not rely on wild food resources for their diet. Apart from higher incomes in urban areas, the cost of living is also significantly lower in urban areas than in rural areas; this includes costs for fuel, heating oil, electricity, etc.

“Rural incomes are generally 35% less than urban ones, and the costs of living in remote areas can be two to three times higher than those in urban regions” (Van Lanen 2017: 264).

The competition over resources with urban hunters diminishes the productivity of rural subsistence economies substantially, as Wolfe and Walker (1987) show. They detect two sources of impact that have historically influenced the productivity of rural subsistence economies, road-connection and settlement from non-Natives along the roads in rural areas:

Settling roaded areas appears to diminish the subsistence productivity of an area over time. The communities with the lowest subsistence harvests in the 1980s occur along the roaded, settled areas surrounding Anchorage and Fairbanks. These areas were the historic territories of Ahtna, Dena’ina, and Upper Tanana groups. In recent decades roads into these areas have triggered several developments. Roads have increased competition for wild resources between rural and urban residents. Urban-based hunters and fishers utilize roads for access to rural areas for fishing and hunting, directly competing with rural communities and lowering their subsistence harvests. (Wolfe/Walker 1987: 69)

For these reasons, rural hunters living in road-accessible areas are facing far more challenging conditions than those living off the road system. Finding themselves in competition with urban residents, subsistence harvests by rural residents with connection to the road system are consistently lower when compared to non-road system communities. “Magdanz et al (2016) reported that mean harvests per capita in communities on the road-system are 59% less than mean harvests per capita in communities off the road-system” (Van Lanen 2017: 271).

Cognisant of these far-reaching concerns, inequalities resulting from increasing techno-economic differentiation generate particular vulnerabilities for low-income community members in the here and now. This problem exists increasingly in the present for road-system hunter-gatherers. If the wealthiest hunters continue to outpace the poorer ones, the latter can likely expect further increasing competition and lower harvest success rates. (Van Lanen 2017: 277)

This is exactly the case in the present case study of the Community Subsistence Hunt in the Copper River Basin. Ahtna people and other rural residents are on the forefront of the conflict between urban and rural subsistence users, and they can feel the impacts consistently in their daily activities. The interaction of infrastructure (roads), economic conditions (subsistence productivity and cash income) and

technological input from outside the communities (vehicles, equipment, fuel) is an important perspective on subsistence practices that has received less attention in recent research. Subsistence can, of course, be analyzed from various perspectives, but ignoring material aspects and factors will not yield a promising outcome. The present thesis puts its focus on this interaction of material aspects of subsistence and the impacts of developments experienced by rural Native and non-Native subsistence users. As higher competition leads to lower harvest numbers, these developments, in combination with lower cash incomes in rural regions, can have severe effects on the food security of rural residents. Furthermore, the loss of valued resources, social and cultural capital as well as increased dependence on welfare payments are accompanying effects.

With this I end the theoretical discussion of the underlying and applied theoretical concepts of this thesis, having shed some more light on sometimes overlooked aspects of subsistence, infrastructure, economic condition and co-management.

In the next chapter I chronologically trace some of the important events in connection with subsistence in Alaska from pre-state times to present day.

4. Historical events in Alaska (pre-state to the present)

The aim of this chapter is to give an overview of Alaskan history (pre-state, colonial, territory, after statehood), highlighting the most important events and legislative developments relating to wildlife management and hunting regulation that have influenced the current situation in the Copper River Basin and the Ahtna people.

4.1 Pre-state Alaska

The first people moving to the lands today known as the continent of North America were probably small bands of hunters & gatherers coming over the Bering Land Bridge some 10,000-15,000 years ago. Some of these people settled in Alaska and others moved further south. This is the most widely accepted theory in anthropology and archaeology today, although discussions about the exact dates and ways of movement still accompany other hypotheses of how North & South America have been populated (Langdon 2014: 8ff). I will not concern myself with the discussion of these hypotheses over the settlement of the American continents, as it would go beyond the scope of this thesis.

As for the Copper River Basin, the traditional territory of the Ahtna people, the archeological records indicate that the first people already moved into the Basin for hunting 8,000 years ago. A continuous human presence has been established for at least the last 1,000 years, although it probably goes back even earlier. The exact time when the Ahtna appeared as a distinct group is not yet determined (National Park Service 2014).

The first Europeans arriving at the Alaskan coast were on a 1741 expedition led by Vitus Bering on behalf of the Russian Czar Peter the Great (Vinkovetsky 2011: 8). The American continent at that time had already witnessed colonization movements by the Spanish and Portuguese (in Meso- and South-America) as well as by the British, French and Dutch (on the Atlantic coast of North America) for more than two centuries. In this regard, the Russian colonization of the Aleuts islands and parts of the Alaskan coast came quite late. The quest for fur animals was the driving force for the exploration of these parts of the world (then starting to be known as Russian America), in contrast to other colonizing movements like the Spanish search of gold or the British search of land to populate (ibid. 53ff.). The fur trade at that time constituted a major force in economy and an important source of revenue. In this regard, the Aleuts and the Alaskan mainland proved to be a lucky find for the

Russian Empire as the stocks of fur animals appeared seemingly endless. The Russian American Company (RAC) established trade outposts on the Aleutian Islands as well as on the coast and on mainland Alaska to trade furs for European goods with the Native population. They only established minor administrative structures compared to subsequent colonial and state bureaucracies. They did not concern themselves with administrating the Native population apart from the fur trade. Instead of bringing in lots of Russians to Alaska, they focused on creating a creole population (the offspring of Russian men and Native women) to administer the colony (ibid. 95ff.). The Russian Orthodox Church did send missionaries to establish orthodox communities and parts of the Native population accepted the new religion, or they incorporated parts of the Orthodox beliefs into their own religious framework. Some of these Orthodox communities still exist today (for example on the Seward Peninsula).

After around a century of intensive hunting, the fur animal stocks started to decline. Therefore, the Russian Empire was economically not able to keep the colony or did not see any further economic advantage in keeping it. According to Ilya Vinkovetsky, it was also a strategic decision as the overseas colony was difficult to protect and defend against foreign aggression (ibid. 181ff.). In 1867 the Russian Empire sold their territories in North America to the United States for 7.2 million US-dollars¹ (ibid. 3). Considering the natural richness later discovered by the Americans, it was a rather small amount of money invested, but the decision to buy the territory was controversial in the United States at the time. The land was given the name Alaska, an Aleutian word meaning “the land toward which the action of the sea is directed.”

This bargain proved to be a lucky venture for the quite young United States who just had gone through years of civil war. Soon after the purchase, the first gold deposits in the rivers of Alaska were discovered, leading to the Klondike Gold Rush in the years following 1896 and bringing in a quantity of people not seen before in these parts of the world. The new territory was designated as the Department of Alaska, administered variously by different military and federal institutions until becoming the District of Alaska in 1884. In 1912 Alaska was transformed into an incorporated and organized territory, with a local government and some form of autonomy. The possibilities for legislation though were highly circumscribed by the congress and federal decisions. In the following decades more and more decisive power was transferred from the federal government to

¹ For further reading on the Russian episode as well as the American one, see, for example, “Russian America” by Vinkovetsky from 2011 and Stephen Haycox’s “Alaska: An American Colony” from 2002.

the territorial government and on January 3rd, 1959 statehood took effect.² (McBeath and Morehouse 1994: 38ff.)

4.2 Becoming a state

The granting right to become a state in the Union was gladly received by the Alaskan population (or at least by the majority of the white settler population). The feeling of being governed by outside forces like a colony (which Alaska was in fact until becoming its own state) and the flowing of revenue generated in Alaska to outsiders, which prevailed for the first decades of the 20th century, led to the movement for state formation. The new rights for legislation and the transfer of land (around 100 million acres) to the new state government as well as the new constitution enabled the state government to reverse the effects of loss of revenues and profits to outsiders of the state. The new written constitution reflects these experiences and grants all residents of the state the exclusive benefits of the natural resources and riches Alaska has to offer.

Statehood did more than convey land and resources to Alaska's people. It gave them the government institutions and legal tools they needed to capture and redistribute benefits from resource exploitation. In territorial days, outsiders, or non-Alaskans, received most of the benefits, including jobs, incomes, and profits. Reacting largely to this colonial experience, the writers of the Alaska Constitution drafted a natural resources article proclaiming that the new state's goals were to settle land and develop resources for the maximum benefit of residents. (McBeath/Morehouse 1994: 79)

The Alaska Constitution, written at a 1955-56 convention prior to the formation of the State, gave the Alaskans the means for self-government and is widely regarded as a model constitution, as McBeath and Morehouse write:

From its inception, Alaska's constitution has been widely regarded as a model for state constitutional reformers. It created a unified and streamlined state government, included a strong declaration of rights, and set forth a simple set of progressive guidelines for government operations and resource development. (1994: 116)

The Alaska constitution is also one of the pieces of the puzzle I am concerned with in this thesis about the conflict over natural resources for subsistence. It declares that

² This very reduced summary of the pre-state history is missing crucial parts of the impacts on the land and people. It also leaves aside the many positive or disruptive experiences the Native population had during the colonial period, as well as the experiences of the settler population that also became native to the country.

all residents should have equal access to subsistence resources and leaves no option for differentiation between rural and urban or Native and non-Native users.

The federal presence in Alaska after statehood, though, remained strong and was very soon widely noticed following the Prudhoe Bay oil discoveries. In the wake of this discovery, first the existing land claims of Alaska Natives, who have a 'special trust relationship' with the federal government concerning their welfare, had to be settled. In order to start the construction of the Trans-Alaska Pipeline from Deadhorse in the North to Valdez in the South, the open land claims with the Alaskan Native communities had to be settled and the Alaska Native Claim Settlement Act (ANCSA) came into planning considerations³.

Before the discovery of oil, the state had already begun to select lands in the fulfillment of its land entitlement under the Alaska Statehood Act. These proceedings drew the attention of Natives who started protesting against the State selection and called for a congressional settlement of the land claims. In 1966 Secretary of the Interior Stewart Udall stopped the selection of land by the state and introduced a 'land freeze.' This provided the incentive for the congressional settlement of land claims in Alaska and ANCSA, a major federal legislation act, was implemented by Congress. It included a different and quite experimental approach to land settlement compared to what had been done with other Native American land claim settlements.

The Alaska Native Claims Settlement Act (ANCSA), enacted in 1971, was an experiment in resolving aboriginal title without resort to tribes, reservations, and litigation. Instead, Congress created 13 for-profit regional corporations and 225 for-profit village corporations, and conveyed to them some 40 million acres of land, and \$962.5 million. (Linxwiler 2007: 2f.)

In some respects [...] [ANCSA, comment by author] [...] was an Alaska Native treaty with the U.S. government. Like traditional Indian treaties, in return for grants of limited, designated lands and other benefits to Natives, ANCSA extinguished aboriginal title to much more extensive lands traditionally used and occupied by them. In other respects, ANCSA clearly is not like a traditional treaty. Congress deliberately wrote the act to exclude the traditional features of treaties: reservations and BIA [Bureau of Indian Affairs] trust responsibility for the land and monetary benefits of the settlement. (McBeath/Morehouse 1994: 109)

³ Compared with the experiences of the Indian tribes in the Lower 48 states, who have been conquered and forced off their land onto reservations as well as subjected to oppressive treaties, the Alaska Natives did not experience comparable disruptions until that time. They were, for the most part, left alone because Americans did not regard their lands and resources to be worth taking – at least until the discovery of the Prudhoe Bay oil fields.

The intent of the new approach was that, through the capitalistic design and monetary benefits of the successful corporations, Alaska Natives would reach a higher living standard and adjust to the lifestyles of the American population and, sooner or later, drop their traditional ways of life.

Excursion: Federal Indian Policy

The Federal Indian policy towards Native Americans in general and Alaska Natives in particular is shaped by different approaches, which are characterized by ever-changing laws, policies and attitudes by the federal government. In the early stages of U.S. rule, the government recognized many tribes as politically independent nations and authorities dealt with them 'government-to-government.' This was partly due to the physical power of many tribes to resist invading settlers and partly to early American legal doctrine.

At the foundation of American Indian law lies the Marshall trilogy. Chief Justice John Marshall wrote three decisions for the U.S. Supreme Court in the 1820s and 1830s which established the principles of aboriginal land title, federal trust responsibility, and inherent governmental powers of Indian tribes. These rulings continue to shape American Indian law and policy today. (McBeath/Morehouse 1994: 98)

At the end of the nineteenth-century all tribes were virtually conquered and driven onto ever-smaller reservation lands, and the 'government-to-government' relationship turned to one of a superior power attending to dependent and defeated subjects.

The combined ideologies of capitalism, Christianity, racial and cultural superiority, and manifest destiny provided justifications for the guile and the force used to suppress and often destroy the Indian tribes. (ibid. 100)

As no more physical force was needed to defeat and control the Indian tribes, assimilation policy replaced the physical force, and the Bureau of Indian Affairs introduced boarding schools as the main assimilative institution. Only in 1924 with the Indian Citizenship Act were the American Natives (including the Alaska Natives) granted United States citizenship. After World War II another direction of federal Indian policy was pursued.

In 1953, those in Congress who opposed the reservation system, the trust relationship, and special status for Indians argued that Indians should be 'freed' from all federal supports and controls. This faction won passage of House Concurrent Resolution 108, which called for an end to the trust relationship and the 'termination' of tribes. (ibid. 102)

In the 1960s and 70s another approach towards Indian policy was adopted: 'self-determination.' This era of policy emphasized powers of tribal self-government.

The current policy of self-determination says that tribes are to some extent sovereign as well as dependent. It says that all Native Americans, including Alaska Natives, are equal citizens under the law and, at the same time, that they are a distinct group of Americans with special political status under a unique set of laws. (ibid. 103)

These two statuses, however, are in tension with each other and continue to evoke sharp legal and political conflicts, as we can see in Alaska today with the struggle over subsistence resources and lands (for more information see McBeath/Morehouse 1994: 97pp).

However, ANCSA and the economic success of the regional and village corporations proved to be limited, and only a few managed to pay off cumulative dividends totaling more than a few thousand dollars to their shareholders between 1974 and 1990 (ibid. 111). This was partially due to the differing opportunities of corporations to select land that was economically developable. The Arctic Slope Regional Corp., for example, had the fortune of picking lands that contained oil deposits and were able to employ a lot of their shareholders in businesses providing services to the oil industry. "The many problems confronting the corporations include delays in land and resource conveyances, lack of economic development opportunities in rural Alaska, and financial and managerial deficiencies" (ibid. 110). For example, the conveyance of the selected ANCSA lands had still not been completed in the year 2017.

For a majority of the Alaska Native population the promises of ANCSA did not deliver economic success and did not make a difference in their living standards. McBeath and Morehouse conclude as follows:

Overall, despite its early promise, the Alaska Native Claims Settlement Act has done little to ameliorate Native social and economic problems. It has also had ambivalent political effects. ANCSA is an equivocal product of overlapping termination and self-determination eras of federal Indian policy. It speaks the language of self-determination, but it does so with a distinct accent of termination and assimilation. (ibid. 112)⁴

⁴ For a critical and detailed examination of the implications of ANCSA for South-East Alaska see Kirk Dombrowski's book "Culture Politics" (2014), as well as Hirschfield (1992) and Walsh (1985) for a more general legal review of ANCSA and a more critical article by Thornburg and Roberts (2012) "'Incorporating' American Colonialism: Accounting and the Alaska Native Claims Settlement Act".

One of the main aspects of ANCSA concerning the subsistence hunting and fishing rights was the fact that, with the enactment of ANCSA and the creation of regional and village corporations, all aboriginal hunting and fishing rights that formerly had been implicitly recognized were now extinguished.

Although a seemingly minor provision of this massive social engineering legislation, both the federal and state governments considered the forfeit of these aboriginal rights necessary for industrial development of oil and other natural resources in the state to continue unimpeded. (Thornton 2001: 84)

The objections of Alaska Natives concerning the extinguishment of their aboriginal hunting and fishing rights were not formally recognized and they were not able to vote on ANCSA. They were left only with a promise of protection by Congress:

In exchange for surrendering aboriginal hunting and fishing rights, Alaska Natives initially received only a vague promise of protection from the US Congress, which called on 'both the Secretary (of the Interior) and the State (of Alaska) to take any action necessary to protect the subsistence needs of Natives. (ibid. 85)

Left with this promise, the situation for Alaska Natives concerning their subsistence rights remained uncertain. Unlike today, however, the competition and pressure on subsistence activities were rather marginal. The state, as it was in charge of the management of regulations for hunting and fishing on all lands, enacted a state subsistence law in 1978. The State Subsistence Law did give priority to subsistence uses over other consumptive uses like recreational hunting, but it had some major deficiencies concerned with the securing of Native subsistence rights: "The first state law [...] gave priority to subsistence uses of wild, renewable resources over other consumptive uses (such as recreational hunting and commercial fishing) but failed to define 'users'" (Thornton 1998: 29).

Without the definition of who was a 'user' for subsistence activities, the law failed to protect Alaska Natives' subsistence as all Alaskan residents have access to fish and wildlife resources in the state, according to the constitution. The State Subsistence Law did define some regions as non-subsistence areas, where no subsistence hunting or fishing and only recreational and sport fishing and hunting are allowed. These areas are the major urban regions of Anchorage, Fairbanks, Juneau, Ketchikan and Valdez. In all these areas the subsistence priority does not apply, but all residents of these areas (the major urban areas with the majority of the Alaskan population) are allowed to hunt in other parts of the state for subsistence uses. It also did not implement a Native or rural preference for subsistence uses in times of

scarce resources, but only a priority for subsistence uses in general over other consumptive uses.

In 1980 the federal government did not see the Native subsistence needs met by the new State Subsistence Law and provided its own subsistence priority in the Alaska National Interest Lands Conservation Act (ANILCA). This established national parks and wildlife refuges throughout Alaska. Title VIII of this major legislation is concerned with subsistence uses. ANILCA also gave priority to subsistence uses over other consumptive uses like commercial fishing and linked the subsistence use with a rural preference.

The federal law (Title VIII of the Alaska National Interest Lands Conservation Act, or ANILCA), passed in 1980, also mandated a subsistence priority, but in addition, defined an allocation preference for rural Alaskan in times of scarcity. This did not mean that urban residents did not need or could not obtain wild resources, but merely that rural resident's needs would be met first if there were shortages. (ibid.)

This rural preference was a political compromise. On the one hand it protected Native subsistence, and, on the other hand, it did not discriminate non-Native residents with an ethnicity-based preference as has been done before in Alaska (for example in the Marine Mammal Protection Act of 1972). However, powerful interest groups inside the state (mainly urban hunters and fishers) saw the rural preference as unconstitutional and fought for an amendment of state law. In 1986 the State Subsistence Law also added a rural preference for subsistence uses in times of shortages, as it would otherwise have lost control of the management of regulations on federal lands.

It is interesting that neither the subsistence law nor ANILCA tried to define subsistence but only 'subsistence uses':

These [subsistence uses] are 'the customary and traditional uses by rural Alaska residents of wild, renewable resources for direct personal or family consumption' (Sec. 803). Yet the law does recognize a qualitative difference between Native and non-Native subsistence, wherein 'the continuation of the opportunity for subsistence uses by rural residents of Alaska, including both Natives and non-Natives...is essential to Native physical, economic, traditional, and cultural existence' but only 'to non-Native physical, economic, traditional, and social existence' (Sec. 801). (Thornton 2001: 85)

In the State Subsistence law 'subsistence uses' is defined as follows:

(7) 'customary and traditional' means the noncommercial, long-term, and consistent taking of, use of, and reliance upon fish or game in a specific area and the use patterns of that fish or game that have been established over a reasonable period of time taking into consideration the availability of the fish or game (AS 16.05.940.)

(33) 'subsistence uses' means the noncommercial, customary and traditional uses of wild, renewable resources by a resident domiciled in a rural area of the state for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation, for the making and selling of handicraft articles out of nonedible by-products of fish and wildlife resources taken [...]. (AS 16.05.940.)

Remarkable in the description of subsistence uses in ANILCA is the distinction between 'social' existence for non-Natives and 'cultural' existence for Natives. This leads to the assumption that subsistence practices are fundamental to the cultural survival of Alaska Natives, which is also recognized by Congress but is not further specified.

Concerning the state law, the Alaska Supreme Court in its 1989 McDowell decision soon declared the rural preference unconstitutional as an equal access to wildlife resources should be available to all state residents. McDowell's lawsuit against the rural preference was successful and left the state with no possibility of distinguishing subsistence users from other groups of users. "When the state's rural preference was declared unconstitutional, a crisis ensued, as all state residents became de facto subsistence users" (Thornton 2001: 86). Due to this court decision, the federal government took over management authority on federal lands (almost 60 percent of Alaska), which led to the dual-management system we encounter today and which will be presented in the next chapter.

The state's failure to achieve a rural preference put it out of compliance with the federal subsistence law and set the stage for a federal takeover of subsistence hunting and fishing in Alaska. In 1990, a dual management structure commenced with the federal government regulating subsistence on federal lands (60% of the state) and the state retaining authority over state (30%) and private (10%) lands. (Thornton 1998: 30)

4.3 To the present

Until today, the state has not been able to come back in compliance with ANILCA through the amendment of a rural preference in the State Constitution. This

amendment continues to be fought against by interest groups representing non-Native urban hunters and fishers and is eagerly anticipated by Native and rural subsistence users.

This led to the situation that two different systems, a state and a federal management board, have managed subsistence since 1990, creating a complicated and complex patchwork of regulations and regimes. The state manages subsistence through two boards, the Alaska Board of Fisheries and the Board of Game. These decide on regulations, seasons and other issues concerning subsistence use. The Alaska Department of Fish and Game, with several subdivisions, is responsible for data collection on wildlife and fish populations, harvests, human subsistence uses and environmental effects. Federal management is executed by the Federal Subsistence Board, which consists of the regional directors of the U.S. Fish and Wildlife Service, the National Park Service, the Bureau of Land Management, the Bureau of Indian Affairs, the U.S. Forest Service as well as three public members appointed by the Secretaries of the Interior and Agriculture. Two members of the public represent rural subsistence users.

These have been the major events concerning subsistence in the State of Alaska during the second half of the 20th century. The next chapter deals with important concepts inherent to the development of the wildlife management system currently in place. On the one hand I will trace some historical and theoretical aspects concerned with wildlife management and, on the other, show the distinctive feature of the mixed-economy characterizing Alaska's rural areas. Before moving on, I need to highlight one additional trend regarding subsistence and the conflict over natural resources that must be taken into account. Alaska has witnessed a major population increase in the last decades, especially in its main urban centers. The graph (Figure 1), provided by the Alaska Department of Labor and Workforce Development, shows this trend explicitly.

Alaska Population, 1946-2017

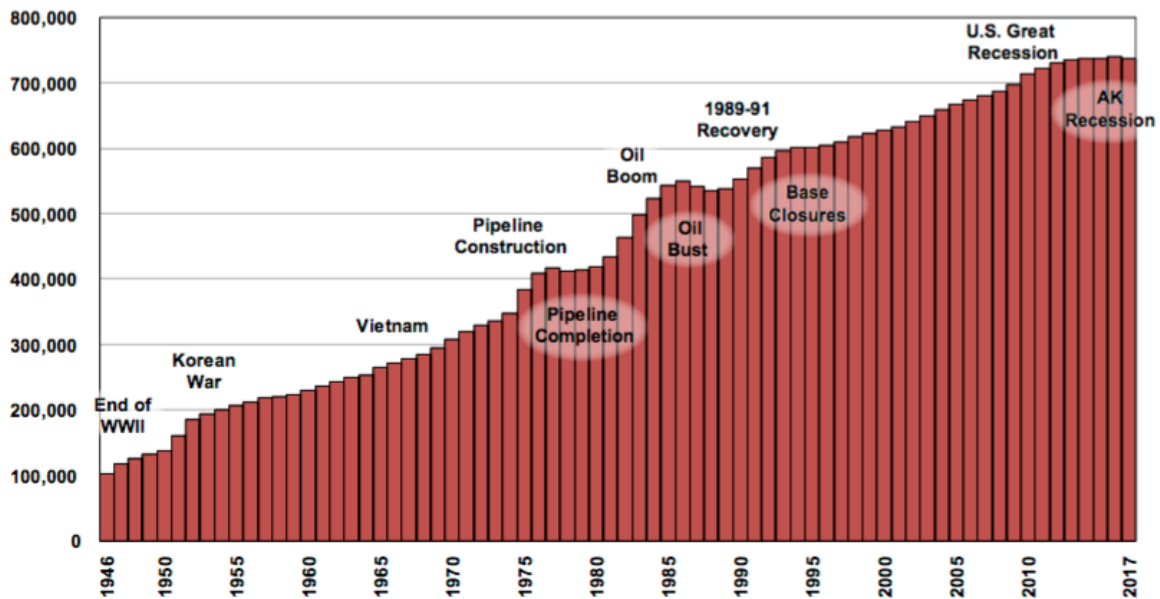


Figure 1. Alaska Population 1946-2017, Alaska Department of Labor and Workforce Development 2017b

In the 1950s the overall population of Alaska was around 100,000 inhabitants, in 1990 it was already around 600,000, and today the figure is above 700,000. This is a major population increase, although Alaska remains the least densely populated state in the U.S. with an average population per square mile of 1.2 (US Census Bureau 2018). However, almost two thirds of the population (around 400,000 people) live in the Anchorage metropolitan area, which includes the Matanuska-Susitna Borough. Population growth per se does not necessarily lead to negative consequences for the Native population and its subsistence uses, but in Alaska hunting and fishing are widely appreciated and loved by almost all residents – even the ones that recently arrived. The densely populated areas then, of course, increase the pressure for subsistence uses in the surrounding regions like the Copper River Basin, home to the Ahtna villages.

5. The management of wildlife and the mixed economies in rural Alaska

This chapter is divided into four different parts. The first part deals with the historical and theoretical aspects of wildlife management as it developed over the course of the last centuries. The second part presents the dual-management system in Alaska with the state and federal actors involved. The third part presents a distinct feature of rural Alaska: the mixed-economy structure. The fourth part deals with aspects of indigenous knowledge.

5.1 The development of wildlife management

Wildlife management draws from the desire to control wildlife and make it usable for human purposes. Henry P. Huntington provides a general definition:

Wildlife management is the science and practice of controlling wild animals and wild animal populations for human purposes. Such purposes include, among others, enhancing numbers of trophy-sized animals in big game species, allowing populations to fluctuate without interference to preserve aesthetic values of wilderness, maintaining animal populations to provide large sustained yields, and protecting endangered species from extinction. Combinations of these goals and the many other potential goals of wildlife managers give a wide range of possible management initiatives. (Huntington 1992: 6)

As Huntington mentions, wildlife management can have a wide range of objectives. However, the focus of wildlife management and the definition of its main goals are restricted to the respective (political) system. "Determining the goals of wildlife management for a particular area is a political concern, reflecting the influence of various groups in persuading the management agency or agencies to give priority to one goal over another" (ibid. 7). It is a contest between different interest groups who compete for resources and access as well as the protection of wildlife.

Codified systems of game laws and of wildlife management were introduced to Alaska in the early 1900s by Americans of European descent. While new to Alaska, such regulations extended back nearly a thousand years in England. To understand the nature and extent of the conflict between Native wildlife use and western management, a review of the origins and purposes of game laws is important. (ibid. 17)

In England, hunting was rigorously restricted and only open to the aristocracy since the Norman Conquest in 1066. The illegal taking of wild game was punished very

harshly and game laws were supposed to protect the habitat and therefore the pleasure of the aristocracy by providing them with stable game populations.

In the 'New World' of America, the first settlers saw an abundance of natural resources. "Without the system of aristocratic privilege that characterized English society in general and hunting in particular, the immigrants considered wild animals to be free for anyone to take as they needed" (ibid. 20). There was no need for conservation of animals, and habitat and uncultivated land was regarded as an opportunity for cultivation and settling. The idea of restricting hunting and other uses of wildlife evolved later, when the land became more and more populated.

The idea of protecting wild lands came much later, originating on the heavily settled East Coast where such areas had become scarce. But protection of lands did not mean protection of game for the purpose of hunting. Unlike the forest in England, the National Park in the U.S. was for public, non-consumptive enjoyment. (ibid. 20f.)

It was not before the near extinction of specific species like the buffalo that rethinking the situation of wildlife in the U.S. started.

Two late-nineteenth century developments played a major role in protecting animal stocks. First, the establishment of state and national parks, left in a primitive condition for the enjoyment and edification of the American people, introduced a wilderness ethic to American society (Nash, 1982), and protected the habitat of wild animals. Second, the creation of state wildlife laws generated revenues from licenses and empowered game wardens to enforce those laws. (ibid. 22)

When a hunting license system was introduced, a group of elite sport hunters developed that was able to take advantage of the new system. The game laws were designed to favor these hunters who benefited from these conservation measures.

The question of who has access to wildlife still had not been resolved and "the idea of equal access has long been a key aspect of state wildlife laws" (ibid.).

Since the first game laws were introduced in the U.S., the conflicts of interest between recreational sport hunters and Native subsistence hunters has emerged and still prevails today. State governments support 'equal access' to hunting and thus undermine the ability for Natives to hunt and fish for their own consumption. Resources are sometimes scarce and not available for all, and licenses are expensive.

The federal government has tried to make substantial provisions for traditional Native harvests through treaties and legislation but, as mentioned above, federal laws only apply to federal lands. Regarding the difference of English and American game laws,

Huntington concludes:

The most significant difference between English and American game laws is the idea of equal access for all hunters, rather than access limited to the wealthy and powerful. To the extent that a subsistence priority creates a new privileged class of users, it runs counter to the egalitarian basis of American game laws. To the extent that regulation of subsistence must accommodate traditional practices and patterns of use that are often outside the customary regulatory framework, it requires substantial adaption of management practices. (ibid. 31)

The ideal of equal access, as mentioned before, is also written into the Alaska State Constitution of 1959 (written in 1956). This is apparent in paragraph 3 of the Article VIII 'Natural Resources': "Wherever occurring in their natural state, fish, wildlife, and waters are reserved to the people for common use" (Alaska Constitution 1959).

Paragraph four of the same article also provides the objective for the management of natural resources, referring not only to wildlife resources, of course, but to mineral resources as well: "Fish, forests, wildlife, grasslands, and all other replenishable resources belonging to the State shall be utilized, developed, and maintained on the sustained yield principle, subject to preferences among beneficial uses" (ibid.). I will return to the sustained yield principle in the next section, as I consider it important in the discussion of management of wildlife resources. The idea of equal access in the constitution declares that there is no distinction possible in the status of Alaska Natives and non-Natives within the legal framework. This is contrary to the federal recognition of a different status for American Natives, making it possible to provide special status and provisions in specific settings. La Vine as well as Huntington write:

When Alaska became a state in 1959, a constitution was adopted that reserved the common use of fish and wildlife for all Alaskans, and, in 1960, authority to manage fish and game was transferred from the federal to the new state government. While the federal government recognized its role in meeting the interests of the Alaska Native people, the new state felt no similar obligation and considered Native affairs to be under federal jurisdiction. (La Vine 2010: 28)

In addition to prohibiting discrimination against minorities, it [the constitution] removed any special status held by Natives in the eyes of the state government. While under federal law Natives can be exempted from such regulations as the hunting ban under the Marine Mammal Protection Act of 1972, under Alaska law Natives must be treated the same as all other residents of the state. (Huntington 1992: 28)

I will conclude this section about the development of game laws and wildlife

management in the United States by highlighting the importance of hunting and fishing for Alaska residents.

As I have already indicated in the previous sections, subsistence and sport hunting and fishing activities are of crucial importance to the population of Alaska. For Alaskan Natives as well as non-Native residents of the state, whether for consumptive needs and desires or recreational and sport pursuits, being out in nature and hunting and fishing play an important role in the lives of many people living in Alaska today as well as in the past. With the growth of the Alaskan population there has also been an increase in the number of participants in hunting and fishing activities. The U.S. Fish and Wildlife Service for Alaska indicates this in a survey conducted in 2011 (U.S. Department of the Interior et al. 2011: 5). The following table (Table 1) taken out of the report shows the growing number of people hunting in Alaska (the number rose from 93,000 hunters in 2001 to 125,000 hunters in 2011).

Alaska 2001–2011 Comparison			
(Numbers in thousands. Expenditures in 2011 dollars)			
	2001	2011	Percent change
Fishing			
Anglers in state	421	538	NS28
Days in state	3,408	4,360	NS28
In-state expenditures by U.S. anglers	\$682,508	\$639,356	NS-6
State resident anglers	185	211	NS 14
Total expenditures by state residents	\$271,528	\$287,528	NS6
Hunting			
Hunters in state	93	125	NS34
Days in state	1,146	1,336	NS17
In-state expenditures by U.S. hunters	\$275,581	\$424,803	NS54
State resident hunters	74	106	43
Total expenditures by state residents	\$141,845	\$372,008	162

Table 1. Comparison of statistical data on hunting and fishing participation in Alaska, 2001-2011, U.S. Department of the Interior et al. 2011: 5.

While the number of people engaged in fishing activities and the expenditures stayed relatively stable, the number of hunters rose significantly. In contrast to the rise in people participating in hunting activities in Alaska, the numbers for the whole United States show a decrease in participation as well as expenditures, according to a 2016 National Survey by the Fish and Wildlife Service:

Comparison of the 2006 and 2016 Surveys shows a decrease in the number of hunters and a decrease in their expenditures (both were not statistically significant). Small game had a decline of 27%. [...] Total hunting expenditures decreased 6% (not

statistically significant). (National Survey of Fishing, Hunting, and Wildlife-Associated Recreation 2016: 7)

The contrasting trend in Alaska compared to the nation-wide trend indicates the persistent importance of hunting and fishing activities and demonstrates a specific feature of the Alaskan State. This also points out the importance of my field study of the Copper Basin moose hunt as competition for a limited resource increases and the management authorities in Alaska are faced with rising demands of different user and interest groups. The next section provides more details about the current system of wildlife management in Alaska. This includes the state and federal agencies as well as the public advisory councils involved in the regulation of public demands.

5.2 Subsistence management agencies in Alaska

The subsistence management system in present-day Alaska is divided between the State and federal authorities due to the implications of ANILCA. The federal government holds the land title to about sixty percent of Alaska, the state to about thirty percent, and around ten percent belong to the Native Regional Corporations, which are also under state jurisdiction.

Along with the federal government, the state manages wildlife populations with the goal of providing an opportunity for hunting and fishing and maintaining healthy game populations and habitats at the same time. With the growing number of people hunting and fishing in Alaska, the pursuit of this goal has become an area of tension not easily solved.

In Article VIII (Natural Resources) of the Alaska Constitution, the prevailing principle for state management agencies and their work of 'sustained yield' is written in paragraph four: "Fish, forests, wildlife, grasslands, and all other replenishable resources belonging to the State shall be utilized, developed, and maintained on the sustained yield principle, subject to preferences among beneficial uses" (Alaska Constitution 1956).

Apart from the principle of 'sustained yield,' the demand that the given populations of wildlife should be increased for human use, La Vine (2010) provides another important point for both the state and federal management programs:

It is important to note that both the state and federal subsistence management programs prioritize the subsistence use of resources over any other. They also manage for the protection and healthy abundance of fish and game stocks, prioritize among subsistence users when stocks are low, and share similarity in their regulatory

framework. Where they differ most significantly is in determining who is eligible to be a subsistence user, and where subsistence harvests are allowed. (La Vine 2010: 34)

The questions of who qualifies for subsistence uses and on whose lands the subsistence harvest will take place is the individual hunter's or group's greatest concern regarding the differences between the two systems, even though both give preference to subsistence use. As mentioned before, the federal agencies apply a rural preference for subsistence use, saying only rural residents of an area can hunt and fish under subsistence regulation on federal lands like the national parks and preserves or BLM land (Bureau of Land Management). In contrast, the state supreme court ruled this rural preference unconstitutional. This means that, for the state, every resident of Alaska qualifies as a subsistence user, although the state determined non-subsistence areas in which no subsistence activities are allowed.

There are different actors involved in the regulatory system, both on the state and federal level. I will start with a brief description of the state authorities.

5.2.1 State management program

State management of hunting and fishing works through the Board of Fisheries and the Board of Game, which are supported by the Alaska Department of Fish and Game (ADF&G). ADF&G is organized into seven divisions which have specific functions and tasks and provide input and data for decision-making by the Boards. For an overview see the provided figure from the official homepage of ADF&G:



Figure 2. Alaska Department of Fish and Game organization chart, ADF&G 2016a.

The Boards establish the regulations for fishing and hunting according to the information and data provided by the different divisions.

Biologists generally dominate the ADF&G, but there is also an anthropological unit, the Division of Subsistence. If changes in stocks or resource use are detected, the divisions as well as the public and the Advisory Committees can write proposals to change certain regulations in specific areas. The state is split up into five regions and twenty-six game management units (GMU). These are further divided into smaller subunits and regulations can vary from unit to subunit according to the local circumstances and needs.

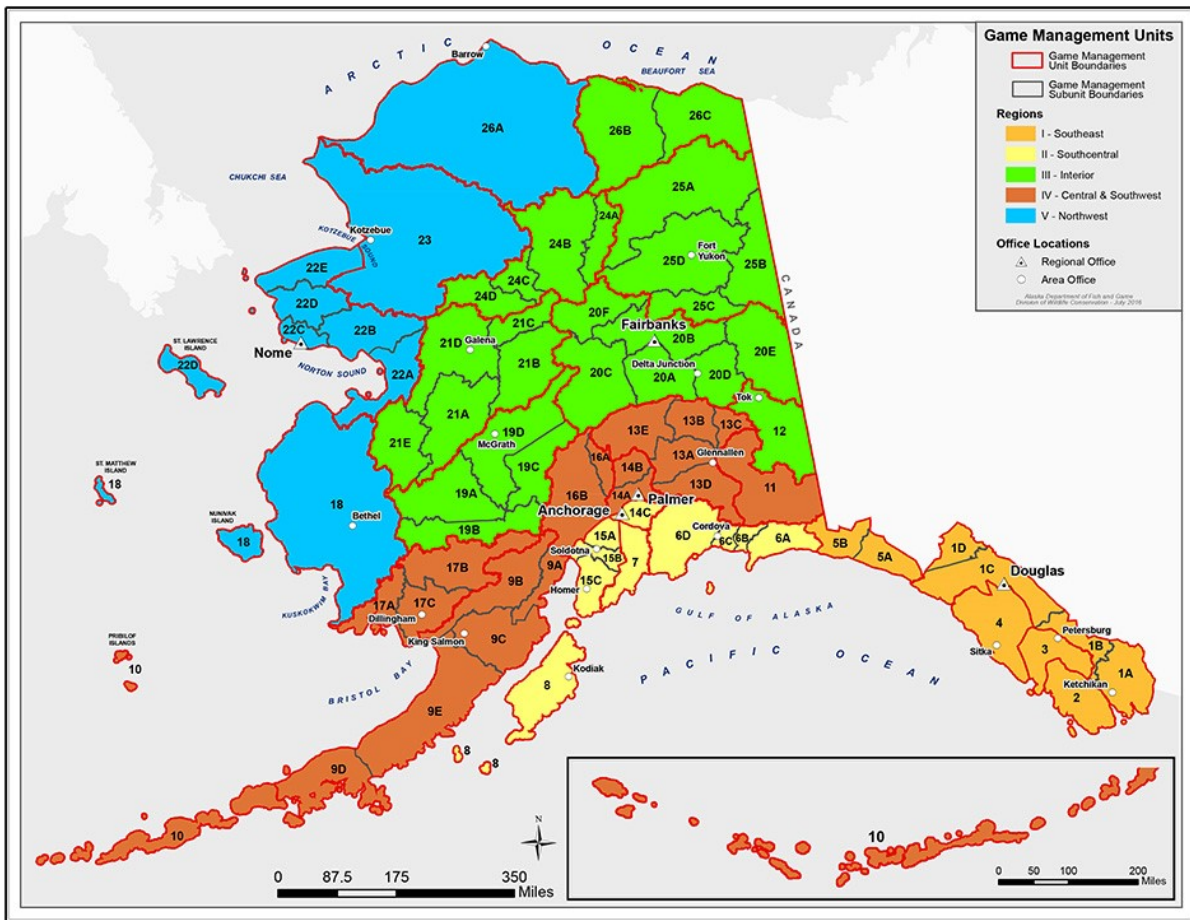


Figure 3. Regions and Game Management Units, Alaska, ADF&G 2016b

There are also general regulations that apply to all regions and sub regions. Under State regulations there are six different types of hunting: General Season, Drawing, Registration, Tier I and II, Community Subsistence Hunt and Targeted Hunts (see 2017-2018 Alaska Hunting Regulations 14ff. for more details on the types of hunts). The general season hunts are the least restrictive and are generally open to all people and require a hunting license and a free harvest ticket. These hunts are for game populations and areas that have a harvestable surplus big enough to be open to the general public. A hunting license for a resident (required for people ages 18-59) costs, for example, costs US\$ 45 for the season 2017-2018 and is valid for one year. Residents ages 60 years or older only need a free permanent identification card in place of a license. The harvest ticket must be carried in the field and filled out immediately after a successful hunt. Drawing hunt permits limits the harvest by restricting the number of hunters in the field. Hunters must apply for a permit in advance and pay an application fee, and the permits are awarded through a random drawing. For registration permits, hunters must obtain a permit and agree to the conditions determined for each hunt. When the harvest quota is reached, the hunt

will be closed by emergency order. Most registration hunts are on a first-come, first-served basis. Some registration hunts are limited to subsistence users and residents; these hunts are referred to as Tier I subsistence hunts. The Tier II subsistence permit hunts are only for residents and are held when there is not enough game to satisfy all subsistence needs. The permits are distributed according to a scoring system to questions on the application about their livelihood and dependence on the resource. The Tier II scoring system will be discussed in more detail in the following chapter as it is also part of the regulations for the Copper Basin moose hunt. Targeted hunts are like registration hunts and hunters have to apply at a specific time. Permits are distributed through a drawing. The last type of hunt, introduced more recently, is the Community Subsistence Hunt (CSH). This was originally established to meet traditional subsistence practices and needs. It is not designed as an individual hunt but as a group hunt. A group of people can apply together as a community and the bag limit is not created on an individual basis but on a group basis, plus they must meet certain requirements and restrictions to obtain a permit. The Community Subsistence Hunt has been the subject of some debate in the recent years, especially the Copper River Basin CSH, and is also the case presented in this thesis (see Chapter 6).

Apart from the different designs of hunts and varying eligibility criteria, there are general hunting restrictions and bag limits that have to be complied with in order to maintain a license and obtain a permit. These include restrictions for the use of motorized vehicles for hunting, the kind of weapons that are allowed and the proper use of killed animal's meat. All edible parts of the animal have to be salvaged and there are requirements for the proper meat care (see *ib.* 18ff. for more details on the general restrictions and requirements). Bag limit refers to the number of animals allowed to be taken with a given permit or harvest ticket. The bag limit can either be on an individual basis or, as in the case of the CSH, on a household basis. Another measure that applies to most hunts are restrictions in terms of the size or sex of the animal. For moose, for example, there is the requirement to only take bull moose with an antler range size bigger than 50 inch (127 cm) or with 3 or 4 brow tines on one side or a spike or fork on either side. For a more detailed description of the requirements for a legal taking of moose see the appendix C, an information supplement provided by the ADF&G. These requirements, as can be seen in the case of the CSH in the Copper River Basin, accommodate the sport and recreational

hunters' concept of hunting more than the Natives' concept that an animal that presents itself should be taken. Out of consideration towards the Native conception, the Board of Game adopted a 100 'any-bull'⁵ quota for the CSH at the Copper River Basin.

The regulations⁶ are in effect for one year. In the meantime, the public and the Advisory Committees can submit proposals for changes to the regulations, which will be considered by the Boards at their scheduled meetings. The managers and scientific staff will comment on the submitted proposals according to their functions and duties. Biologists, of course, focus more on the stocks and health of populations for certain species than on the resource use by humans and their activities and needs. Some populations of wildlife and the respective regulations are under constant dispute because of different interests and have been frequently changed. The moose population of Unit 13 in the Copper River Basin is a prime example for this way of working and will be shown in Chapter 6.

To meet the needs of the subsistence users, especially Alaska Natives, and to provide scientific research dealing with the human part of wildlife management, the Division of Subsistence was founded with the enactment of the State Subsistence Statute in 1978.

Division of Subsistence

This division is a research department designed to gather accurate information and data about the subsistence uses, practices and harvests of people living in Alaska. According to James Fall, who works in the Division and provided a paper about its research activities for the years 1980-1990, it is quite unique:

The Division of Subsistence of the Alaska Department of Fish and Game (ADF&G) is perhaps unique as a branch of a state natural resources agency which conducts ethnographic and applied anthropological research in rural, primarily Native American communities. (Fall 1990: 68)

Huntington describes the Division in 1992 with the following words:

This section [the Division of Subsistence] was to conduct research and provide information on the role of subsistence in the state and to help define subsistence and incorporate subsistence needs in the regulation and management of fish and game.

⁵ 'Any-bull' means a bull moose that does not meet antler restrictions

⁶ See Appendix D for an illustration of the hunting regulations for 2017-2018 in GMU 13.

In other words, the Subsistence Sections was the institutional bridge between subsistence users and ADF&G's regulatory system, giving a voice to subsistence and subsistence users throughout Alaska. (Huntington 1992: 92)

The research conducted by the staff of the Subsistence Division is centered on questions of harvest levels, resource use areas, sharing and the importance of traditional foods in the diet of the people. All these subjects were, according to Huntington, unknown and not discussed before the creation of the Division.

The level of subsistence harvests, the areas of subsistence use by villagers, the cultural role of traditional foods, the importance of sharing within and between families and communities – all were unknown to the biologically-oriented ADF&G. (ibid. 92f.)

In contrast to the federal definition of subsistence users that links subsistence with rural residency, according to the state all residents of Alaska are qualified as subsistence users and there is certainly no distinction between Native and non-native users. Although most of the Technical Papers (the research output of the Division, which is extensive) are concerned with rural villages and the Native population, the proposals and changes the Division implements are not centered around the question of Native users and their special needs. Huntington writes in 1992: "Its research allows the division to be the best informed advocate for subsistence uses" (ibid. 93). This seems to be true, as there is no other division inside the Department of Fish and Game that is concerned with the needs of subsistence users. However, their position towards local users is also contested. There are two obstacles that, according to Huntington, were also mentioned during interviews with staff members of the Division. The first one is that the employees work for the ADF&G. This department has gained a lot of mistrust by local people for enacting regulations that were not in accordance with local needs. The second one is the professional orientation of the Division, in which most of their work is for government organizations and not for the villagers themselves. Local people often do not see the purpose of the Division's questions and feel distrust talking about harvests and practices because it could create disadvantages for themselves.

For local residents, these regulations are the most tangible part of wildlife management, for they control, or attempt to control, the actions of the hunter. The regulations provoke distrust when they are seen to be inappropriate; they provoke outrage when they are seen to be too restrictive; they provoke lawsuits when they are seen to be unfair. (ibid. 94f.)

The Division's studies try to get as accurate information as possible about harvest

levels of local users to determine subsistence food needs. Hunters are, according to the staff members, afraid to give the real numbers of their harvests because they fear that regulations will be tightened and enforced.

The chief aim of hunting regulations is to ensure that animal populations remain healthy. To do this, harvests are limited by bag limits, closed seasons, and restrictions on the methods and means of hunting, as well as on the use of game that has been taken. The chief aim of local hunters is to put food on the table and to obtain other products such as skins, antlers, and sinew. Where hunting regulations conflict with subsistence needs, compliance is likely to suffer. This is especially true if the regulations as a whole are perceived to be inappropriate. (ibid. 98)

This important remark by Huntington requires a critical consideration of the role of the anthropologists working at government agencies themselves. The primary goal of the agency is ostensibly the management of wildlife populations and the environment. At the same time, the regulations, restrictions and actions seriously affect human activities and hence indirectly manage humans. For people and groups engaging in subsistence activities not just for fun, like recreational sport hunters and fishers, the most important goal is to bring home food for the daily diet. A way of life based on subsistence cannot be managed in the same way as a recreational desire. For a hunter who depends on the meat for nutrition, a found animal needs to be taken. It is uncertain if there will be another opportunity soon, and a lottery permit every three years will not satisfy his and his family's nutrition needs. As shown below, the economic situation in parts of rural Alaska leaves no opportunity to buy all nutritional products at the store. Apart from that, it has been widely and repeatedly stated by Alaska Natives that traditional foods are preferred to western-style foods, and that traditional foods do not only have a nutritional and health value but also a social one. Although these findings are widely acknowledged and mostly provided by the staff members and anthropologists of the Division of Subsistence, their actions regarding the regulations of hunting and fishing often do not or cannot reflect these findings. The power relations inside the regulating bodies remain concentrated around the interests of sport and recreational hunters and fishers. Despite almost forty years of anthropological research and an immense output of data and reports, these power relations could not be shifted towards a more comprehensive understanding of the subsistence way of life of Alaska Natives by the management authorities. It is important to acknowledge the work of the anthropologists working at the Division and their effort to make the effects on humans visible, but it is also important to critically

reflect the position of the anthropologists inside the system. It is an obligation towards the people who provided all the input and data the anthropologists work with.

Advisory Committees (AC)

The regional advisory committees, authorized under Alaska Statute 16.05.260 and regulated under AAC Title V, Part 6, Chapter 96, are established by the Joint Boards of Fisheries and Game. There are currently 84 advisory committees in place throughout Alaska. Their purpose is to gather local input by the public and to discuss, evaluate and submit proposals for changing regulations. The committees must have at least five members and should not have more than 15. The original five members of the committee are appointed by the joint Board of Fish and Game and they represent the main user groups. The committee elects additional members. Every village and town inside the area the committee wants to represent should have a seat on the committee⁷. The advisory committees hold at least two meetings per year which are open to the public, and members of the staff of the local ADF&G office attend the meeting as well provide input. When a Board of Game/Fish meeting is scheduled, the committees meet in advance and vote on the proposals that will be discussed at the upcoming meeting. The composition of the committees depends on local circumstances and population but, as will be seen in the case of the committees involved in the Copper River Basin CSH, most are dominated by non-Native Alaskans. This is not surprising, considering that the Native population only accounts for about 25% of the Alaskan population. This again shifts the decision-making away from Natives, as can be seen from the votes of the ACs on the proposals concerned with the CSH in the Copper River Basin. Even though access is not low-threshold, the advisory committees are nonetheless important sources of public input for the regulation process.

Division of Wildlife Conservation

The Division of Wildlife Conservation's mission is "to conserve and enhance Alaska's wildlife and habitats and provide for a wide range of public uses and benefits" (ADF&G 2018). The 'core services' are to maintain and enhance conditions and opportunities to hunt, fish and trap as well as to inform and provide knowledge to the public about wildlife and regulations. The Division's staff is mainly composed of

⁷ See Alaska Administrative Code: 5 AAC 96.060. for more information on the ACs.

biologists and natural scientists conducting research on wildlife and their habitats and managing wildlife populations according to the goal of 'sustained yield.' This dedication to providing and enhancing opportunities for hunting, fishing and trapping reflects the general sentiment towards hunting and fishing in Alaska. Staff members collect data on species of wildlife, count populations via observation, aerial flights and other methods, manage and oversee the harvest of game and fish, and are involved in the regulatory process. They provide the Board of Game and the Board of Fish with data and reports on wildlife populations, harvest and habitat as well as oral reports at regulatory meetings. An additional important service of the Division of Wildlife Conservation is the education and informing of the youth and public regarding wildlife, safe and ethically hunting and fishing, and regulatory process (ADF&G 2018).

I concur with Huntington as he comments on Alaska's wildlife management system in 1992, keeping in mind the aforementioned concerns and the case of the Copper River Basin CSH:

The state management system, administered by the Alaska Department of Fish and Game, has tried to accommodate the needs of local people. This effort has been partly successful, but some conflicts and problems still exist between local practices and regulatory requirements. The shortcomings of the systems can be found in these conflicts. (ibid. 98)

In this section I have provided a streamlined account of the stakeholders in the State wildlife management system and the regulation process, acknowledging that important features had to be left out and could not be discussed in the length that may be required. The next section gives a brief overview of the federal management process and the stakeholders involved.

5.2.2 Federal management program

Federal agencies are in charge of managing subsistence hunting and fishing on all federal lands, which make up almost sixty percent of Alaska, as well as for all sea mammals and migratory birds. This is due to the non-compliance of the state with ANILCA, as mentioned and explained in Chapter 4. As long as the state will continue to not comply, the separation of the two systems will likely prevail. Hunting and fishing regulations in the federal system are made by the Federal Subsistence Board, which meets every two years in separated cycles for fishing and hunting regulations.

The Office of Subsistence Management writes proposals and conducts research in the federal system and is part of the Department of the Interior. Regulations are effective for two years. Regional Advisory Councils (RACs) consisting of rural Alaska citizens involved in subsistence uses also support the Board in the decision-making process. In ANILCA Title VIII section 801, Congress finds and declares that:

The national interest in the proper regulation, protection and conservation of fish and wildlife on the public lands in Alaska and the continuation of the opportunity for a subsistence way of life by residents of rural Alaska require that an administrative structure be established for the purpose of enabling rural residents who have personal knowledge of local conditions and requirements to have a meaningful role in the management of fish and wildlife and of subsistence uses on the public lands in Alaska. (ANILCA 1980, Title VIII, Section 801)

This meaningful role is supposed to be established through the creation of the regional advisory councils and the participation of local subsistence users.

Created by the section 805, the regional advisory councils play an important role in establishing a forum for local regional involvement and in bringing strong recommendations to the federal subsistence board regarding policy and regulations based on local feedback and concern. (La Vine 2010: 36)

In the federal system, the Federal Subsistence Board makes no regulations without discussion and approval by the regional advisory committees, and no research is conducted without the support and involvement of the village councils. However, it is questionable whether the 'meaningful role' ANILCA demands is met with these steps. There have been voices critical of how management is done as well as about the rural preference; La Vine makes an important point about the increasing Native population living in urban areas:

However, ANILCA, while providing preference for subsistence uses of resources on federal lands, specifies only subsistence uses by rural residents, not Alaska Natives. The large majority of Alaska Native people do live in rural Alaska, but the urban population of Alaska Natives is growing. For these urban based Natives, participating in the subsistence way of life is critical to their identity as Alaska Native persons. Many return to their village of origin for subsistence purposes throughout the year. But as new generations of Alaska Natives are born on the road system (i.e. urban Alaska), in locations that do not provide a rural preference, the question as to whether the federal government is actually protecting and providing for their subsistence 'values' persists. (ibid. 38)

Jeffrey Brooks, who also worked in the Office of Subsistence Management,

published a paper together with Melanie B. Jacobs that demanded more meaningful participation of Alaska Native people in the management and conservation system.

Participation by Alaska Native tribes, communities, and individuals in conservation projects on public lands is often inadequate. Increasing the quantity and effectiveness of Native participation in conservation should be of paramount importance to federal agencies in Alaska. (2011: 91)

The Office of Subsistence Management supports the Board of Subsistence in their decision-making through research, similar to the Division of Subsistence in the State system. The Bureau of Land Management (BLM), which occupies one seat in the Federal Subsistence Board, is responsible for some areas of federal land that are not part of national parks, preserves or refuges. A representative of the National Park Service, the U.S. Fish and Wildlife Service, the U.S. Forest Service and the Bureau of Indian Affairs as well as two public members from rural Alaska hold the other seats on the Federal Subsistence Board.

The rural preference that the federal government adopted means that only rural residents are eligible for subsistence hunting on federal lands. However, in some parts where there is no pressure or less competition over resources, plus no specific regulation that excludes non-local residents, all Alaskans can hunt on public lands, National Park Service-managed parks and monuments that have exclusive regulations. Because of the rural preference, similar to the non-subsistence areas of the state program, the federal government designated ten areas as non-rural areas in Alaska. These encompass the major urban areas of Anchorage, Fairbanks, Juneau, Valdez, Homer, Kenai, Wasilla/Palmer, Seward and Ketchikan. Residents living in these areas are, in most cases, ineligible for hunting on federal lands for subsistence purposes. The game management units are the same as in the state system, and it depends on what land the hunt takes place to know whether state or federal regulations apply.

The general provisions for hunting on federal public lands in Alaska are very similar to the state provisions, and a state hunting license is required as well. A harvest limit that applies to all hunts is specified for each region and mostly cannot be combined with the state bag limit. Harvest tickets and tags are necessary for hunting on federal land, similar to hunting on state land, and harvest reports are required as well. Some units require registration permits that are distributed to rural residents through a random drawing. National Parks Service-managed lands are subject to additional

rules, and access can be restricted to local residents of the park or monument. Similar to the state advisory committees, the federal management system gathers input from the public through Regional Advisory Councils (RACs). For this purpose, Alaska is divided into ten subsistence resource regions, each represented by a council. The councils provide the rural residents an opportunity to participate in the regulating process and to write and review proposals. Members of the councils are appointed by the Secretaries of the Interior and Agriculture and must reside in the area as well as have knowledge about subsistence resources, traditions, species and resources. The Office of Subsistence Management provides a handbook with the current regulations for the public, similar to the state hunting booklet.

I will end this streamlined description of the federal subsistence program, as federal regulations only play a minor role in the Community Subsistence Hunt in the Copper River Basin. Most lands of GMU 13 that constitute a major part of the traditional hunting territory of the Ahtna are state-managed lands. It is, however, important to note that the Department of the Interior and representatives of Ahtna and Ahtna Inc. signed a memorandum to establish a co-management system on federal public lands inside the Ahtna territory. I will discuss this agreement in more length when talking about the Ahtna in Chapter 6. The next section is concerned with the economic situation in rural Alaska.

5.3 Economic situation in rural Alaska: the mixed-economy structure

The economic situation of villages and residents in rural Alaska today is characterized by a variety of economic activities pursued to guarantee their survival in very remote areas. These economies are not marked solely by subsistence but by a mixed composition of subsistence, commercial and public incomes. Oran R. Young writes in 1992 (though little has changed since then):

Though the details vary from village to village, the fundamental pattern of economic life that prevails today in the remote communities of Alaska is unambiguous. The economies of these communities are not subsistence economies; they are mixed economies, encompassing large public or government sectors and sizable commercial sectors as well as ongoing subsistence sectors. (Young 1992: 57)

Robert J. Wolfe (2004) in a “Synopsis from Twenty-Five Years of Research by the State of Alaska” terms the socioeconomic systems of Alaska as follows:

The socioeconomic system of Alaska’s urban areas can be broadly termed ‘industrial capitalism,’ a socioeconomic system that evolved after America’s industrial revolution

[...] Outside of Alaska's urbanized areas, in the open rural countryside, traditional subsistence economies evolved into new types of socioeconomic systems broadly termed 'mixed subsistence-market economies. (Wolfe 2004: 5)

Wolfe also points out the important fact that there are different modes and patterns of subsistence in different parts of Alaska: "There is not one subsistence tradition in Alaska, but a multitude of subsistence traditions linked to particular localities. [...] [S]ubsistence systems are localized because of a constellation of factors, including the ecologies, cultures, and economies of communities of users" (ibid. 1ff).

Although subsistence activities still provide for a major part of the diet for rural residents as well as for goods produced from animals for personal and community use and handicrafts for commodity exchange, there are no pure subsistence economies in the rural areas of Alaska. This has been true since at least two hundred years ago, when trading with Russian and British fur traders began. Most likely (and proven for particular regions), commodity exchanges had occurred already for a long time between groups inhabiting different parts of the land, such as trade from the coastal regions to the interior regions and back.

Subsistence activities continue to play a vital role in the economies of rural Alaska, and the amount of harvested wild foods significantly contributes to the diet.

The Division of Subsistence at the ADF&G conducted extensive research in the rural villages of Alaska in past decades and continues to monitor and survey the patterns, activities and harvested amounts connected with subsistence. These Technical Papers, which are public and provided by the Division of Subsistence for all regions in Alaska, show the relevant data. The most important methods for this research are systematic household surveys and the mapping of locations for subsistence as well as key respondent interviews. Through these investigations, the amount of harvested resources and the pursued activities by subsistence users can be determined and described very accurately for each region. In an overview of subsistence for all of Alaska, Jim Fall (2014) prepared a table (Figure 4) showing the amount of harvested resources for each region (rural as well as urban) in useable pounds of wild resources per person and year. The average of harvested resources differs greatly between urban areas with 19 pounds (8.6 kg) and rural areas with 275 pounds (125 kg), again pointing out the importance of subsistence for rural communities. The highest amounts are found in the Arctic region, with 405 pounds (184 kg) per person per year of harvested wild resources. For the Ahtna region (Rural Southcentral), an

average of 145 pounds (66 kg) of harvested wild foods is documented annually per person. This indicates that the road connection and the comparative proximity to urban centers may have an influence on the ability and necessity to harvest wild foods. More detailed data for the Copper River Basin and the Ahtna villages located within this region is discussed in Chapter 6.

Researchers in the Division of Subsistence also tried to estimate the replacement values for these harvested resources by comparing it to store-bought food. The second table below (Table 2) is also provided by Jim Fall in the Subsistence overview for the year 2014:

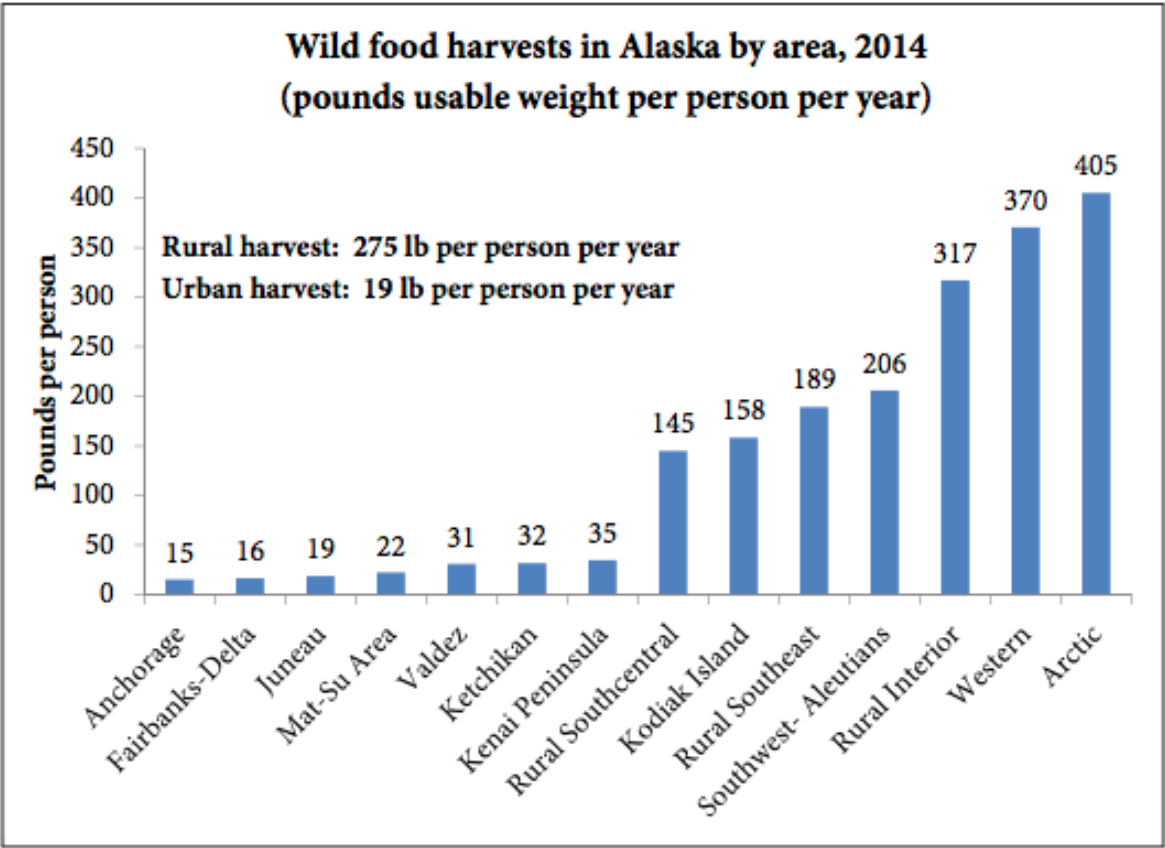


Figure 4. Wild food harvests in Alaska by area, Fall 2014.

**Wild food harvests in Alaska:
Nutritional and replacement values**

	Annual wild food harvest (pounds per person)	Annual wild food harvest (total pounds)	Percent of population's required:		Estimated wild food replacement value @ \$4.00/pound	Estimated wild food replacement value @ \$8.00/pound
			Protein (46 grams/day)	Calories (2100 kcal/day)		
Rural Areas						
Rural Southcentral	145	1,040,416	92%	13%	\$4,161,665	\$8,323,330
Kodiak Island	158	2,192,138	101%	14%	\$8,768,552	\$17,537,104
Rural Southeast	189	5,213,268	121%	17%	\$20,853,073	\$41,706,145
Southwest-Aleutians	206	3,396,436	131%	18%	\$13,585,742	\$27,171,485
Rural Interior	317	3,100,075	202%	28%	\$12,400,300	\$24,800,599
Western	370	9,119,599	237%	33%	\$36,478,398	\$72,956,796
Arctic	405	10,267,357	259%	36%	\$41,069,429	\$82,138,858
<i>Subtotal</i>	<i>275</i>	<i>34,329,290</i>	<i>176%</i>	<i>25%</i>	<i>\$137,317,158</i>	<i>\$274,634,316</i>
Urban Areas						
Anchorage Area	15	4,585,868	10%	1%	\$18,343,470	\$36,686,940
Fairbanks-Delta	16	1,735,734	10%	1%	\$6,942,935	\$13,885,870
Juneau Area	19	614,812	12%	2%	\$2,459,247	\$4,918,494
Prudhoe Bay	19	41,452	12%	2%	\$165,809	\$331,618
Mat-Su Area	22	2,146,530	14%	2%	\$8,586,119	\$17,172,239
Valdez	31	126,416	20%	3%	\$505,665	\$1,011,330
Ketchikan Area	32	440,397	20%	3%	\$1,761,589	\$3,523,178
Kenai Peninsula	35	1,949,008	22%	3%	\$7,796,030	\$15,592,060
<i>Subtotal</i>	<i>19</i>	<i>11,640,216</i>	<i>12%</i>	<i>2%</i>	<i>\$46,560,864</i>	<i>\$93,121,729</i>
Alaska Total	63	45,969,506	40%	6%	\$183,878,022	\$367,756,045

Table 2. Nutritional and replacement values of wild food harvests in Alaska, Fall 2014.

In 2014 the total harvest of wild foods, estimated by ADF&G, was 45,969,506 million pounds (20,851,420 million kg) in usable weight. The estimated replacement value of these resources was \$183,878,022 (calculated as \$4.00 per pound). The rural harvest of wild foods was three times larger than the urban harvest (34 million pounds versus 11.6 million pounds). The wild food resources also accounted for 176% of the required protein for rural residents and 25% of their required calories. In 2012 the estimated figures for the harvest of wild foods was slightly higher than in 2014. The total harvest was estimated at 50 million pounds (22.8 million kg), with 36.9 million pounds (16.7 million kg) from rural residents and 13 million pounds (6.1 million kg) harvested by urban residents (Fall 2016: 55).

These estimates take into account the monetary value of subsistence resources but do not include relevant social and cultural values of subsistence resources and the activities themselves. From an economic perspective, as Young writes, these estimates of the monetary value of subsistence resources reveal that, for most remote villages in Alaska, subsistence foods account for about a third to a half of household incomes and that food production is an economic enterprise in rural communities in contrast to urban areas. On the other side this also reveals that:

half or more of the income that the residents of these communities receive stems from the commercial sector (mainly in the forms of wage labor and commodity

exchanges) or from the public sector (mainly in the forms of salaries, services, and transfer payments provided by governments). (Young 1992: 58)

The opportunities for wage labor in rural Alaska are scarce, however, as there is almost no industrial production besides the extraction of natural resources like oil, gas, minerals and timber. Most times these activities are beyond the skill sets and qualifications of local residents:

Many employment opportunities in these communities are linked to enterprises that produce commodities for export and that are controlled by decision makers in distant boardrooms [...] When conditions in the outside world change rapidly, the mixed economies of the remote communities of Alaska are subjected to extreme fluctuations over which they have little or no control. (ibid. 61)

Jobs with at least some form of long-term security are provided by the state and federal government in the area of administration (village administration as well as in the schools and in health care institutions), but possibilities are limited. Another important economic sector with the potential for future growth, at least in some parts of the state, is tourism. Hotels, restaurants, wildlife guides and stores for equipment can provide long-term employment in some communities. Further options for employment are small self-owned businesses like auto shops, retailers, hardware stores or other similar enterprises. The commercial fishing industry, a huge economic sector in some parts of the state, provides further employment opportunities. Problematic for the economic situation of villages in Alaska is that some or most of these wage labor opportunities are only seasonally available and do not provide full-year employment. On the other hand, seasonal employment also enables rural residents to engage in subsistence activities, which demand the necessary time to pursue these activities. Besides wages from labor and the income derived from that sector, rural communities and the residents are dependent on income from state and federal welfare payments like child or food support and social security benefits.

Apart from difficulties in obtaining an adequate income in rural Alaska to provide a living and all the expenditures accompanied with it like heating, food, fuel, car, internet and TV as well as health services and other expenses, it is important to consider that subsistence activities today also require a significant amount of money to obtain the necessary equipment for hunting and fishing.

Depending upon the local circumstances, these technologies include snow machines, all-terrain vehicle, pickup trucks, boats with gasoline engines, air transport, and high-

powered rifles, along with the fuel and ammunition required to keep these systems in operation. (ibid. 60)

Subsistence therefore cannot be detached from the overall economic situation of rural residents; one without the other is now almost impossible.

It should come as no surprise, therefore, that the economic problems of village Alaska revolve around impediments to the maintenance of a flow of cash that is adequate to support the operation of mixed economies without, at the same time, disrupting the ecosystems that are critical to domestic production or eroding the cultural practices of those residents of northern communities who remain closely tied to subsistence activities. (ibid. 59)

A further component of the economic situation of rural Alaskan Natives is the regional corporations established through ANCSA, which are supposed to provide some means of economic security for their shareholders. However, the economic output of the corporations varies significantly depending on the region and the economic opportunities available. Most corporations did not fulfill their desired outcomes at the time of the enactment of ANCSA. They are only able to provide some dividends to their shareholders and some employment options in the offices of the corporation.⁸

In general, the economic situation in rural Alaska and the mixed-economy structure can be described as uncertain and is characterized by fluctuations that are mainly beyond the control of rural residents. The economy in rural Alaska is marked by a mixture of cash and subsistence income and requires residents to be flexible and adaptive to changing economic, political, or climatic and environmental influences. The question of whether mixed economies in Alaska are persistent or transitional was part of a recent study by Burnsilver et al. (2016), the result of which was that most studied communities “have proven remarkably persistent” (p. 126), but that more “nuanced” and detailed research looking at local circumstances is necessary for outlooks in the future development of rural communities.

Given uncertain Arctic futures, current persistence of Alaska mixed economies does not guarantee their future persistence. Yet market engagement has not persuaded Iñupiat to transition away from core social, economic, and subsistence elements of mixed northern livelihoods. (Burnsilver et al. 2016: 127)

Through the case study presented in this thesis, I will provide a more detailed and nuanced account of the economic situation of the residents of the Copper River

⁸ For a more detailed account on the performance of ANCSA corporations and the impacts on culture in Southeast Alaska see, for example, Kirk Dombrowski's book *Against Culture* (2001).

Basin as well as look at the ‘persistence’ of Ahtna people fighting for subsistence rights (Chapter 6).

Excursion: economic importance of wildlife in Alaska

As already indicated variously on the previous pages, wildlife is of vital importance for the Alaskan population, as shown in the rising numbers of hunters and wildlife viewers. The importance of wildlife, apart from its nutritional, social and recreational value, can also be shown from an economic perspective. The economic importance of wildlife for the state and its residents is presented in a report provided by ECONorthwest for the ADF&G (2014), referring to a survey conducted in Alaska in 2011. The report states that in 2011 a total of \$3.4 billion has been spent on activities related to wildlife (hunting, viewing, fishing). The table below (Table 3) splits up the expenditures into relevant categories concerned with activities related to wildlife. Of the \$3.4 billion spent in 2011, about \$2.1 billion came from residents of Alaska, while \$1.2 billion were from visitors of the state. The table also makes clear that a major part of these expenditures was for activities related to wildlife-viewing (\$2.2 billion) rather than hunting activities (\$1.2 billion). Resident hunters spent the most money on fuel for vehicles (\$284 million) and gear/equipment (\$257 million).

Total Expenditures in Alaska from Hunting and Wildlife Viewing Trips in Alaska in 2011, by Category of Expenditure (Millions of Dollars)

	Residents			Visitors			Statewide Total
	Hunters	Wildlife Viewers	TOTAL	Hunters	Wildlife Viewers	TOTAL	
Trip Expenditures	\$769	\$815	\$1,584	\$76	\$727	\$803	\$2,387
Licenses, Tags, and Fees	\$8	\$6	\$13	\$9	\$19	\$28	\$41
Fuel for Vehicles	\$284	\$244	\$528	\$3	\$65	\$68	\$596
Transportation Fees or Tickets	\$100	\$136	\$236	\$9	\$199	\$208	\$444
Guide, Outfitter, Charter, and Transporter Fees	\$114	\$3	\$117	\$43	\$76	\$120	\$237
Groceries, Food, Liquor Purchased at Stores	\$177	\$196	\$373	\$3	\$61	\$64	\$437
Meals Purchased at Restaurants and Bars	\$43	\$92	\$136	\$2	\$102	\$105	\$241
Lodging	\$30	\$100	\$130	\$3	\$111	\$114	\$244
Equipment Rental	\$7	\$19	\$26	\$1	\$9	\$10	\$36
Souvenirs and Gifts	\$5	\$20	\$25	\$2	\$84	\$87	\$112
Trip-Package Expenditures	\$40	\$136	\$176	\$66	\$350	\$416	\$592
Gear and Equipment Expenditures	\$257	\$76	\$333	\$8	\$82	\$90	\$423
TOTAL EXPENDITURES¹	\$1,065	\$1,027	\$2,092	\$150	\$1,159	\$1,308	\$3,400

Source: ECONorthwest, with data from survey results.

Notes: Totals may not equal the sum of the components due to rounding. All values are rounded to the nearest million.

¹Total Expenditures include households' trip expenditures, trip package expenditures, and gear and equipment expenditures. They are derived from adjusted and total trip and household numbers as shown in Table 6 (the calculations used unrounded values provided in Appendix L). See Appendix A for a detailed discussion of how expenditures were derived from the survey data.

Table 3. Expenditures in Alaska for hunting and wildlife viewing, 2011, ECONorthwest 2014: 5.

Apart from the direct expenditures, wildlife-related activities also provide workplaces for Alaskans and thus further boost the economic importance of wildlife in Alaska. These workplaces include, for example, industries like retailers of equipment, tourism, and restaurants, as well as the management and enforcement of wildlife regulations. A further significant part of the economic impact and importance of wildlife-related activities is the contribution to conservation and wildlife research budgets provided through these activities. These figures clearly show the importance of wildlife-related activities for the state's local economy and the diverse interests linked to wildlife activities, leading to the opposition of any special preference or allocation of resources to specific groups (like Alaska Natives or rural residents). The next chapter will illustrate one of these conflicts.

6. The Ahtna people, their way of life and the political ecology of the Copper River Basin Community Subsistence Hunt

The Ahtna people, a group of Athabaskan Indians, have inhabited the Copper River drainage and adjacent lands in Alaska for at least the past five centuries. There is still no agreement of archeologists and anthropologists on the date of the first settlement of humans in the Copper River area and the National Park Service's study on the Wrangell and St. Elias National Park (which is part of the traditional Ahtna territory) mentions:

No one knows for sure when humans first reached the Copper River Basin of Interior Alaska, but by 8,000 years ago, caribou hunters began visiting Tangle Lakes, located at the head of the Gulkana River, fifty miles northwest of the park boundary. As glacial ice retreated, humans eventually entered the Wrangell Mountains. Archaeological evidence has established a record of continuous human presence in the middle Copper Basin for the past 1,000 years, although it was probably occupied much earlier. Some believe that the area was originally settled by the Eyak. The Ahtna, however, replaced them long ago. (National Park Service 2015)

The term Ahtna was in former times not used by the people themselves but actually refers to the Athabaskan dialect spoken by the people living in the area. According to DeLaguna and McClellan: "[E]ach local group was autonomous. The Ahtna never formed a tribal political unit [...]" (DeLaguna/McClellan 1981: 641). There are four distinguished dialects within the Ahtna language: Upper Ahtna, Central Ahtna, Lower Ahtna and Wester Ahtna. Eight distinguishable regional bands, each autonomous, inhabited the geographically circumscribed area (DeLaguna/McClellan 1981). Nowadays the term Ahtna is more familiar to outsiders and most Ahtna people refer to themselves as Ahtna. But Ahtna is also the name of Ahtna Inc., the regional corporation, and to distinguish the people from the corporation some Ahtna call for the spelling Atna' (see Holen 2010: 7). These examples disclose the internal differences within the Ahtna people who are not a homogenous group. In the course of this thesis I will keep to the spelling Ahtna and will refer to the corporation as Ahtna Inc., recognizing the wishes and different perspectives within the Ahtna peoples.

Today the Ahtna live in eight permanent communities (Cantwell, Chistochina, Chitina, Gakona, Gulkana, Mentasta, Tazlina and Kluti-Kaah (Copper Center)), mostly along the Richardson Highway, which leads from Valdez to Fairbanks. Some also moved to the larger cities of Fairbanks and Anchorage or moved outside the State. The

regional for-profit corporation established by ANCSA is Ahtna Inc. with its headquarter at the intersection in Glennallen. Before moving into permanent settlements, the Ahtna followed their seasonal cycle of summer and winter camps, their location depending on the availability of animals and other resources. Subsistence activities like hunting, fishing and gathering still perform an important role in all parts of Ahtna culture and economy. On the subsequent pages I will focus on the following aspects of Ahtna life: ecology and environment, population, social and political organization, economy and subsistence and Ahtna Inc. In course of this thesis I will not engage in detail with the historical trends and all aspects of Ahtna life but will concentrate on the mentioned points. The Ahtna way of life, their history and culture have already been subject to comprehensive research by anthropologists like Holly Reckord (1983) and Frederica DeLaguna together with Catherine McClellan (1981) as well as in the works of James Kari (1983, 1986, 1990) and the Technical Papers of the Division of Subsistence.

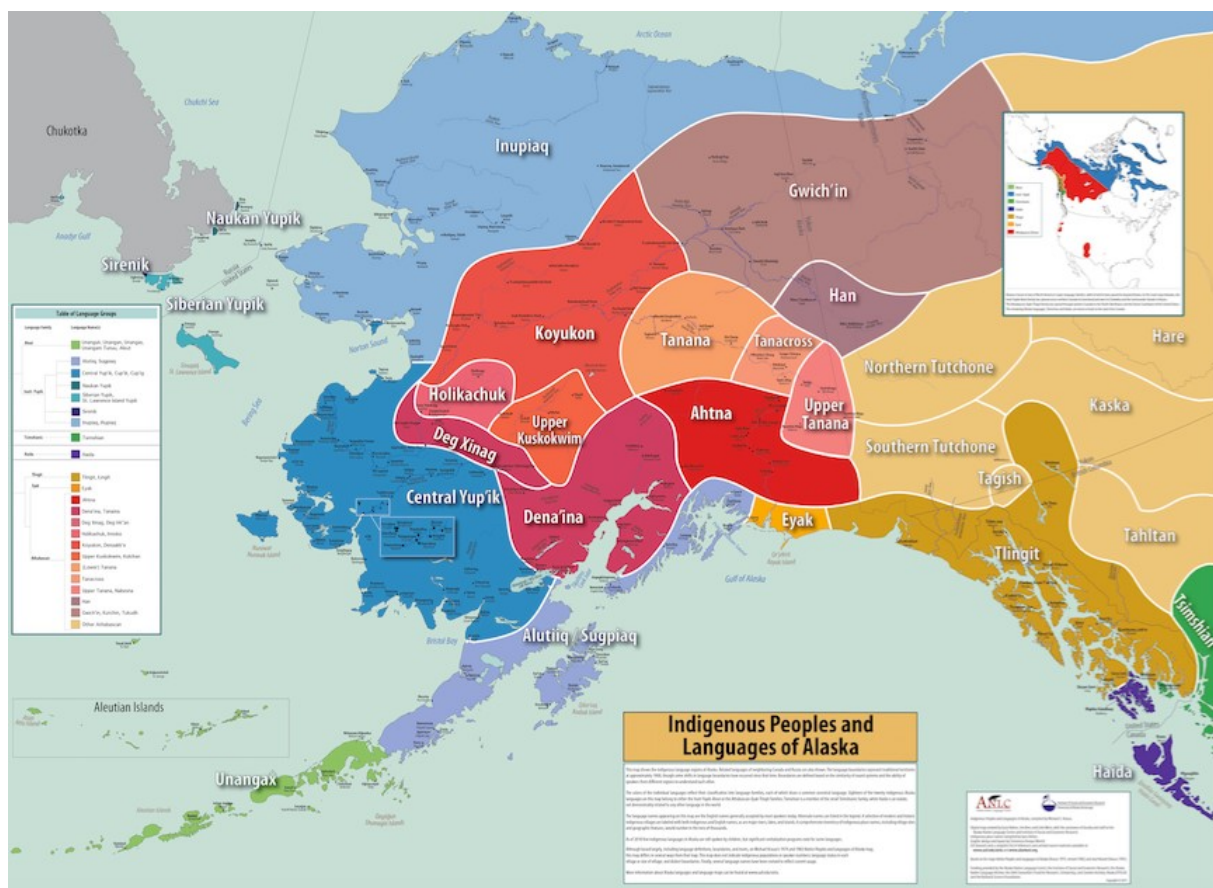


Figure 5. Alaska Language Map, UAF Native Language Center

The map above (Figure 5) shows Ahtna and other language groups in Alaska, the division and spread of language groups resembles the traditional territory of the

Ahtna quite well as can be seen on the following map (Figure 6) that shows the traditional territory of the Ahtna people.

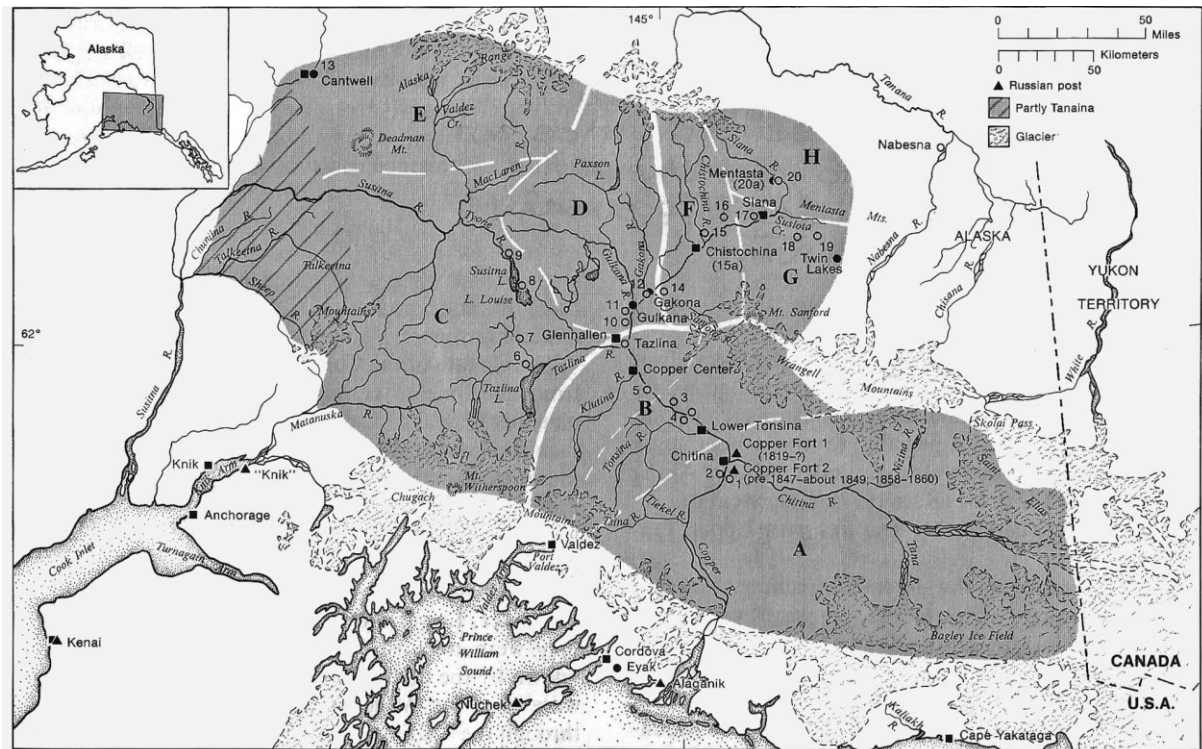


Figure 6. Traditional territory of the Ahtna, Ahtna Inc. 2017

Their territory stretches from the today known Denali National Park and Preserve over South Central Alaska into the Mt. Wrangell and Mt. Elias National Park and Preserve and to the Canadian border. Frederica de Laguna and Catherine McClellan in Volume 6 of the Handbook of American Indians from the Smithsonian Institute (1981) describe the Ahtna traditional territory as followed:

Ahtna territory in the nineteenth century included the 23,000 square miles of the Copper River valley, minus the delta and adjacent coasts and farther west, the Chugach Eskimo of Prince William Sound. The Alaska Range, from the Mentasta Mountains on the east to the gateway of present McKinley Park [Denali] on the northwest, formed the Ahtna northern boundary. The volcanic Wrangell Mountains marked the eastern edge of Ahtna territory, which also extended up the valley of the Chitina River, a major tributary of the Copper River that rises in the eastern icefields where the Wrangell and Saint Elias ranges merge. On the west, the Ahtna spread over the lake-studded plateau into the drainage basins of the Matanuska, Talkeetna, and Susitna rivers. The extreme northwestern part of this area was hunting territory shared by the Ahtna, Tanaina, and Lower Tanana Indians and lacked clear boundaries. (1981: 641)

In the center of Ahtna territory are the Copper River Basin with the Copper River and the Chitina River being the major streams. Mountains on each side surround the basin. The traditionally used country extends from the basin into the mountain areas that surround it. Before the Ahtna were forced to become sedentary in a few villages that resemble more or less the villages today they moved from summer to winter camp in the pursuit of subsistence activities and resources the year round. Different resources were located at different places, the salmon which is still today one of the most important subsistence resources used by the Ahtna could be found at the rivers in the basin where the fishing camps were established throughout the summer. For hunting in the fall they moved to higher altitudes where game like caribou or moose could be found (deLaguna/McClellan 1981: 642).

6.1 Ecology and environment

The territory of the Ahtna people lies within the sub-arctic zone and is characterized by a continental and maritime climate, which leads to extreme temperatures both in summer and in winter.

The climate of the Copper River valley is transitional from maritime to continental. The upper valley and plateaus near the Alaska Range are more continental than the lower valley near the Chugach Mountains and therefore experience greater variations in temperature, but less cloudiness and humidity and less precipitation. Snow cover in the inhabited areas generally lasts from mid-November to mid-April. (DeLaguna/McClellan 1981: 641)

The Copper River is divided into two ecological zones: the continental inland basin and the river delta located in the Gulf of Alaska on the eastern edge of Prince William Sound. The Copper River Canyon connects the basin and the delta. As the river meanders to the Gulf of Alaska, it passes through the Chugach Range that acts as partial barrier to maritime influences. However, the Lower Copper River exhibits many of the characteristics of a maritime climate while further inland the upper reaches of the Copper River are imbedded in a continental climate with much less precipitation. (Holen 2010: 7)

These two descriptions that resemble each other in most parts but have been written some 30 years apart, specify the climatic situation in the Ahtna territory very well. The major dominating features of the landscape are of course the summits of the surrounding mountains. Mt. Wrangell, Mt. Blackburn, Mt. Sanford and Mt. Drum are

all above 12,000 feet (3658 meters above sea level) and their snow cover is the origin of numerous streams and rivers that flow into the basin (see *ibid.* 8).

The environment of the Copper River Basin as well as the Ahtna territory is a typical northern forest environment: “The Wrangell region displays a northern boreal forest environment typified by spruce-poplar vegetation cover and fauna specific to the northern forests” (Reckord 1983: 10).

The tree species growing in the Copper River Basin include black spruce (*Picea mariana*), white spruce (*Picea glauca*), Alaska paper birch (*Betula papyrifera*), quaking aspen (*Populus tremuloides*), balsam poplar (*Populus balsamifera* spp. *Balsamifera*) and black cottonwood (*Populus balsamifera* spp. *Trichocarpa*). The permafrost in the region is up to 600 feet (180 meters) thick and stunts the growth of the trees (see Holen 2010: 9). Additionally different kind of bushes and berries can be found throughout the Copper River Basin, including blueberry (*Vaccinium* spp.), raspberry (*Shepherdia canadensis*), salmonberry (*Cornus* spp.) and cranberries (*Viburnum edule*) (*ibid.*).

The fauna of the Copper River Basin includes a variety of animals, small and big, that can be found spread around the country. The biggest mammals are moose (*Alces alces*) and caribou (*Rangifer tarandus granti*). According to Davin Holen the habitat in the Copper River Basin is not conducive for these species but still they can be found and the moose numbers have risen continuously since the 1940's (*ibid.* 10). The Copper River Basin is a temporary home to the Mentasta and Nelchina caribou herds as they migrate from one place to another. Other big mammals are Dall sheep (*Ovis dalli*) and mountain goat (*Oreamnos americanus*), which are found in higher elevations. Small mammals are much more numerous than the big mammals and the species found include among others: wolverine (*Gulo gulo*), beaver (*Castor canadensis*), coyote (*Canis latrans*), weasel (*Mustela erminea*), lynx (*Lynx canadensis*) as well as species of hare (*Lepus americanus*). The Copper River Basin with its numerous rivers also supports a high density of waterfowl and other bird species. The land is also home to some species of predators, the biggest being the brown bear or grizzly (*Ursus arctos*), but more numerous are the smaller black bears (*Ursus americanus*). Additionally packs of wolves (*Canis lupus*) also inhabit the Basin and the mountainsides. Besides mammals and birds, the many streams and rivers support a rich population of fish species with the most numerous being the sockeye or red salmon (*Oncorhynchus nerka*). Other salmon species are Chinook or king

salmon (*Oncorhynchus tshawytscha*) and coho or silver salmon (*Oncorhynchus kisutch*). Salmon spawn in small lakes, streams and creeks and then move out into the ocean for several years. After being out in the ocean for a few years these salmon return to their spawning grounds to spawn and die. These annual runs of salmon provide an important resource basis for the people as well as animals living in the Copper River Basin. Apart from salmon species there are a few freshwater fish species living in the streams and lakes (ibid. 11).

6.2 Population

The current figure for the Ahtna population is difficult to obtain. The Copper River Census Subarea had a population of 2,735 according to the 2010 census data. Of these 2,735 about 29% were categorized as Alaska Natives or American Indian. The population shows a decrease of 1% compared to the census data from 1990 (ADF&G 2017: 2f.).

Ahtna Inc. the regional corporation of the Ahtna people has currently around 2,000 shareholders (Ahtna Inc. 2018a) after extending the stock ownership to Ahtna that were born after December 18th, 1971. There are of course Ahtna who have moved outside the Copper River to Anchorage, Fairbanks or other places in the State as well as outside of the State, which do not appear in the census. The exact number of Ahtna living in the Copper River cannot be presented here but a percentage share of about 30% being Alaska Native indicates that the Copper River Census Subarea still has a high population of Alaska Natives, the majority of them being Ahtna. Davin Holen writes concerning the population of the Ahtna:

Until the 1960's the Ahtna' population was never reported to be much higher than 500 people [...] The Ahtna' population began to recover around 1970 at the same time that more Euro-Americans began to move into the Copper River Basin. Today there are almost 3,000 people who call the Copper River Basin home, of whom around 650 are Ahtna'. (Holen 2010: 14)

Another important fact when it comes to population, especially in connection with subsistence and outdoor activities, is the population of the surrounding areas. This has been made explicit by the Alaska Department of Fish and Game (2017a) in a report concerned with the Copper River CSH. The population of areas connected by road to the Copper River Basin (or GMU 13) has increased 43% in the years 1990 to 2010 from 399,051 to 570,920 (ibid.). Table 4 and Figure 7 provided by ADF&G (2017a) present this trend very clear. The population of areas connected by road has

increased consistently over the last decades, with Anchorage having the greatest increase. In 1960 there were 111,857 people living in the road-connected areas, in 2010 there were already 549,585 people. This increase in population had major effects on the hunting and fishing situation in the Copper River as well as on other aspects of life. This will be shown in the analysis of the CSH.

	1960	1970	1980	1990	2000	2010	2015
Anchorage Municipality	54,076	124,542	174,431	226,338	260,283	291,826	298,908
Copper River Census Subarea	2,193	1,852	2,721	2,763	3,231	2,955	2,735
Denali Borough	182	670	1,000	1,764	1,893	1,826	1,781
Fairbanks-North Star Borough	42,863	45,864	53,983	77,720	82,840	97,581	98,645
Kenai Peninsula Borough	9,053	16,586	25,282	40,802	49,691	55,400	57,763
Matanuska-Susitna Borough	2,330	6,509	17,816	39,683	59,322	88,995	100,178
Southeast Fairbanks Census Area	605	4,179	5,676	5,913	6,174	7,026	6,899
Valdez	555	1,005	3,079	4,068	4,036	3,976	4,011
Total	111,857	201,207	283,988	399,051	467,470	549,585	570,920

Sources: Rollins 1978; <http://live.laborstats.alaska.gov/pop/estimates/pub/chap4.pdf>

Table 4. Population of areas connected by road to GMU 13, 1960-2015, ADF&G 2017a: 34

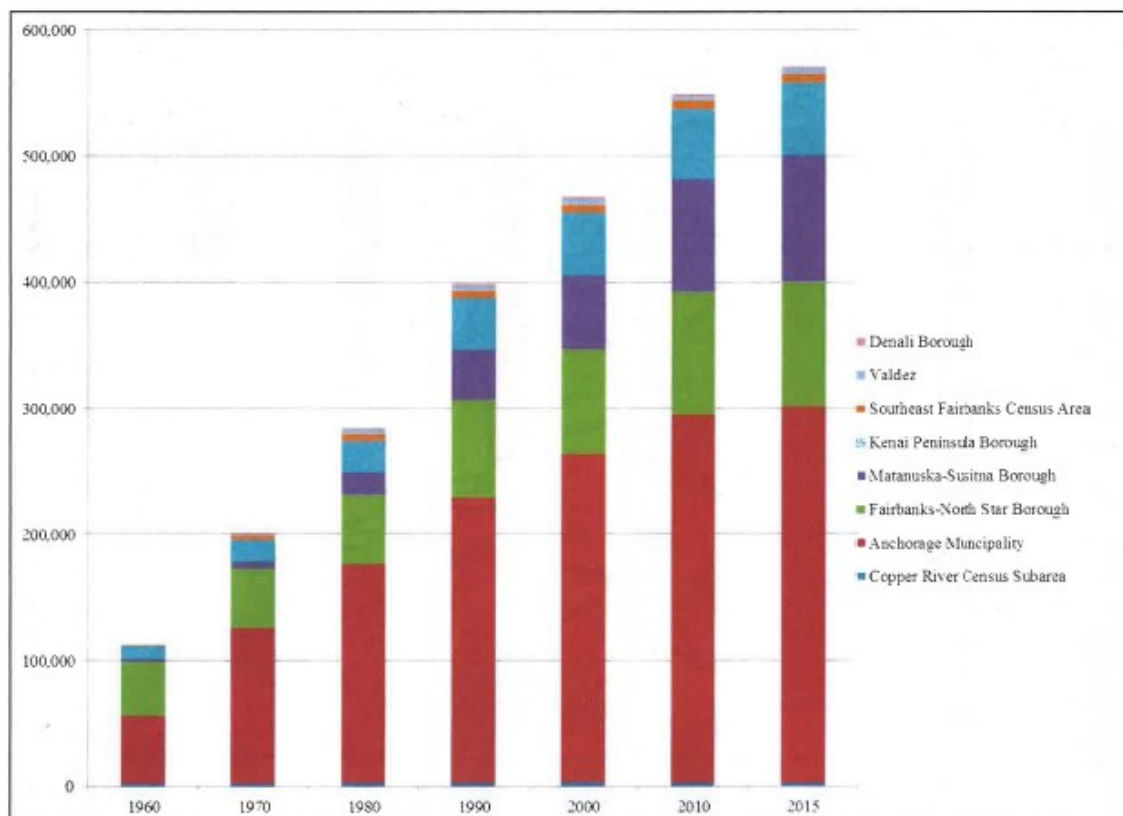


Figure 7. Population of areas connected by road to GMU 13, 1960-2011, ADF&G 2017a: 47

6.3 Social and political organization

As mentioned above, the Ahtna people “never formed a tribal political unit, nor have they ever held a council of all Ahtna chiefs” (DeLaguna/McClellan 1981: 641). This is an important point considering the current efforts of the Ahtna to form group wide representation bodies like the AITRC (Ahtna Inter Tribal Resource Commission).

Before becoming sedentary in villages due to economic and political developments in the end of the 19th and during the 20th century, the Ahtna lived in regional autonomous bands moving from winter to summer camp and hunting camp to fishing camp depending on the availability of resources. A major incentive for becoming sedentary has been the compulsory school attendance as well the economic situation of dependence on cash-income. The regional bands consisted mostly of several families extending from a few people to mostly not more than 100 members. The social organization of the Ahtna is based on matrilineal descent, involving two moieties (Crow and Seagull) each being separated into five or six clans (Holen 2010: 14).

The Ahtna society was characterized by matrilineal exogamous phratries. Each child was born to a clan, the same as that of his mother and his mother’s mother. During childhood the child was raised in his mother’s household and his entire upbringing was supervised by his older clanmates, such as his mother’s brothers and sisters. Finally when they reached a time to marry, the young person was required to marry a person belonging to a clan other than his own. Preferably he married into the father’s clan. (Reckord 1983: 32)

Cross-cousin marriage was the preferred marriage strategy and the Ahtna kinship terms as well as the clan and moiety system reflect this. Each regional band had a specific territory that they used for hunting, fishing and gathering. The territory was not used by other regional bands except for some overlapping of territories at the boundaries. The territory and its richness of subsistence resources had important implications for the local band:

The location of all types of settlements (winter villages, fish camps, hunting camps, and overnight camps) were determined by the availability of resources and the corresponding needs of a local group. The richness of each group’s territory determined the group’s place in Ahtna society and its size and strength. (ibid. 25)

According to Davin Holen group membership within the ‘larger Atna’ world’ can be traced on three different levels: regional band, local band, and task group.

The regional band utilizes a specified geographic territory for subsistence. Local bands, which comprise the regional band, come together at certain periods of the year. They work together during major subsistence harvesting periods such as when salmon are running or caribou are migrating. De Laguna and McClellan (1981) list eight regional band territories for the Ahtna' with some overlap of Ahtna' dialects [...] The local band is circumscribed to a particular area within the regional territory overlapping with other neighboring bands and sharing some resources. It is usually a grouping of close kinsman with greater cohesion than regional band. Within a regional band's territory, however, local bands maintain their own subsistence use area. The third and smallest unit is the task group. This is a group of related kin working together on a specific task such as a caribou corral or a fish camp. (Holen 2010: 16)

The Ahtna settlements (winter camp, fish camp, summer camp) have been more numerous in former times and also much smaller than modern Ahtna villages. DeLaguna and McClellan report that a maximum of nine multifamily houses per settlement was common. Until the beginning of the 20th century the houses were much bigger and hosted more than one nuclear family. (DeLaguna/McClellan 1981: 644). Concerning the political organization of the Ahtna they did never form a political unit that included all of the Ahtna bands, but every major settlement had a chief.

Leadership in aboriginal society, like so many other things, was based almost completely on one's ability to take advantage of the surrounding environment and to lead others on the subsistence quest, while searching for copper, hunting for moose, or organizing trading parties to places outside of the traditional territory. A denae, or big-man was fully recognized as such if he had young unmarried men who worked for him. (Reckord 1983: 34)

Leadership in Ahtna society as Holly Reckord observed was not based on descent and a son did not automatically succeed his father as chief. Leadership was based on economic capacity and the skill to gather young unmarried men around him that he could put to work. This was not done by force but by persuasive power. The economic surplus that a leader gathered was distributed to the group on various occasions to further consolidate his position and to balance out differences in the subsistence success. But DeLaguna and McClellan point out that the relatives of the chief did obtain a position in the society that can be labeled as aristocracy:

Chiefs, their wives, children, and other close relatives formed an aristocracy distinguished by fine clothing, the best food, and seats of honor in the big house on formal occasions, when 'lines of caste were rigidly drawn.' (De Laguna/McClellan 1981: 656)

Apart from the internal differentiation that was displayed at formal events, the role of the chief or denae (also named qasqe' or spelled dene) seemed to be less political and concerned more with economic and moral problems. "The chief was responsible for feeding his people, for delivering moral lectures, for enforcing the traditional 'law' within his own settlement, and for defending his people in legitimate grievances involving other groups" (ibid. 656). Today chiefs or denae do not have the economic, political and judicial importance they had in the past, but particular chiefs can still exercise their influence. The chief system as well as the social organization in general that prevailed probably for several hundred years has been permanently altered with the enactment of ANCSA in 1971. All land claims by Ahtna groups have been accumulated and placed under administration by Ahtna Incorporated, the regional corporation founded by ANCSA for the Ahtna people. 1,770,000 acres (7,160km²) was the total entitlement that the Ahtna people could obtain. Apart from the land entitlement Ahtna received a share of the almost 1 billion dollars that were distributed among the 13 Native corporations. The land allocated through ANCSA to the Ahtna comprises only a small portion of the traditional territory used by the Ahtna bands, as can be seen on the following map (Figure 8).

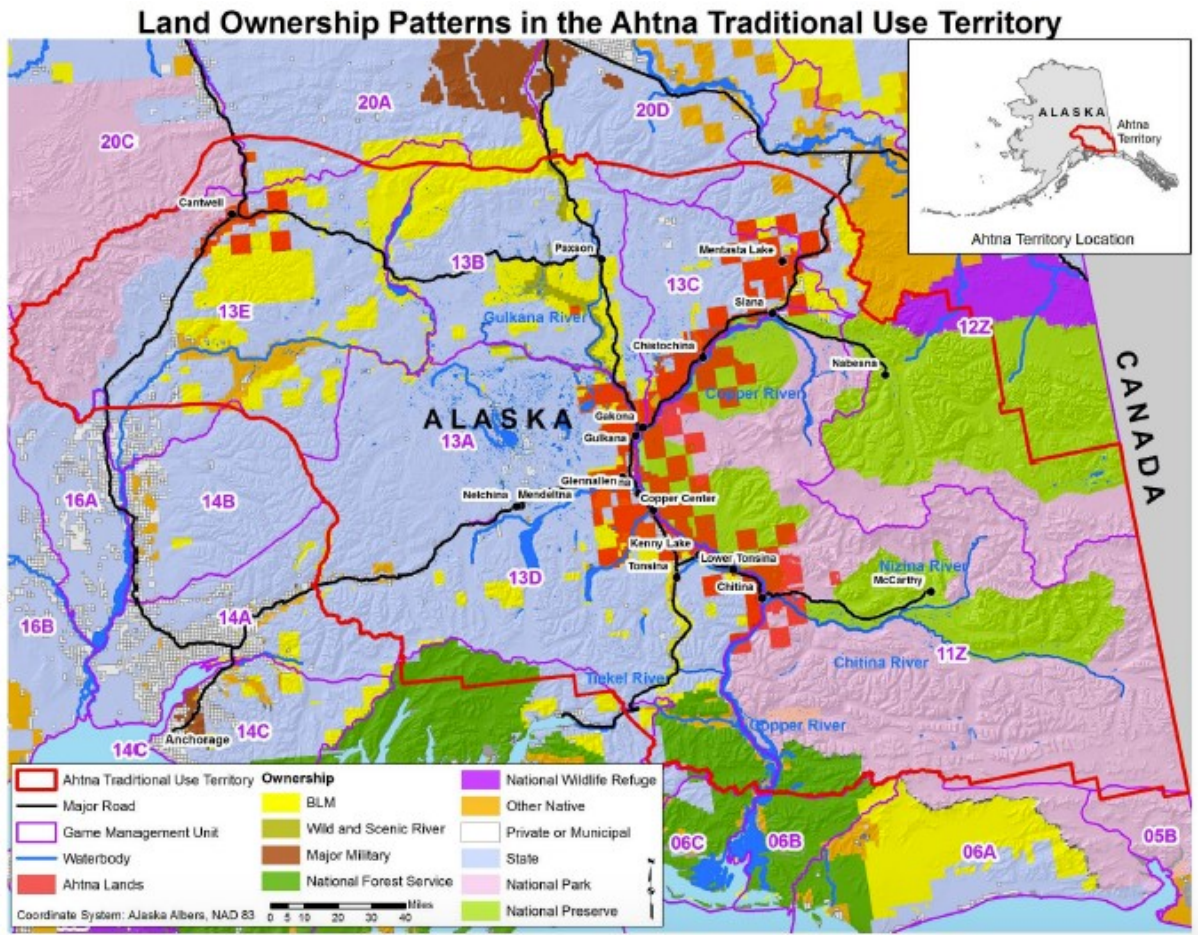


Figure 8. Land ownership patterns in the Ahtna traditional use territory, Ahtna Inc. 2017

The red squares, the Ahtna lands, are located around the eight villages and along the Copper River. The red line displays the traditional Ahtna territory. The blue parts are State lands and the green and light pink parts on the right side of the Copper River are the National Park and Preserve lands. The Wrangell and St. Elias National Park and Preserve were created with the enactment of ANILCA in 1980 and are today managed by the federal government due to the incompliance of the State with the rural subsistence preference of ANILCA. The yellow parts are Bureau of Land Management land, a federal agency. Game Management Unit 13, which comprises the most part of Ahtna traditional territory, is mostly under State jurisdiction. It is important to note that also the Ahtna lands are under State jurisdiction and management.

In addition to the creation of the regional corporation Ahtna Inc., eight village corporations have been formed by ANCSA for the eight Ahtna villages. They received the right to the surface estate of the land, while Ahtna Inc. received also the subsurface estate of the village corporation lands. In 1980 seven of the eight village

corporations merged with Ahtna Inc., only Chitina Native Corporation chose not to do so. The conveyance of land titles to the Ahtna by the State is still not completed more than 40 years after the enactment of ANCSA.

Originally Ahtna Inc. enrolled 1,074 shareholders following the passage of ANCSA. Every member of Ahtna born prior to 1971 became a shareholder of Ahtna Inc. In 2008 Ahtna Inc. decided to extend stock ownership to members of Ahtna born after December 18, 1971 (Ahtna Inc. 2018a). Until today the Ahtna Inc. shares cannot be legally sold or traded at the stock market but stay exclusively with the Ahtna people. The corporation distributes an annual dividend to the shareholders. The Ahtna Inc. Board of Directors consists of Ahtna people; the current President of Ahtna Inc. is Michelle Anderson, an Ahtna shareholder born and raised in the Ahtna region. Some of the senior managers of Ahtna Inc. are also shareholders. Ahtna Inc. holds several subsidiary companies that are engaged in a wide variety of activities like construction work, facility service, transportation, logistic services, and pipeline maintenance. The companies are operating in Alaska, but the majority of activities are either in the lower 48 States or outside of the United States. Ahtna Inc. currently employs 1,300 people of whom 300 are working in Alaska (Ahtna Inc. 2018b).

At the time of my fieldwork in 2017 two important projects were on the agenda for Ahtna Inc. to improve the economic situation of the Ahtna people. One was a tourist lodge located at the entrance of Denali National Park close to Cantwell, the other was the exploration of natural gas deposits on the Ahtna lands.

Besides the creation of employment possibilities, Ahtna Inc. is also engaged in the regulation and management of subsistence hunting and fishing activities on the traditional Ahtna territory by State and Federal agencies. Ahtna Inc. supports and unifies the efforts by the Ahtna people to become a partner with equal rights in the management of subsistence resources on the Ahtna lands and their traditional territory.

Ahtna Inc., Chitina Village Corporation and the eight recognized tribes formed the Ahtna Intertribal Resource Commission (AITRC) and in 2016 they signed a memorandum of agreement with the Department of the Interior for a co-management project on Ahtna traditional territory. I will provide more details to the AITRC and the agreement in the following sections that deals specifically with the Community Subsistence Hunt.

On the side of the current political and social organization of the Ahtna people there are three more organizations involved: the Copper River Native Association, Mount Sanford Tribal Consortium and the Chitina Village Council. Davin Holen describes their role and purpose:

These three non-profit socio-political organizations [...] are modern versions of traditional political systems that are a product of their history and interaction with outsiders including other Athabascan groups in the precontact period and more recently Euro-Americans. The groups are independent and rarely work together except under the leadership of the for-profit corporation, Ahtna Inc. These three organizations now maintain the health, wellness, and environmental programs for their members while working with Ahtna Inc. in a limited capacity. These programs are funded by grants, primarily from government agencies. (Holen 2010: 30)

The Copper River Native Association (CRNA), also named Ahtna Tene Nene', as well as the other two organizations, provide important services and resources to the people living in the Copper River Basin. Amongst others these include health care (primary, dental, behavioral), elder services, and child & youth development. The CRNA recently opened the Robert Marshall Building on the Richardson Highway close to Copper Center to unite all the provided services in one location. Ahtna Tene Nene' submitted the proposals in the name of the Ahtna people to the Board of Game meeting in Glennallen 2017.

Before dealing with the economic aspects of Ahtna life in the next section, there is one additional fact that is tightly linked to social and political organization as well as to the Ahtna culture and society as a whole. The Ahtna language is currently in great danger of becoming extinct. According to the University of Fairbanks Alaska Native Language Center out of 650 Ahtna people, only 25 can fluently use the Ahtna language. They have classified Ahtna language as moribund. Efforts to preserve and encourage the youth to learn the language are desperately needed, as language is a key factor in maintaining a distinct culture and social structure (Alaska Native Language Center 2018).

6.4 Economy and subsistence

The title of this section can be a bit misleading as subsistence generally is a part of the economy. Subsistence includes the activities that are related to the production of food and other necessities of daily life like clothing and is set apart from the cash-economy in theoretical considerations but highly intertwined in the reality of the daily

lives of a lot of people living in Alaska and other places. The general economic situation in rural Alaska with the mixed-economy of cash income and subsistence resources has been covered in Chapter 5. This situation applies also for the Ahtna region and people are engaged in a variety of economic activities to secure themselves and their families a good life, whatever that means for each individually. As previously stressed employment opportunities are scarce in rural Alaska in general and in the Copper River Basin in particular. This is one of the reasons why subsistence resources are vital to the overall income of households and individuals. Before looking at the diverse range of subsistence activities and resources by the Ahtna, I will focus on the cash income first.

In comparison to other regions in Alaska, the Copper River Basin and the Ahtna traditional territory lacks rich deposits of exploitable resources like oil, minerals or timber. There is neither a big extractive industry that provides a lot of working opportunities, nor industrial manufacturing companies that settled in the region. Ahtna Inc. is currently exploring the possibility of extracting natural gas on their lands, but the assessment of the possible deposits has not been completed to date. The industrial development by Ahtna Inc. in the region can also lead to tensions within the community and Ahtna society as a whole as Holly Reckord already remarked in 1983:

ANCSA, it has been pointed out many times, is an organization of Native people which is designed as a white organization, an economic corporation in a legal sense. Even the corporation will compete with the subsistence-oriented Native for use of certain parts of the region. The corporation must make money if it is to survive. It must develop an economic basis within the region so that money can be made on the great amount of land it owns and on which it must pay taxes. (Reckord 1983: 57)

It will be important for Ahtna Inc. and the Ahtna people to find a balance between industrial development, economic growth and subsistence. A quick exploitation of all the available natural resources will not necessarily yield positive developments for the Ahtna people in a long-term perspective.

Employment can be found in sectors like tourism, retail, transportation, construction, guiding, and pipeline maintenance as well as in the administration of the local villages and other government agencies. As already mentioned above, Ahtna Inc. employs about 300 people in Alaska, but how many of them are Ahtna is not known. Ahtna Inc. is engaged with their subsidiaries in all the stated sectors of the economy. There is not enough employment within the Copper River Basin to meet the demand

for work. Migration to the economic centers like Fairbanks and Anchorage or even outside the State is sometimes the only way to find work.

The unemployment rate for Alaska in 2016 had an annual average of 6.9 percent. The rate for the Valdez-Cordova Census Area was almost two percent higher at 8.6 percent (Department of Labor and Workforce Development, Alaska). In a report published in 2014 by the Department of Labor and Workforce Development, the unemployment rate for the Copper River Basin was estimated at around 7 percent. Anchorage in comparison had an unemployment rate of roughly 5 percent. (Sandberg/Hunsinger 2014: 9).

The median household income for the years 2012-2016 was \$82,511 for the Valdez-Cordova Census Area. The per capita income also for the years 2012-2016 was \$35,457. For the same period the median household income for total Alaska was \$74,444 and the per capita income \$34,191, according to the United States Census Bureau (U.S. Census Bureau 2018). These figures do not provide a precise assessment of the situation in the Copper River Basin as the Valdez-Cordova Census Area encompasses other communities and cities like Valdez with a differing economic situation. More accurate and local figures are difficult to obtain. The next table (Table 5), provided by the Department of Labor and Workforce Development in 2014, estimates the household and per capita income for the Copper River Basin for the period 2008-2012 and compares them to the figures for Anchorage and Valdez. According to the report the median household income for the years 2008-2012 was \$50,060 and the median per capita income was \$24,540. These figures differ quite substantial from the figures for the Valdez-Cordova Census Area stated above. The table gives also estimated figures about the government welfare payments like social security payments. An estimated 26 percent of the households in the Copper River Basin were dependent on income from the social security payments. This figure is quite high compared to the 9 percent of households in the city of Valdez accessing social security funds.

	Copper River Basin		Anchorage		Valdez	
	Estimate	Margin of error	Estimate	Margin of error	Estimate	Margin of error
Total households	1,189	±132	105,517	±758	1,458	±147
Households with earnings	84%	±5%	89%	±1%	94%	±5%
Mean earnings	\$51,814	±\$5,958	\$90,237	±\$2,032	\$86,357	±\$10,598
Households with Social Security	26%	±6%	17%	±1%	9%	±5%
Mean Social Security income	\$14,931	±\$2,862	\$15,439	±\$463	\$17,495	±\$6,556
Households with retirement income	21%	±5%	16%	±1%	13%	±6%
Mean retirement income	\$26,820	±\$6,893	\$30,200	±\$2,028	\$26,442	±\$6,786
Households with Supplemental Security Income	5%	±3%	4%	0	3%	±4%
Mean Supplemental Security Income	\$7,993	±\$1,670	\$9,083	±\$700	\$4,790	±\$180
Households with cash public assistance income	5%	±4%	6%	±1%	2%	±2%
Mean cash public assistance income	\$2,625	±\$1,112	\$3,832	±\$238	\$1,918	±\$1,763
Households with food stamp/SNAP* benefits	14%	±6%	8%	±1%	3%	±3%
Median household income	\$50,060	±\$8,242	\$76,495	±\$1,213	\$80,476	±\$20,152
Per capita income	\$24,540	±\$2,552	\$36,145	±\$756	\$36,609	±\$6,029

Note: All earnings and income are in 2012 dollars.
*SNAP stands for Supplemental Nutrition Assistance Program.
Sources: U.S. Census Bureau, 2008-2012 American Community Survey; and Alaska Department of Labor and Workforce Development, Research and Analysis Section

Table 5. Estimated earnings and income for the Copper River Basin in comparison with Anchorage and Valdez, 2008-2012, Sandberg/Husinger 2014: 8

Although the costs for housing are not as high as in other areas like Anchorage or Fairbanks, the utility costs for heating, water, sewage and garbage disposal amongst others are significantly higher. Transportation costs are also higher than in Anchorage due to higher fuel prices and maintenance costs (Sandberg/Husinger 2014: 9). The prices for food and other necessities are only slightly higher than in Anchorage and much cheaper compared to rural regions that do not have a road connection. In some instances the road connection turns out to be of advantage for the local people.

It is important to note though that the figures presented here have to be interpreted with caution because the figures represent median incomes.

In addition to the cash income from employment and social transfer payments by the government two dividends contribute to the household income of the Ahtna people: the Alaska Permanent Fund dividend and the Ahtna Inc. dividend. The Alaska Permanent Fund was established in the 1970's for the administration of the profits from the extractive oil industry and to redistribute the profits to Alaska residents. Since 1976 the Alaska Permanent Fund paid an annual dividend to Alaska residents contributing to the incomes of Alaskans all over the State. In 2016 the distributed dividend was \$1,022 and in 2017 \$1,100. On an individual basis the income from the dividend only appears of minor importance but on the household level the combined dividend can be substantial (Alaska Permanent Fund 2018).

The dividend paid to shareholders by Ahtna Inc. is exclusive for Ahtna people and depends on the performance of Ahtna Inc. In 2016 the dividend amounted to \$5.75 per share and in 2017 to \$4.92 per share. Important to note is that most shareholders enrolled with a minimum of 100 shares. Like the Alaska Permanent Fund dividend, the Ahtna Inc. dividend combined together on the household level contributes to the income significantly (Ahtna Inc. 2018c).

Another more recent development in the Copper River Basin is the aging population. "As of the 2010 Census its median age was 42.2 considerably older than the statewide median of 33.8" (Sandberg/Husinger 2014: 7). This is partly due to the migration of young people from the area to the urban centers, leaving the older people in the villages with a higher dependence on transfer payments, as it is even more difficult to find employment being 50 years or older. This circumstance compounds problems concerning access to wild food resources as the elderly people in the villages have a much higher appreciation and cultural connection to the foods they grew up with and enjoyed all their life. At the same time a part of the elderly people cannot engage in subsistence activities and harvest anymore due to their physical condition. That is why sharing and redistribution of resources was and still is an integral part in the social life of the Ahtna people. Only when the young can maintain their access and opportunity for harvesting subsistence resources, the system of sharing and redistribution can be kept alive. This will be shown in the case study of the CSH.

After focusing on the cash sector of the economy, I will now review the subsistence part of the economy inside the Copper River Basin and the Ahtna territory. As it would go beyond the scope of this thesis to go into detail in the past and current aspects of subsistence, in this section I will only highlight some of the important features and facts about the subsistence activities of the Ahtna people. Extensive ethnographic research will be referenced that deals in greater detail with aspects of subsistence in former times as well as with the current situation.

First it is crucial to note that subsistence is more than economy. It is an integral part of the social system affecting every aspect of life in former times and still affecting a substantial part of the lives of the people today. A rich culture has evolved around the subsistence activities including rituals, ceremonies, rules and laws as well as specific technologies and practices. The Ahtna people have comprehensive knowledge of the

surrounding nature they live in and they use a large variety of animal species, plants and other resources. A study by the Division of Subsistence from ADF&G conducted in selected communities in the Copper River Basin in 2013 lists more than 150 animal species and plants that were known and used by the communities for food, shelter, clothing, firewood as well as artworks (see Appendix E.).

The table below (Table 6), also from the mentioned study by the Division of Subsistence of 2013, gives some important figures about the quantity of harvested resources and the number of used resources. It also makes explicitly clear that a high percentage of resources were harvested by only a minor percentage of households. The top 25 percent of households took 75 percent of the total harvest. This fact has been established by subsistence research in Alaska through the last decades and termed 'super-household,' linking higher cash incomes with higher harvest levels (Wolfe et al. 2010).

Subsistence research across Alaska has established that household harvest levels are strongly associated with higher household incomes. For example, Magdanz et al (2016) found that household level harvests increase by 14% with every 10% increase in household income. A major reason for this is that the higher income households can afford more equipment and fuel for harvest pursuits (Wolfe 1986; Wolfe et al. 2010). These 'super-households' specialise in hunting, fishing and gathering and then usually share the rewards with relatives and lower harvesters" (Van Lanen 2017: 265)

The previously mentioned study from 2013 encompasses all the Ahtna villages except Cantwell that is located closer to Denali National Park and is not part of the Copper River Basin. The per capita harvest in the study years amounted to 159.8 pounds (72.1 kg) of usable weight. The figure for the household level is 408.4 pounds (185 kg). The table also gives information about the used resources per household, the figure for the study years being 10.8.

Category	
Demography	
Population	2,810.9
Percentage of population that is Alaska Native	30%
Percentage of household heads born in Alaska	31%
Average length of residency of household heads (year)	21.6
Cash economy	
Average number of months employed	9.4
Percentage of employed adults working year-round	57%
Percentage of income from sources other than employment ^b	20%
Average household income ^{a, b}	\$52,863
Per capita income ^{a, b}	\$20,691
Resource harvest and use	
Per capita harvest, pounds usable weight	159.8
Average household harvest, pounds usable weight	408.4
Number of resources used by 50% or more households	4
Average number of resources used per household	10.8
Average number of resources attempted to be harvested per household	9.0
Average number of resources harvested per household	7.5
Average number of resources received per household	4.7
Average number of resources given away per household	3.5
Percentage of total harvest taken by top 25% ranked households	75%
Percentage of households that harvested 70% of harvest	22%
Per capita harvest by lowest ranked 50% of households	7.2
Percentage of total harvest taken by lowest ranked 50% of harvesting households	5%
Average number of resources used by lowest ranked 50% of households	7.3
Average number of resources used by top 25% ranked households	16.9

Source ADF&G Division of Subsistence household surveys, 2010–2014.

Note Communities included in this estimate: Chistochina (2009); Copper Center, Mentasta Lake, Mentasta Pass, Slana (2010); Chitina, Gakona, Kenny Lake/Willow Creek, McCarthy (2012); Glennallen, Gulkana, Lake Louise, Tazlina, Tonsina, Mendeltna, Paxson, Nelchina, Tolsona (2013).

a. Includes income from sources other than employment.

b. Estimate does not include Chistochina (2009) because of insufficient data.

Table 6. Resource harvest and use by selected communities in the Copper River Basin 2010-2014, Holen/Hazell/Zimpelman 2015: 558

The diagram (Figure 9), again from the same study, shows the shares of the different resources that make up the total harvest. 58 percent of the harvested resources is salmon, 25 percent are large land mammals like caribou and moose. The remaining 17 percent are divided between non-salmon fish species, small land mammals as well as birds and plants (ibid. 559). Salmon definitely dominates the subsistence harvest by the communities in the Copper River Basin and therefore also for Ahtna people. It is the single most important resource for the Ahtna and their diets depend heavily on abundant salmon runs. For more information about the use of salmon by the Ahtna and the conflicts and competition over this resource see Davin Holen's study from 2010 about the political ecology of the Copper River fishery or the

Technical Paper No. 270 prepared by William E. Simeone and James Kari in 2002, Traditional Knowledge and Fishing Practices of the Ahtna of the Copper River, Alaska.

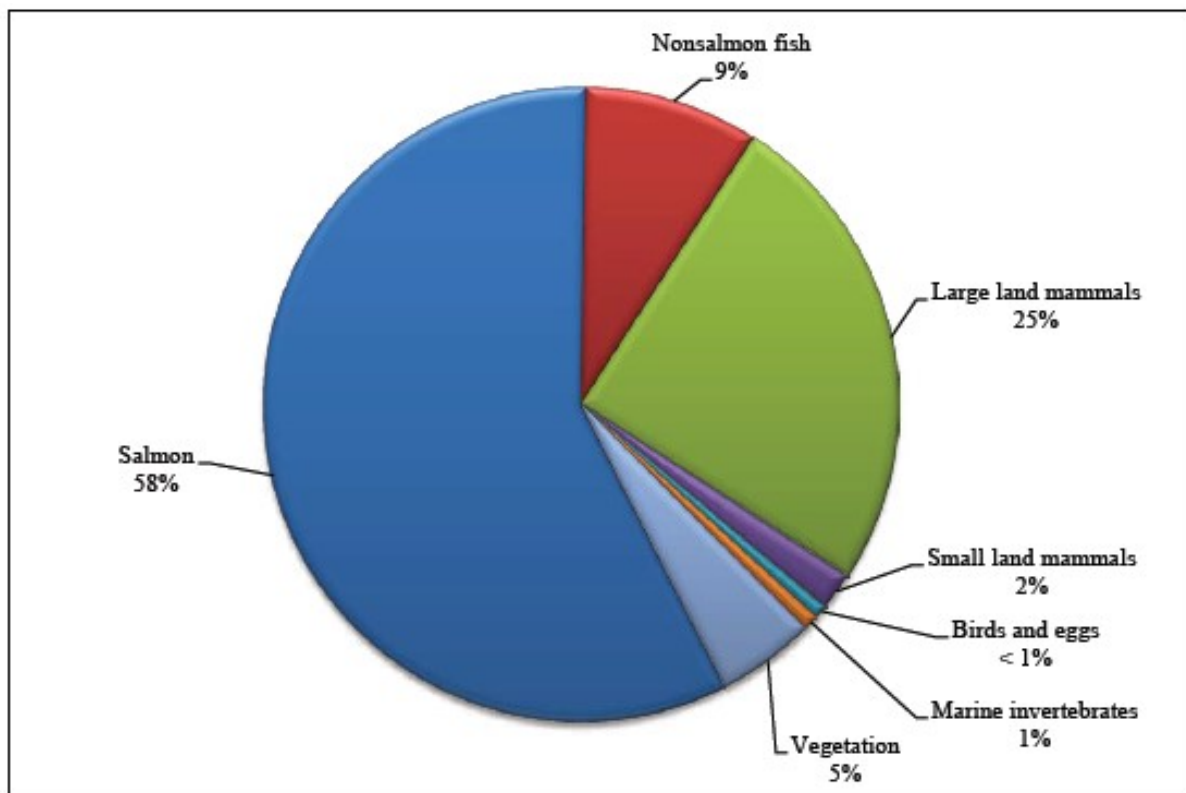


Figure 9. Composition of combined harvest by resource category for the Copper River Basin communities, 2010-2014, Holen/Hazell/Zimpelman 2015: 558

The technology used and the way people harvest subsistence resources have been altered quite heavily in last century. William Simeone describes hunting technologies for large mammals before firearms and transportation vehicles were used:

The Ahtna developed efficient methods to harvest large amounts of game with minimal effort. Before firearms became prevalent most game animals were harvested with snares and dispatched with bows and arrow, spears or knives, and then firearms [...] Moose [...] were caught either in individual snares set across a trail or in snares set in long, linear game fences. A moose fence might be 2 or more miles long. [...] Moose were also hunted during winter using snowshoes. According to Ahtna elders, a man who was good on snowshoes could run down a moose in three or four hours. (Simeone 2006: 33).

The introduction of rifles, snow machines, all-terrain vehicles and other technological advancements has linked subsistence activities tightly to the cash sector of the economy as already mentioned in Chapter 5.

All the required tools for subsistence hunting and fishing today depend on cash income to afford and maintain them. The relationship between subsistence, cash-economy and new technologies has been termed 'techno-economic-differentiation' by Pertti Pelto in 1973 (1987) in a study over the introduction of snowmobiles in Lapland, Finland.

What I want to focus on in using this slightly awkward but expressive terminology is that, for any socio-physical environment, adaptation is effected by means of material things—technological inventories—which are the items of equipment that each individual or household must own or have access to in order to accomplish their food-getting and other subsistence activities. The ownership and utilization of these technological items is closely intertwined with the less material aspects of economic systems—the occupations, the cash reserves, the distributive connections—in terms of which some families and individuals (and other units) are relatively successful in fulfilling their material needs while others experience varying degrees of deprivation. (Pelto 1987: 169)

New technologies and circumstances need adaption by the people and not everybody is capable of accomplishing this adaptation in the same way.

This connection between subsistence and cash income is further intensified by the fact that most people cannot go on extensive hunting trips for several days or weeks like in former times due to employment. Hunting and fishing trips therefore have to be much shorter and executed more efficiently to obtain a successful harvest. The relationship between subsistence and cash-income becomes more uncertain, as hunting without having the necessary resources becomes more difficult. These aspects of subsistence will be discussed further in the next section on the Community Subsistence Hunt in the Copper River Basin. For further reading about the Ahtna culture and subsistence the already mentioned studies are recommended: Davin Holen (2010), Holen/Hazell/Zimpelman (2015), William E. Simeone and James Kari's Technical Paper No. 270 (2002) as well as the research by Reckord (1983). DeLaguna and McClellan (1981) and Simeone (2006).

The overall economic situation in the Copper River Basin must be assessed as difficult as was shown throughout the preceding pages. The lack of exploitable resources and industrial manufacturing leaves the people with few opportunities for cash-income. The two close urban centers of Anchorage and Fairbanks absorb most of the economic capacity of the region and outmigration especially of the young

people is high. The difficult economic situation is also reflected by high rates of alcohol and drug addiction, suicide as well as domestic violence and crime that can be found in the Copper River Basin and in Alaska. With quite some foresight Holly Reckord wrote in 1983:

The problems of the past still echo in the minds and thoughts of the Native people. Some depend greatly on subsistence resources, in particular fish, berries, and some game. These people are often unemployable for various reasons, such as their age, a lack of proficiency in reading or speaking English, ill health, alcoholism or the isolation of their home village. The continued dependence of some people on subsistence resources should not be underestimated, and any decisions made about subsistence should make provisions for these people, whose only choice outside of subsistence would be welfare. (57)

The kind of provisions from the government and the effects of these on the current situation of Ahtna people will be discussed in the next section, the case study of the Community Subsistence Hunt.

6.5 Copper Basin Community Subsistence Hunt

This section will deal in detail with the CSH and the impacts on the Ahtna people. Firstly, the regulatory history concerning moose in the CSH-area will be highlighted. Information about the moose resource will be provided before describing the BOG meeting in Glennallen and the differing perspectives on the regulations (Ahtna/rural/urban) with statements of the different stakeholders from interviews and public testimony. Furthermore, I will discuss the efforts of the Ahtna people for a co-management agreement with the State and the federal government as well as the creation of the Ahtna Inter Tribal Resource Commission (AITRC).

6.5.1 Regulatory history for moose in the CSH-area

The Community Subsistence Hunt area in the Copper River encompasses all of Game Management Unit 13 and 11 as well as small parts of GMU 12 as can be seen on the following figure:

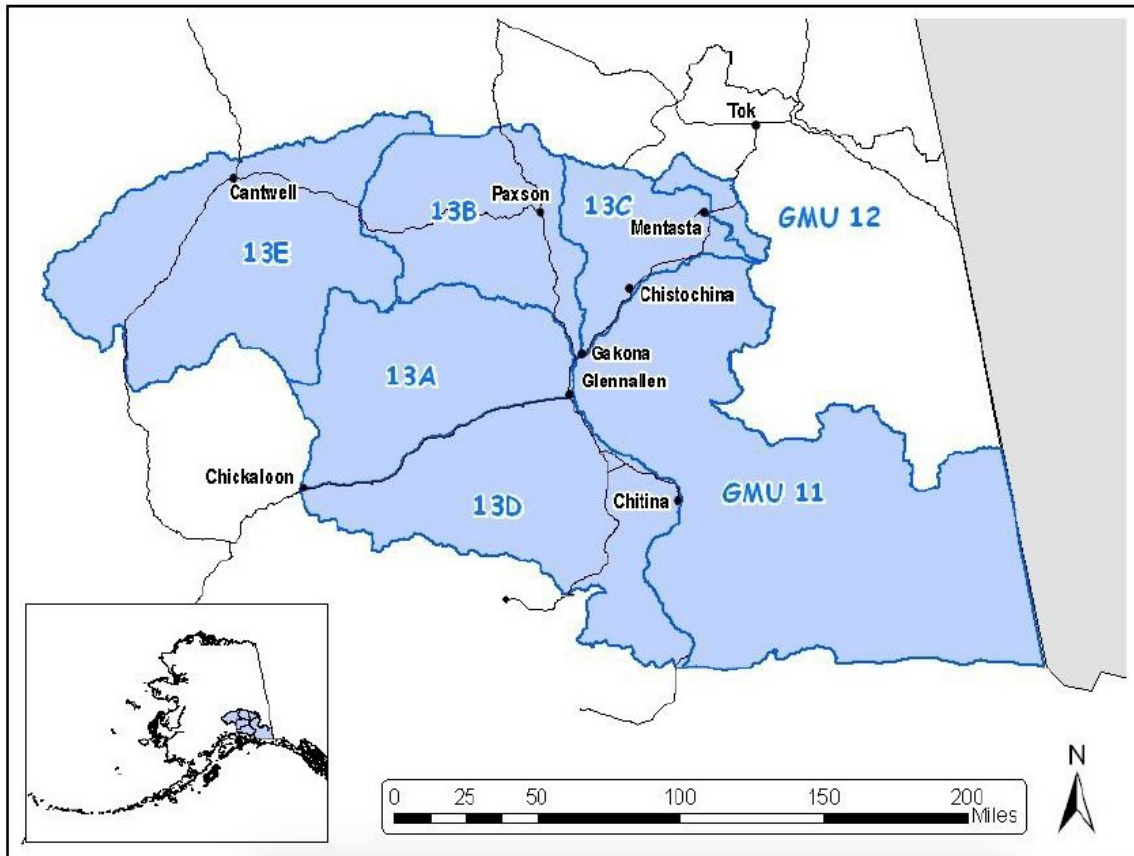


Figure 10. Copper Basin Community Subsistence Hunt Area, ADF&G 2017c.

The focus will be on these two units (11 and 13) for the regulatory history.

The first restrictions on hunting big game, like moose, in the Copper Basin were introduced by federal authorities in the 1920's due to increasing population in the road connected growing urban centers Fairbanks and Anchorage. According to Ahtna oral reports, moose were scarce in the Copper River Basin in the 1930's and 1940's (Simeone 2006: 21).

From the 1960's on, soon after statehood was adopted, the State implemented two hunting seasons for moose in GMU 13. The first took place from late August to late September and the second in November. In 1973 the November season was eliminated in response to the growing harvests and declining moose numbers. In 1975 the season opening was changed to September 1 and the closing was on September 20. This season remained unchanged until 1987. In the 1980's additional

restrictions in the form of antler size requirements were introduced (ADF&G 2017a: 4).

In summary, beginning in the early 1970s, the BOG responded to managers' observations that hunting pressure was mounting on a diminished number of moose, with extra pressure coming from outside the unit, and adopted a series of increasingly shorter seasons and antler size bag limits for moose hunting in GMU 13. Competition among hunters for the available moose in GMU 13 continued to be high. (ibid.)

With the introduction of the first subsistence law in 1978, the BOG was required to adopt "regulations permitting subsistence uses unless such regulations jeopardized the maintenance of the resource on a sustained-yield basis" (ibid.).

It was not until 1983 that the BOG changed hunting regulations in GMU 13 due to the decision in a court case that stated that the BOG failed to accommodate subsistence needs in the present regulations. The BOG adopted a proposal by Ahtna Inc. establishing a subsistence drawing permit hunt with 100 available permits with a one bull bag limit. Further, the proposal included the requirement of residence within GMU 13 in order to apply for a permit. The BOG adopted this requirement in addition to allowing only one person per household to apply for a permit. The BOG also eased the bag limit by allowing the taking of 'any bull' and dropping the 36-inch or greater antler size restriction. These regulations were in effect for the years 1983, 1984 and 1985. A second subsistence law in 1986 replaced the drawing permit hunt with a subsistence registration hunt. The bag limit was one bull moose by registration permit and an unlimited number of permits was available (ibid. 6).

The second subsistence law from 1986 established the rural subsistence preference as required by ANILCA and the years 1983 to 1989 were marked by the intention of the BOG to accommodate local subsistence needs. These provisions are also reflected by increased harvest success rates from local hunters and increased food production during these years (ibid.).

In 1989, the Alaska Supreme Court's decision in McDowell vs. State of Alaska removed the rural preference in state law, making all Alaska residents eligible to participate in subsistence hunting. The following years were characterized by uncertainty concerning the subsistence opportunities in GMU 13 as increased hunting pressure was exerted by a growing number of hunters. The regulations became more restricted resulting in changed and shortened seasons and the elimination of the 'any bull' hunt. Due to litigation by rural residents from the village of

Kluti Kaah (Copper Center) the court ordered the BOG to establish a fall moose hunt and to determine “the portion of the harvestable surplus of moose needed to provide for subsistence uses” (ibid. 7).

In 1992 the State adopted a third subsistence law and soon afterwards the BOG established an ANS (amounts reasonably necessary for subsistence) finding of 600 moose for GMU 13 (Alaska Board of Game 1992). The steps leading to the conclusion that 600 moose were an adequate number can be read at length in the findings. They looked at a 12-year time frame (1980-1991) and determined that there were approximately 3,000 subsistence users hunting in GMU 13 with roughly 600 of them being local. With a success rate ranging between 19% and 28% for local residents and a success rate range of 19.5% and 28% for non-local hunters, the BOG concluded that “a harvest of 600 moose by approximately 3000 hunters yields a success rate of 20 percent, which is within the recent historical range” (Alaska Board of Game 1992).

In 1995 the BOG established a Tier II hunt (permits are issued according to a scoring system) with up to 150 issued permits only after another legal action initiated by Kluti Kaah residents and the Copper River Native Association. In the following years local residents have been satisfied with the available opportunity for hunting moose with the Tier II permits and there have only been some changes in the season dates. The Tier II moose hunt was in effect from 1995 through 2008 and an annual average of 1,566 permit applications were submitted (ADF&G 2017a: 9).

From 1995 through 2001, Copper Basin residents received 86% of the Tier II permits. After a change in the Tier II scoring process beginning in 2002, the percentage of Tier II permits awarded to Copper Basin residents dropped to 53% through 2007. Over the 14 years of the Tier II hunt, an annual average of 43 moose were harvested, with a range of 26 (in 1995) to 62 (in 2008). (ibid.)

The changes in the scoring system for Tier II hunts and the dropping of awarded permits to Copper Basin residents in the following years resulted in the efforts of the Ahtna and local residents to establish a community subsistence hunt. The Tier II scoring system and some problematic aspects of it will be put in focus when discussing the outcome of the BOG meeting in 2017.

In 2006 the BOG started to develop new regulations for GMU 13 based upon an interpretation of the state law “which holds that not all Alaskans are ‘subsistence

users' (ibid. 11). According to this interpretation the Board can establish regulations that require hunters to be in accordance with the traditional use pattern reflected in their findings. Because more and more permits shifted from Copper Basin residents to urban residents in the Tier II system, the BOG wanted to limit the applicant pool for GMU 13 to "those willing to conform to the community pattern of use" (ibid.). The BOG in its 2006 finding described eight criteria that defined a community-based customary and traditional pattern of use of moose and caribou in GMU 13. The eight criteria are as followed (Alaska Board of Game 2006):

Criterion 1. A long-term consistent pattern of noncommercial taking, use, and reliance on the fish stock or game population that has been established over a reasonable period of time of not less than one generation, excluding interruption by circumstances beyond the user's control, such as unavailability of the fish or game caused by migratory patterns.

Criterion 2. A pattern of taking or use recurring in specific seasons of each year.

Criterion 3. A pattern of taking or use consisting of methods and means of harvest that are characterized by efficiency and economy of effort and cost.

Criterion 4. The area in which the noncommercial long-term, and consistent pattern of taking, use, and reliance upon the fish stock or game population has been established.

Criterion 5. A means of handling, preparing, preserving, and storing fish or game that has been traditionally used by past generations, but not excluding recent technological advances where appropriate.

Criterion 6. A pattern of taking or use that includes the handing down of knowledge of fishing or hunting skills, values, and lore from generation to generation.

Criterion 7. A pattern of taking, use, and reliance where the harvest effort or products of that harvest are distributed or shared, including customary trade, barter, and gift-giving.

Criterion 8. A pattern that includes taking, use, and reliance for subsistence purposes upon a wide diversity of the fish and game resources and that provides substantial economic, cultural, social, and nutritional elements of the subsistence way of life.

The eight criteria were contrasted with other use patterns, referred to by the Board as urban and recreational, and in October 2006 the BOG adopted requirements for GMU 13 that were in line with the new findings of the community-based use pattern. This included prohibiting Tier II permit holders in GMU 13 from hunting the same species anywhere else in the State.

At an emergency teleconference in July 2008 the board reviewed the ANS finding for caribou and moose and instead of using 600 for moose they thought about changing the ANS to a range of 300-600 moose. The starting point of the range was set lower because of requests by the Copper Basin Advisory Committee (AC) who “did not want a Tier II hunt to be required when the harvestable surplus dropped below 600 moose. In the view of the AC, the Tier II permit scoring system would exclude younger families in the Copper Basin” (ADF&G 2017a: 13).

In the deliberations about the ANS members of the BOG stated “they would be receptive to a proposal submitted by Ahtna Tene Nene’ Subsistence Committee that would establish a community subsistence harvest permit hunt” (ibid.). They expressed the desire that ADF&G together with Ahtna Tene Nene’ Subsistence Committee would work on a proposal for the spring 2009 meeting (ibid.).

At the spring 2009 BOG meeting, the board adopted the modified ANS range of 300-600 moose and they also adopted an amended version of proposal 84 submitted by Ahtna Tene Nene’ Customary and Traditional Use Committee. This created a community subsistence hunt (CSH) with the opportunity to take up to 100 ‘any bulls’ as well as additional moose that met the antler restrictions (spike fork/50”/four brow tine).

As adopted at the March 2009 meeting, the community subsistence hunt regulations allowed residents of the eight villages associated with the Gulkana, Cantwell, Chistochina, Gakona, Mentasta, Tazlina, Chitina, and Kluti Kaah Community Harves Area to register with a hunt administrator to participate in the hunts for moose and caribou. For moose, the CSH had an August 10–September 20 season with harvest limit of up to 100 bulls that did not meet antler restrictions for other resident hunts, as well as additional moose that met the antler requirements. (ibid. 17)

Soon after the adoption of the CSH by the BOG, Kenneth Manning and the Alaska Fish and Wildlife Conservation Fund⁹ filed a suit against to the regulations which they regarded as unconstitutional. The Alaska Superior Court in a preliminary ruling in 2009 required changes to the regulations “to allow any Alaska resident regardless of residency to register for the hunt” (ibid. 17f). In July 2010 the Alaska Superior Court issued its decision in the Manning Case and ruled the CSH regulations invalid because they were too residency-based. Due to this decision the CSH was eliminated for the regulatory year¹⁰ (RY) 2010/11 by the board and emergency

⁹ Case No. 3KN-09-00178-CI

¹⁰ A regulatory year (RY) is from July 1st to June 30th

regulations for this season were adopted. In October 2010 at a special meeting and at the following regular meeting in March 2011 the BOG changed the regulations of the CSH. Under the new regulations any group of 25 or more people can participate in the CSH. At the meeting in 2011 the board also adopted finding 2011-184-BOG¹¹ which defined “a second, more ‘individual’ pattern of subsistence uses of moose and caribou in the area” (ibid. 18). As a consequence of the regulative changes in 2010/11 the number of participants in the CSH increased substantially:

One group (the 8 Ahtna villages) with 378 members participated in 2009, by 2013 there were 45 groups with 2,066 members. In 2016, 73 groups with 3,400 participants registered for the moose CSH. Residents of the hunt area harvested 66 of 68 (97%) of the ‘any-bull’ moose harvest in 2009. This declined to 39 ‘any bull’ moose in 2011 (66%) and 23 moose (32%) in 2012. In 2016, local area residents who participated in the community subsistence hunt harvested 14 ‘any bull’ moose (12%) while nonlocal participants in the community subsistence hunt harvested 100 (88%). (ADFG 2017a: 18)

These developments, especially the growing numbers of hunters and the rapid harvest of the 100 ‘any bulls’ primarily to non-local hunters, alarmed the local residents as well as the board to make changes in the regulations. The BOG issued a call for proposals concerning the CSH in GMU 13 to be dealt with at a special meeting in March 2017. This meeting and the changes of regulations for the CSH will be discussed on the following pages. Firstly, I want to present the current existing opportunities for hunting moose in GMU 13 and describe the animal the entire struggle is about.

In the regulatory year 2016/17 the following five opportunities for Alaska residents existed for hunting moose in GMU 13:

1. A state-managed resident-only hunt, with a September 1–September 20 season and a bag limit of one bull with spike-fork or 50-inch antlers or antlers with 4 or more brow tines on at least one side.
2. The state-managed community subsistence hunt, with an August 20–September 20 season with a one bull bag limit, up to 100 ‘any bulls’, followed by the opportunity to harvest one bull that meets the antler restrictions.
3. A state-managed resident-only drawing hunt, with October 1–October 31 and March 1–March 31 seasons and a bag limit of one antlerless moose; up to 200 permits may be issued; 10 permits were issued for 2016.

¹¹ see <http://www.adfg.alaska.gov/static/regulations/regprocess/gameboard/pdfs/findings/11-184-bog.pdf>

4. A state managed resident-only drawing hunt, with a September 1–September 20 season and a bag limit of one bull moose, up to 5 permits may be issued, and 5 were issued for 2016.
5. A federally-managed registration hunt on federal public lands with an August 1–September 20 season and a one antlered bull bag limit; only residents of GMU 13 and certain other rural communities are eligible.
(ADF&G 2017a: 1).

6.5.2 Moose (latin name: *Alces alces*, Ahtna name: deniigi)

Moose are one of the biggest land mammal species in Alaska and highly sought after by subsistence and recreation/sport hunters. Moose are the biggest member in the deer family and can be found in the northern hemisphere from Alaska through Canada, the Great Lakes region and New England in North America and in Eurasia from Northern Europe to Chukotka and Kamchatka (Chester 2016: 64).

Adult moose can grow quite large with a shoulder height of up to 7 feet (2.1 m) and a weight of 600-1500 lb. (270-725 kg). A single moose can yield an average of 256 kg of useable meat (Van Lanen 2017: 260).

Typically, males are larger than females and the fur is brown to reddish brown (Chester 2016:64). A bull moose grows antlers every year, losing them after the mating season in fall to conserve energy for the winter.

The sizes of the antlers depend on the age of the moose and are important for mating fights with other bulls. Normally moose are solitary animals except during autumn rut and during severe winters when animals may “yard together where ample browse exist” (ibid.). The antlers are also an important feature to identify a legal moose.

Moose become sexually mature at 2-3 years of age and males are polygamous, mating with more than one female. During the rutting season from September to November bull moose move to the cow’s territories. During this period moose can become very aggressive. Moose look for food during the day and mostly feed on shoots, twigs and bark: “Forages during the day, with peaks at dawn and dusk, eating up to 88 lb (40 kg) of plant material each day. In winter, feeds on shoots, twigs, and bark. In summer, consumes cereal crops and protein-rich forbs” (ibid.).

The moose population in GMU 13 has long been important for hunting and is marked by fluctuations in population size. In the 1960’s and 1970’s annual harvests were

large (averaging 1,200 bulls and 200 cows) but in the 1970's animal numbers started to decline and more restrictive regulations were implemented (ADF&G 2014: 1).

In the middle of the 1980's the number of observed moose reached a new high with 6,892 and the harvest also peaked in RY 1988 with 1,259 taken. In the following years the moose population declined again because of severe winters with deep snow and increased wolf predation (ibid.). The decrease of the moose population continued in the 1990's and culminated in a low of 468 moose taken in RY 2001. In 2000 a wolf predation control implementation plan¹² was developed for Unit 13 with the objective to benefit the moose and their population growth.

The current management objectives for the moose population and the human uses in GMU 13 are as follows.

A combined population of 17,600-21,900 moose:

3,500-4,200 moose in Subunit 13A

5,300-6,300 moose in Subunit 13B

2,600-3,500 moose in Subunit 13C

1,200-1,900 moose in Subunit 13D

5,000-6,000 moose in Subunit 13E

Fall composition ratios:

25 calves:100 cows in Subunit 13A

30 calves:100 cows in Subunits 13B, 13C, 13D, and 13E

25 bulls:100 cows in all subunits

10 yearling bulls:100 cows in all subunits

A combined annual harvest of 1,050-2,180 moose.

(ADF&G 2014: 2)

The estimated moose population for Unit 13 in 2013 was 18,260 moose (with a correction factor of 1.10). Figure 10, provided by ADF&G Division of Wildlife Conservation at the meeting in Glennallen (Alaska Board of Game 2017b, RC¹³ 2, Tab. 1.1), presents the estimated moose population for the time period 1970 to 2015. It is apparent that the moose population underwent some fluctuations during this time and is currently at a high level.

¹² See the Annual Report to the Alaska Board of Game on Intensive Management for Moose with Wolf Predation Control in Unit 13, prepared by the Division of Wildlife Conservation, 2015.

¹³ RC means Record Copy

The estimation of the population is based on repeated aerial surveys in trend count areas (TCA) where number of moose, sex and age are documented (ADF&G 2014: 2).

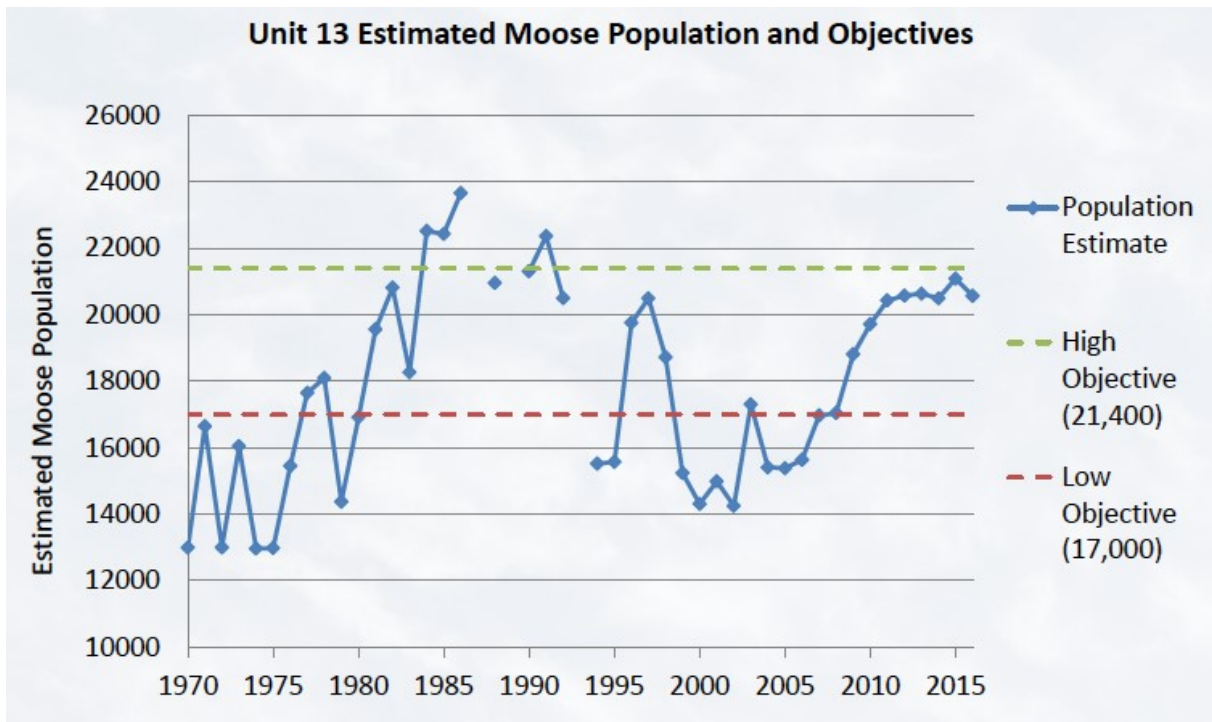


Figure 11. Unit 13, estimated Moose population and objectives, 1970-2015, Alaska Board of Game 2017b, RC 2, Tab. 1.1

The next figure (Figure 12), also from RC 2, Tab. 1.1 presents the number of harvested moose for the period 1963 to 2013. It can be seen that the harvests after the large number of moose taken in the 1960's reached a level that is in accordance with the current harvest objectives of 1,050 to 2,180 moose actually never reached the maximum number but stayed most of the time below the minimum harvest.

From 1992 through 2008, the annual average moose harvest in GMU 13 by Alaska residents was 718 moose (range of 429 to 1,158), compared to an annual average from 1980 to 1991 of 764 moose (range of 448 to 1,084). The hunter success rate for the period 1992 to 2008 was 16.2%, a drop from the 23.0% recorded for 1980 to 1991. More recent data for the 2009-2015 period document an annual average harvest of 868 moose in GMU 13 (range 701 to 1,024) with a success rate of 16.7% (range 12.3% to 19.5%). (ADF&G 2017a: 22)

The reasons why the harvest is below the minimum objectives are many and influenced by various factors. It is connected on the one hand with the hunter success rate which dropped some points below the one recorded for 1980 to 1991

and on the other hand with the concentration of moose in specific areas and sub units that are more difficult to access (ibid.).

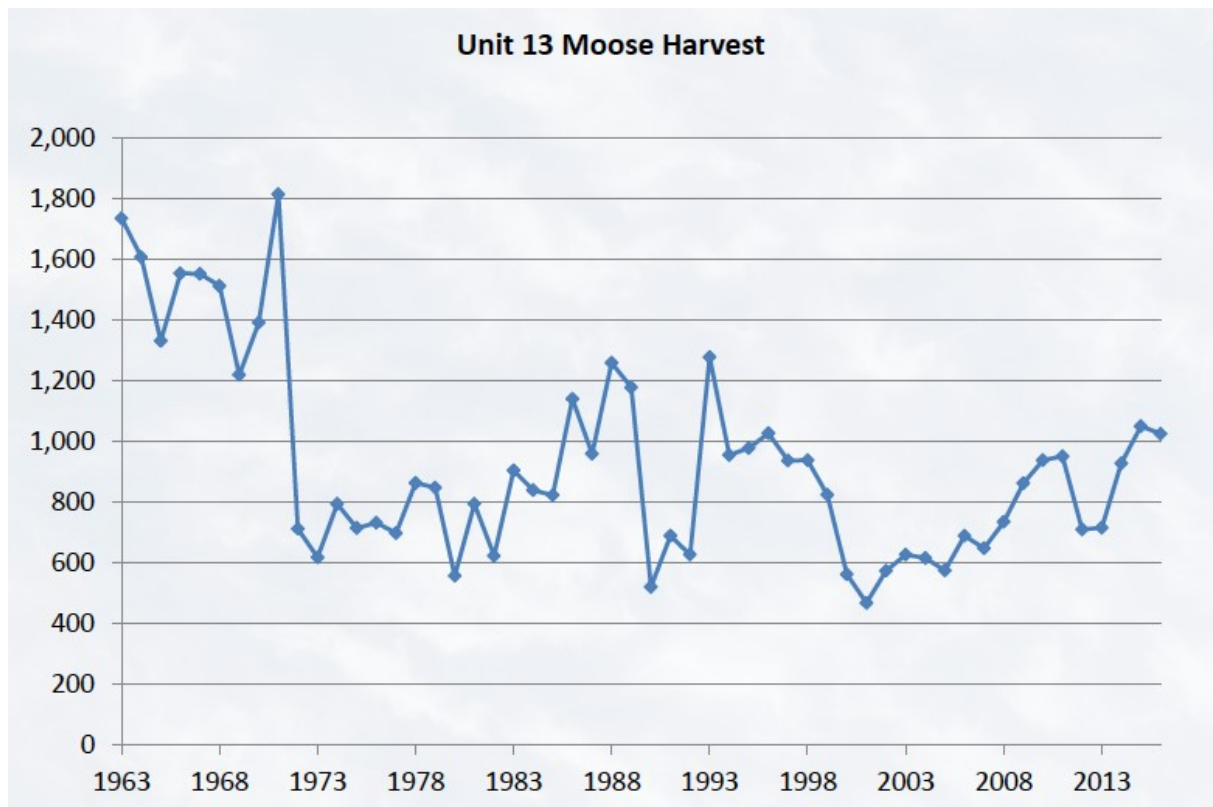


Figure 12. Unit 13 moose harvest for the time period 1963-2013, Alaska Board of Game 2017b, RC 2, Tab. 1.1

6.5.3 Board of Game Special Meeting on Copper Basin Area moose, March 2017

The Board of Game special meeting took place in Glennallen March 18-21, 2017 and was concerned with hunting regulations for moose and caribou in Units 11, 12 and 13 (the CSH area). Since this thesis focuses on the CSH of moose, I will not address the issues concerned with hunting regulations for caribou unless there is an inseparable connection to the hunting of moose. In advance of the meeting a call for proposals to change hunting regulations was issued by the BOG. Members of the public, organizations and fish and game advisory committees submitted 44 proposals for the consideration of the Board. Proposal 44 submitted by Ahtna Tene Nene' was not included because the proposed changes had statewide applicability and were not limited to the Copper Basin Area CSH. In addition to the proposals the Board requests public comment either in written form and/or in oral testimony at the meeting.

The board relies heavily on written comments and oral testimony explaining the effect of the proposed changes. Public comment, in combination with advisory committee

comments and ADF&G staff reports provide the Board of Game with useful biological and socioeconomic data for form decisions. (Alaska Board of Game 2017a: i)

Seven members represented the Board of Game in the meeting: Ted Spraker, chair from Soldotna; Nathan Turner, vice chair from Nenana; Stanley Hoffmann from Bethel, Teresa Sager Albaugh from Tok; David Brown from Wrangell; Karen Linnell from Glennallen; and Larry Van Daele from Kodiak. All the members are from rural rather than urban places. Karen Linnell was the only local resident of the affected region on the board. The members are appointed by the Governor of Alaska and serve a 3-year term. In AS 16.05.221 the qualifications and requirements are described:

For purposes of the conservation and development of the game resources of the state, there is created a Board of Game composed of seven members appointed by the governor, subject to confirmation by a majority of the members of the legislature in joint session. The governor shall appoint each member on the basis of interest in public affairs, good judgment, knowledge, and ability in the field of action of the board, and with a view to providing diversity of interest and points of view in the membership. The appointed members shall be residents of the state and shall be appointed without regard to political affiliation or geographical location of residence. The commissioner is not a member of the Board of Game, but shall be ex officio secretary. (b)

Additionally, there were also representatives from the State Department of Law and the Alaska State Troopers present for legal advice and enforcement issues.

The meeting location was the Alaska Bible College in Glennallen in the Ball Memorial Library room. The meeting started on Saturday, March 18 at 11 am with an introduction of the Board members and the purpose of the meeting. For an understanding of the proceedings I will follow the agenda of the meeting on the next pages. I will present the relevant proposals, comments and staff reports and then discuss six aspects that I identified as the most important in the context of the CSH moose hunt. These were identified after listening to the public and advisory committee testimony and analyzing the proposals and the comments: the importance of wild game for the Ahtna, 'any bull' moose, enforcement and eligibility of groups (definition of community), competition and techno-economic differentiation, equal access and the Alaska Constitution, and youth hunting and the Tier II scoring system. I will discuss these aspects by presenting statements from the personal testimonies at the meeting and interviews as well as additional data.

One of the first business of the Board was an ethical disclosure request to Karen Linnell by the Alaska Outdoor Council¹⁴ (AOC). This is an organization representing hunting, fishing, trapping rights in Alaska with a strong emphasis on equal access and equality among users. The AOC also represents the Alaska Fish and Wildlife Conservation Fund who took legal action against the regulations of the CSH in 2009. The present problem for the AOC was that Karen Linnell is a member of Ahtna and that there could be a conflict of interest. The board briefly considered the request but Karen Linnell was allowed to participate fully at the meeting.

Most of the first day was reserved for reports by agency officials, including ADF&G Director, Division of Subsistence and Division of Wildlife Conservation, Field biologists, Office of Subsistence Management (federal) and BLM.

The reports by ADF&G staff mostly presented the data and information I provided previously. Jim Fall from the Division of Subsistence for example presented the regulatory history in GMU 13 and 11 and gave further inputs for discussion about Native subsistence patterns and means of transportation. He also recommended that the ANS should not be a static number but periodically be reevaluated according to changing circumstances and needs. Jim Fall and ADF&G also provided the following table (Table 7) showing the increased participation in the moose CSH. The number of participants and groups increased steadily over the last years, reaching a maximum of 75 groups and 3,400 participants in 2016. The total harvest for 2016 was 201 bull moose with a portion of 114 'any bull' moose that exceeded the actual limit of 'any bull' harvests.

Regulatory year	Number of groups	Number of communities participating	Number of households	Number of individual participants	Total number of moose harvested
2009	1	19	246	378	100 (68 "any bull") ^b
2010 ^a					
2011	9	31	416	814	86 (59 "any bull")
2012	19	29	460	969	98 (73 "any bull")
2013	45	41	955	2,066	156 (81 "any bull")
2014	43	41	893	1,771	150 (77 "any bull")
2015	43	43	1,039	1,984	171 (92 "any bull")
2016	75	48	1,527	3,400	201 (114 "any bull")

a. The community hunt was not offered in regulatory year 2010.

b. "Any bull" means bull moose that do not meet antler requirements for other Alaska resident hunts in the units in which the CSH takes place.

Table 7. Number of groups and participants in the Copper Basin CSH, 2009-2016, ADF&G 2017a: 40

¹⁴ For further information see <https://www.alaskaoutdoorcouncil.org>

William Robbins, area biologist at the Glennallen Office of the Division of Wildlife Conservation, presented the population estimates, objectives and harvest number that were also presented previously in the section about moose. George Pappas from OSM presented the federal harvest number for the region (Alaska Board of Game 2017b, RC 10) showing that in 2015 1,330 permits were issued to local residents eligible to hunt moose in the area of the CSH on federal lands. Out of those, 699 actually went on hunting trips and harvested 85 bulls. On federal lands only rural residents can apply for hunting permits.

The rest of the day and the following Sunday was filled with public and advisory committee oral testimony. Oral testimony was given by individuals (Ahtna tribal members, local and non-local residents, biologists and anthropologists), Advisory Committees, organizations (Alaska Outdoor Council, Resident Hunters of Alaska) and Ahtna representatives (Ahtna Tene Nene' Subsistence Committee). In total 43 people testified before the Board (Alaska Board of Game 2017b, RC 25). I will present statements of the oral testimonies in the discussion of the above-mentioned aspects, but first I will look in more detail at the submitted proposals for regulatory changes.

I already mentioned that 44 proposals were submitted in advance of the meeting. Proposal number 44 was not included because of the statewide applicability of the proposed changes. The majority of these submissions proposed changes to the CSH and again a majority of these proposed to eliminate the CSH. Individuals, advisory committees, organizations and tribal representatives submitted proposals and also commented on the proposals in advance. In total 30 different individuals, AC's and organizations submitted proposals. 21 individuals and organizations provided public comment on the proposals in advance. Additionally 8 Advisory Committees discussed and commented as well as voted on the proposals ahead of the meeting.

Of the 43 proposals for deliberation to the BOG, 24 were in one way or another in favor of eliminating the CSH hunt for moose and caribou. Two proposals favored a Tier II hunt instead of the CSH and two proposed to replace the CSH with a registration permit hunt. Two proposals were concerned with the clarification of the eligibility of communities for the 'any bull' allocation and the CSH. One was in favor of closing the non-resident moose hunt in Unit 13. The remaining proposals were concerned with changed season dates or changed antler restrictions.

On a general level it seems that almost everybody who submitted or commented on the proposals, agreed that the CSH as it is currently in place does not work. The recommendations of how to solve the current problems with the CSH, however, differed widely.

Proposals in favor of eliminating the CSH mentioned for example that enough opportunity is provided through the general season (see Proposal 3, 8, 14; Alaska Board of Game 2017a) and that the CSH is taken advantage of because of the earlier season which leads to overcrowding (see Proposal 2, 6, 10 and 15; *ibid.*). Several proposals mentioned that the current regulations with the CSH placed the moose population under too much pressure and forecast that the moose numbers will decline rapidly (see Proposal 7, 11, 16 and 19; *ibid.*). Equal access and an emphasis against any rural preference were also mentioned in some proposals (see 3, 4, and 14; *ibid.*). Two proposals (20 and 21, *ibid.*) recommended replacing the CSH with a Tier II hunt. The Ahtna Tene Nene' Subsistence Committee submitted four proposals¹⁵ (1, 24, 34 and 44, *ibid.*) to the meeting. Their recommendation to fix the CSH was to require groups and communities participating in the CSH to show their traditional and customary use pattern (as defined by 2006-170-BOG) like the Ahtna had to. The proposed changes would require the groups to come before the Board and testify and show their customary uses and area of hunting. The Board would then issue a community permit for the group and establish an ANS for the particular group as it was done with the 100 'any bull' quota originally established for the eight Ahtna villages.

It is interesting to note that the united opposition against the current regulations of the CSH contradicts the fact of the high participation in the CSH. Only one group, called 'Alces Asesinos'¹⁶ participating in the CSH submitted a written testimony in favor of the current status of the CSH, writing:

All the proposals intend to change the current CSH regulations or eliminate the hunt altogether. The Unit # 13 CSH has been operating effectively as it is currently regulated. The growing popularity of this hunt is testament to the CSH regulations that work in support of a subsistence lifestyle of the typical Alaskan family not out for a trophy to hang on the wall or enter into the record books, but to teach the young to hunt, place food on the table & to share with others that can't hunt such as the communities elders. (Edelman 2017, written statement)

¹⁵ Including Proposal 44 that was not considered by the board as mentioned

¹⁶ Spanish for Moose Assassins.

This submission reflects the enthusiasm and commitment of many Alaskans, living in urban communities, towards the subsistence lifestyle. Apart from this statement there was only one other individual comment in favor of the current CSH regulations.

Before dealing with the deliberations of the board and the decisions made, I want to briefly look at the Advisory Committee and ADF&G staff comments regarding the proposals.

Eight Advisory Committees sent in comments to the proposals: Anchorage AC, Copper Basin AC, Denali AC, Fairbanks AC, Matanuska Valley AC, Paxson AC, Tok Cutoff/Nebesna Road AC, and Upper Tanana Fortymile AC. All but the Copper Basin AC supported proposals to eliminate the CSH. The Paxson AC writing:

The Paxson Fish and Game Advisory Committee would like to reiterate that we are opposed to the Community Hunt in any format. We believe there is adequate opportunity for local residents to harvest moose and caribou under current regulations. (Paxson AC 2017, comment on the proposal book)

The Copper Basin AC was in favor of modifying the CSH according to the proposals 24 and 44, submitted by Ahtna Tene Nene'. These proposals would require the participating groups to show the board their customary and traditional use area and pattern. If the board does not go along with Proposal 44, the AC favored the elimination of the CSH.

ADF&G staff commented extensively on all the proposals providing information on the current regulations, population and harvest data as well as the effects of the proposed changes. The Department had a neutral position on all the proposals dealing with the moose CSH and only opposed some proposals concerned with caribou. The most read comment was: "The department is **NEUTRAL** [emphasis in original] on the allocation of moose harvest in Units 11, 12, and 13" (Alaska Board of Game 2017d: 43). They reminded the Board, however, of the findings in 2006-170 BOG: "If the CSH is eliminated, the board should consider whether reasonable opportunity for success in harvesting a moose or caribou for the communal pattern of use still exists" (ibid.).

Deliberations of the Board on the proposals started on Monday 20th, 2017 after the public testimony has ended. The BOG vote on the proposals 24, 44 and 90 (a proposal deferred from a former BOG meeting) submitted by Ahtna Tene Nene' failed. The board adopted proposal 20, submitted by an individual, with amended

language. Proposal 20 recommends replacing the CSH for moose with a Tier II moose hunt. The board did not replace the CSH moose hunt but amended the proposal to only allocate the 100 'any bull' through Tier II:

The amended proposal retains the CSH moose hunt, distributes the 100 moose that do not meet antler restrictions by Tier II criteria, up to 350 permits may be issued, one Tier II permit per household. The CSH moose season for Units 11 and 13 was changed to August 20– September 20. The board clarified that permit holders for regulatory year 2017 and 2018 will not be bound by the two year commitment for regulatory year 2018. (Alaska Board of Game 2017e: 1f)

The decision of the board to put the 100 'any bull' moose under a Tier II structure did not surprise many attendants of the meeting as some in informal conversations had indicated anticipating it. Ahtna Tene Nene' actually supported a Tier II hunt for 'any bulls', if the board would take no actions to reduce the number of groups participating in the CSH. However, they included the condition that only the 447 households of the one group from the CSH in 2009 would be eligible for the Tier II permits. The board did not include this condition in the adopted proposal.

The Alaska Board of Game describes the findings of the 2017 Special meeting on the CSH as follows:

[T]he board found that the ability to take any bull moose regardless of antler size or configuration is an important component of the community pattern of subsistence hunting. The ability to take any bull regardless of antler characteristics must be limited because of the potential to overharvest certain age classes of bulls [...]

[T]he board found that providing 1 any bull permit for every three households does not satisfy the need for reasonable opportunity for three reasons. First, the hunts can be very short and may close with little warning and participants may not get a chance to hunt before the season closes. Second, the competition from hunters can be very intense during the early days of the season. Third, some households do not receive an any bull permit and are not able to take a bull that is presented to them. The board heard testimony that it is traditional in the Ahtna culture to take any bull that presents itself to the hunter, and that it would be culturally inappropriate to not take a bull that presents itself [...]

[T]he any bull hunt does not currently provide reasonable opportunity and participation must be restricted. The SF50/4¹⁷ portion of the population does not require participation to be restricted, and all moose hunts in this area allow harvest of SF50/4. The

¹⁷ SF50/4 meaning spike-fork/50 inch antlers or 4 brow tines on one side (Antler restrictions, see Appendix C for further information).

combination of a limited number of any bulls distributed through existing scoring criteria described in 5 AAC 92.070 and the opportunity to take bulls that meet antler restrictions (either through the CSH or other hunts) satisfies the need to provide a reasonable opportunity for subsistence, and the need to provide opportunity to take any bulls in a hunt consistent with the community pattern of harvest identified in earlier findings. (Alaska Board of Game 2017e: 1)

For the 2017 moose Community Subsistence Hunt in the Copper Basin the following requirements and eligibility criteria were effective:

To form a group, a group coordinator has to be designated who is responsible and certifies that the permit application is correct. He monitors and reports on the compliance of the group members with the conditions of the CSH. He also serves as the primary person of contact for the ADF&G. The group coordinator or the group has to send a 'Community Subsistence Hunt Coordinator Report'¹⁸. This contains a summary of the group's efforts and success in the hunt as well as a description of the communal pattern followed by the group members. Additionally, each household participating in a group has to send in a 'Household Community Harvest Report'. The individual participation in a CSH group is linked to eligibility criteria:

1. No member of the household can hold any state drawing/Tier I/Tier II/registration moose hunts, hold general season moose harvest tickets, or hold federal moose permits outside of the CSH hunt area. After the CSH hunt has ended, unsuccessful individual household members may hold state harvest tickets or permits for areas where the bag limit is greater than one moose per person.
2. No member of the household can hold any state or federal drawing/Tier I/Tier II/registration caribou permits outside the Copper Basin CSH hunt area.
3. All household members agree to the hunt conditions herein.
4. A member of the household can be on the Failure to Report (FTR) list and be counted as a group member, but will not be allowed to participate in CSH hunting activities.
5. A 'community' or 'group' is a group of people linked by a common interest in, and participation in uses of, an area and the wildlife populations in that area, that is consistent with the customary and traditional use pattern of that wildlife population and area as defined by the board (5 AAC 92.072 (i)(2)).

(ADF&G 2017c: 4)

No limitation on the number of groups was adopted and there is no limit on the number of participants in one group or community. The only requirement for a group

¹⁸ See Appendix G: Community Subsistence Hunt Coordinator Report – Moose, 2018

is that there must be 25 or more “verified eligible members” (ibid. 2). Once a group is established the members are committed for “a period of two consecutive years. Once established, all group members must comply with all CSH hunting requirements for the two-year commitment period and group membership cannot be changed until the permit expires” (ibid. 1).

The board acknowledged that the subsistence pattern in the Copper Basin is characterized by the use of almost all parts of a harvested animal and therefore participants in the CSH are required to salvage for human consumption: the head, heart, liver, kidneys, stomach, hide, and all edible meat from the forequarters, hindquarters, ribs, neck, and backbone.

During the fall season, meat of the forequarters, hindquarters, and ribs must remain naturally attached to the bones until delivered to the place where it is processed for human consumption. (ibid. 6)

Additionally, the board also found that “meaningful communal sharing” is a fixed component of the subsistence pattern in the Copper Basin and therefore requires that “[a]t least one communal sharing event featuring moose harvested under the terms of a Copper Basin CSH hunt must be held” (ibid.). A description of the event has to be included in the final report submitted by the coordinator.

The board assigned the ADF&G with the task to ensure that participants of the CSH are in compliance with the customary and traditional use patterns described in 2006-170-BOG. The board does not require groups to establish the C&T pattern before they apply:

Subscribers need not have already established the pattern of community use summarized below; however, by applying, subscribers will be certifying that they have read, understood, and will voluntarily attempt to participate in and establish the pattern of subsistence use

These are the findings and requirements for the Copper Basin moose CSH 2018. Although the Board of Game did not follow the arguments presented by Ahtna and other rural residents to restrict participation in the CSH for groups not following the C&T pattern, they adopted a compromise, allocating the 100 ‘any bull’ moose through the Tier II scoring system. In the next section I will discuss these findings in connection with stated concerns by Ahtna and other residents of the Copper River Basin.

6.5.4 Discussion

The outcome and findings of the BOG meeting did not meet the expectations of the Ahtna and other rural residents, because the Board did not adopt regulations to restrict the participation in the CSH. The Board, however, did connect the allocation of the 100 'any bull' moose to a Tier II scoring system and thereby acknowledged some of the concerns rural residents had with the current form of regulation. In the oral testimonies the residents of the Copper River Basin mentioned various aspects and I will focus on the concerns and issues, which relate most to the research questions of this thesis. These are the Tier II scoring system, the importance of wild game and 'any bull' moose, the eligibility of groups for the CSH and the definition of 'community' as well as the growing competition and the question of equal access.

In this discussion I will present testimony of Ahtna tribal members and other rural residents as well as data to reinforce and confirm the raised issues. After discussing these points, I look at the efforts and attempts of Ahtna to become a partner in the management of wild resources through a co-management regime with the Federal government.

I start the discussion with the concerns of Ahtna people regarding the Tier II scoring system, although the Tier II scoring system does not relate as much as the other issues with the research questions, it was the only decision of the Board to make at the meeting and the only change in regulation effective for the CSH 2018.

Tier II hunt scoring system and the ability of the youth to hunt

The decision of the board to go back to a Tier II hunt for the allocation of the 100 'any bull' moose raised concerns for the Ahtna and other rural residents. It was the deficiency of the Tier II scoring system that led to the efforts of the Ahtna and the Board to establish the Community Subsistence Hunt in the first place. This was shown in the regulative history review. Tier II hunts are in place when there is not enough game to satisfy all subsistence needs, which is not the case for GMU 13, because the moose population is currently above the objective. For the application a questionnaire must be filled out. The applications are scored based on the answers to the questionnaire and permits are issued to those with the highest score. The questions are concerned with the dependency on the game for their livelihood and

availability of alternative resources (ADF&G 2017c: 15). The questions and the scoring system are described in 5 AAC 92.070 (Alaska Administrative Code).

There are five questions that need to be answered on the application for a Tier II permit and the maximum score is 140 points. The permits are issued to the persons with the highest scores:

1. Up to 50 points are awarded for the number of years the applicant has hunted or eaten meat from the game population in the hunt area [...] One point is awarded for each year.
2. Up to 10 points are awarded for the number of years any one member of the household has hunted or eaten meat, or would have hunted this population, but did not because the hunt was cancelled or the household member was unsuccessful in obtaining a drawing or Tier II permit for this population. One-fifth of a point is awarded for each year.
3. Up to 25 points are awarded for the number of days you spent hunting and/or fishing during the last regulatory year in the Tier II hunt area for which you are applying. The maximum number of points will be awarded to applicants who hunted and fished in the area for 70 days or more [...].
4. Up to 25 points are awarded for the cost of food in the community where most of the applicant's household store-bought food was purchased during the past year. Points received may not exceed the points calculated by the department using the cost-of-food index for the community nearest the applicant's residence.
5. Up to 30 points are awarded for the cost of automotive fuel in the community where most of the applicant's household automotive fuel was purchased during the past year. (ADF&G 2017d: 1)

The questions center on long-time usage, time spent in the field in the previous year and economic aspects like the replacement value of store-bought food and the comparison of fuel costs. The Tier II scoring questions and evaluation methods were repeatedly modified and adjusted since the implementation.

Beginning in 1990 and through 2008, the BOG invested considerable efforts in establishing and revising the questions used to score applicants for Tier II permits, and ADF&G staff invested substantial resources to implement and help evaluate the scoring system. (ADF&G 2017a: 10)

Even though ADF&G spent much time and effort in the evaluation of the Tier II scoring system, it can be easily seen that this system can be deceived by false applications and inaccurate answers. To prevent this ADF&G needs adequate financial and human resources to control and monitor the applications and verify the

provided answers. In 2006 the Board concluded that “virtually since its inception, the Tier II subsistence permit system has been plagued with public complaints about inequities, unfairness, and false applications” (Alaska Board of Game 2006: 2).

This concern, mentioned in 2006 appears to remain and although Tier II hunts are in place in about 20 other areas without that much criticism and complaints, these areas do not have comparable numbers of participants to GMU 13. As the road connection makes it easier for residents of urban areas to apply for permits it is possible that more applications create increased misstatements.

Additionally, problematic is the strong emphasis on long-time uses of the respective resource, although this benefit older people having a long tradition of usage, including many Ahtna. At the same time this emphasis disadvantages younger local hunter as it becomes more difficult to obtain a permit. Ahtna people mentioned this at the meeting, and it was part of the growing criticism in the 2000’s leading to the establishment of the CSH.

Angela Vermillion, tribal member of Ahtna and the Gulkana Village Council said in her oral testimony:

When the Community Subsistence Hunt was first established in Unit 13, it was a great benefit to the Ahtna people. We had many of our young Native people harvesting moose and caribou. Prior to this, many of us testified, regarding the deficiencies with the Tier II program. We testified on how the Ahtna people have been practicing their way of life which matches the 8 criteria for the customary and traditional use pattern for the game in Unit 11, 12 and 13. It was a stringent process testifying for the Ahtna people to establish a community harvest hunt area because the Tier II process denied our younger people the ability to get a permit. (Vermillion 2017, oral testimony at BOG meeting)

Dorothy Shinn, also tribal member of Ahtna added the following in her statement:

Moose and caribou meat is important to me because its our traditional foods, its something we always ate. At my age young people share with me. It is important that younger people get moose so they can share with me because I cannot hunt for myself (Shinn 2017, oral testimony at BOG meeting)

The importance of the ability of young people to obtain a permit and provide their families and community with game meat and other subsistence resources is essential for the cultural and social obligation towards the older members of the tribe and community. Without it, young people cannot meaningfully contribute to the community and take part in the activities like hunting. Jim Simon, anthropologist and

former supervisor for the Division of Subsistence, made this explicit in his statement at the BOG meeting, which highlights the importance of providing wild foods for community funerary and memorial potlatches:

[C]ustomary and traditional uses are not just about food, but also for providing opportunities for Alaska Native youth to practice their heritage, learn their language, make themselves whole and healthy by fulfilling their cultural and social obligations to not only feed their families and those who cannot hunt for themselves any longer, but also to freely engage in the religious ceremonial requirements of providing sacraments of fish and wildlife for community funerary and memorial potlatches without being maligned [...] Non-Natives, like those of my family, do not have these same spiritual, social, and cultural obligations at death of one of our family members, again demonstrating that all Alaskans are not similarly situated with respect to equal access and that's okay. (Simon 2017, oral testimony at BOG meeting)

Not being able to meet these cultural and social obligations as well as to put food on the table of the family will only give more reason for moving away from the region and likely into the cities. This will further intensify the situation.

A prediction about the distribution of Tier II permits for the upcoming Community Subsistence Hunt is not possible and the Ahtna and other local people will have to wait and see how the permits are awarded and distributed. The scoring and evaluation of the applications will need sufficient financial resources and labor power to verify and check all the applications in detail. It is questionable whether ADF&G will have a larger budget for scoring applications due to the current economic situation in Alaska and budget cuts of the State mentioned by Division of Subsistence director Hazel Nelson at the meeting further increase the doubt (personal field notes). A way to mitigate the situation of young people not getting a Tier II permit is the use of designated hunters by older community members. This means that people who receive a Tier II permit and who are not able to hunt for themselves can designate another person of the group to hunt. This can mitigate the effects of the Tier II scoring system, but it is not a long-term solution for the problem of younger hunters following the traditional subsistence pattern of their parents and community as they are not able to obtain their own permit through the system in place.

The importance of wild game and ‘any bull’ moose for Ahtna

In the course of this thesis the importance of wild foods for the Ahtna people and their culture has been identified. This was also mentioned during the meeting in public testimony and in conversations with Ahtna. Linda Pete, tribal member of Ahtna, living in Copper Center said:

God blessed us with beautiful land and wild game to feed us. We depend on wild game to live. Our ancestors for generations lived and regulated game for generations and we continue to do the same. My family and village do solely depend on wild game to survive in this environment. (Pete 2017, oral testimony at BOG meeting)

The scarcity of moose in the 1930’s and 1940’s, reported in oral traditions by Ahtna elders in different studies, show that moose did not always had the importance of today in the diets of the people. This is also shown on the following table (Table 8) prepared by ADF&G in a report for the Board of Game that compares harvests and uses of moose in Copper Basin communities for the years 1982, 1987 and 2009-2013, the most recent study year.

	1982	1987	Most recent study year ^a
Percentage of households			
Using moose	48.7%	48.9%	71.1%
Hunting moose		55.8%	51.4%
Harvesting moose	13.3%	18.3%	14.4%
Giving away moose		15.0%	26.5%
Receiving moose		33.3%	58.2%
Hunting success rate (households)		32.8%	27.9%
Estimated number of moose harvested	147	225	183
Mean household harvest, pounds	65.2	83.9	69.7
Per capita harvest, pounds	21.0	29.4	27.5
Per capita use, pounds	43.7	60.3	38.3

Sources Stratton and Georgette 1984; McMillan and Cuccarese 1988; Holen et al. 2015; CSIS
Note Blank cells mean data not available

a. Comprehensive surveys were conducted in Copper Basin communities for study years 2009 to 2013

Table 8. Comparison of harvests and uses of moose in Copper Basin communities, 1982, 1987 and most recent study year. (ADF&G 2017a: 38)

The percentage of households using moose has risen from 48,9% in 1987 to 71,1% to the most recent study year and indicates the growing importance of moose in the diet. At the same time percentage of households harvesting moose remained relative stable (13.3% 1982, 18.3% 1987 and 14.4% for the most recent study year). The

percentages of households giving away and receiving moose on the other hand increased significantly from 15.0% in 1987 to 26.5% and 33.3% in 1987 to 58.2% for the most recent study year. The shift towards increasing use of moose in Copper Basin communities might be related to increasing pressure and regulation on other wild food resources like salmon. Salmon was and is the main wild resource used by Ahtna but declining populations of salmon and increased competition has led to more extensive regulation and restricted access (see Holen 2010).

The 'any bull' allocation, as mentioned earlier, is paramount for Ahtna and this is rooted in the tribal laws and customs associated with animals and the relationship with the environment. These rules are deeply connected with the environment surrounding the Ahtna and the wildlife species within the territory. Anthropologist and former member of the Division of Subsistence summarizes this connection between animals, environment and Ahtna culture with the following words at his public testimony at the meeting:

The community hunt was originally intended to reflect Ahtna culture. The Ahtna have lived in this land for thousands of years and have perfected a culture that enables them to live in a harsh land. Everything about Ahtna culture is centered on the people's relationship with the animals they rely on for sustenance. In the Ahtna tradition animals and humans exist in a reciprocal relationship. Humans take animals to survive and animals give themselves to humans so that the animals can be reborn in a never ending cycle of birth and death [...] When a hunter encounters a moose he must kill that moose. To not kill the moose is disrespectful. If the hunter does not take that moose he will lose his luck [...] Likewise, to waste an animal, to waste meat is tantamount to a sin that will result in dire consequences for the hunter. (Simeone 2017, oral testimony at BOG meeting)

In the words of Ahtna tribal members, Franklin John and Michelle Anderson:

We have a strong traditional way, that we take the moose that presents itself to us, not let that one go for another with bigger or smaller antlers. This is our belief and the way we hunt. (John 2017, oral testimony at BOG meeting)

We weren't raised to be trophy hunters or competitive while hunting. The Ahtna people believe that when an animal gives itself that is the animal to take. It doesn't matter how small or large it is. The Ahtna people consider it *engii*¹⁹ to not properly take care of wild game or fish or let the meat go bad. (Anderson 2017, oral testimony at BOG meeting)

¹⁹ 'Engii' refers to tribal law and the custom of taking a bull moose the presents itself.

Much of the ongoing struggle of the Ahtna is over these 'any bull' harvests that enable them to follow their traditional and cultural rules and obligations towards the animals and the environment. The efforts of the Board of Game to acknowledge these cultural values were shown, but with the opening of the CSH for the whole state and all residents forming groups through the Alaska Supreme Court the ability to harvest these 'any bull' moose shifted from the Ahtna to outside hunters. This has resulted in 2016 in only 9 'any bull' moose for the Ahtna people (Stickwan 2017, public testimony at BOG meeting). To take a bull that does not meet antler restrictions is of course an advantage urban hunter also want to benefit of. The hunting trip can be significantly shortened if you do not need to spend time looking for an animal big and old enough to meet the restrictions. This leads to the situation that the quota of 'any bull' moose is reached within days after season opening in August: "This year no one in our family was able to get a legal moose because the quota for any bull was gone in such short time" (Dementi 2017a, oral testimony at BOG meeting). The intention of the board implementing the 100 'any bull' quota was to provide for the local needs of the people living in the Copper Basin, but with opening of the CSH to all eligible groups in Alaska this quota is now for over 1,527 households constituting the 78 groups participating in the CSH in 2016. With a quota of 100 'any bull' moose for the whole State of Alaska it should be obvious that reasonable opportunity to hunt those is not provided anymore. The board in their findings of the meeting did not change the 'any bull' moose quota or restricted the allocation to the one group of Ahtna and rural residents participating in the CSH in 2009 but implemented a Tier II system with all the individuals participating in a group (about 3,400 in 2016) being eligible for a permit. This decision of the Board acknowledged the concerns of the Ahtna over the allocation of the 'any bull' moose, but it remains to be evaluated next year if the Tier II permits are distributed to Copper Basin residents or residents from urban areas.

Eligibility of groups and defining 'community'

The Ahtna attempted to solve the problems with the CSH and the high number of participants by requesting the board and ADF&G to require groups participating to follow the customary and traditional pattern of subsistence. The board acknowledged this pattern in 2006 and the Ahtna testified to it in 2008 in preparation of the CSH. Various individuals testifying to the board at the meeting requested checking the

eligibility of groups and verifying the given information. The following statement is from Angela Vermillion, a tribal member of Ahtna:

The department has not implemented enforcement of other groups to comply with the C&T criteria. Any group of 25 can freely apply which is estimated the highest this year at 88 groups for the 100 any bull moose which was established as the amount needed for subsistence for the 8 Ahtna Villages [...] It was not established for the whole state of Alaska. The department has not provided any means to deny group applicants who do not follow the 8 C&T criteria who may have just moved to Alaska versus our people who have a long established history and culture. (Vermillion 2017, oral testimony at BOG meeting)!

Another statement by Franklin John:

I would like to see the state enforce the community hunt report based on the 8 criteria. Having a bbq in your back yard to me isn't the same as sharing under our custom and tradition. Sharing to me is making sure elders and single mothers have meat for the winter in the community. (John 2017, oral testimony at BOG meeting)

The Board did not adopt any of the proposals Ahtna Tene Nené submitted which requested that eligibility of groups should be checked according to the C&T²⁰ pattern of subsistence. They stated this would again lead to litigation because of the equal access clause. Board member Van Daele, however, agreed with the question raised by a tribal member of Ahtna, Gordon Carlson, from Cantwell about the meaning of the word 'community' to the board:

I have always had one question about the community hunt. What does the word 'community' mean to the Board of Game. I myself though the mean of [the] word was a small town or village, very close ties to each other possible relate through family ties as with the Ahtna people...but it seems like the word community to the Board of Game means you can find 25 people all over the State and create a group and call yourself the 'Swamp Things' or 'The Bad Boy on Bicycles' [...] before you get rid of the community hunt it would be good to find out what meaning of the word community means and how it is being used. (Carlson 2017, oral testimony at BOG meeting)

Dorothy Shinn gave her definition of what a community or group is:

To me a community is a group of people who have a longstanding relationship with one another, who practice a way of life together, who live and die together. (Shinn 2017, oral testimony at BOG meeting)

In the deliberations the Board took up the question of 'community' and 'group' definition. The existing definition of 'community' in the Alaska Administrative Code is:

²⁰ C&T meaning cultural & traditional

(2) a 'community' or 'group' is a group of people linked by a common interest in, and participation in uses of, an area and the wildlife populations in that area, that is consistent with the customary and traditional use patter of that wildlife population and area as defined by the board. (5 AAC 92.072(i)(2))

After deliberations the board came up with a new definition of 'community' but they deferred the decision to the next statewide meeting in November 2017 because its applicability would go beyond the Copper Basin Community Hunt Area. The reformulated definition to repeal the existing definition reads as follows:

(2) a 'community' or 'group' is a mutual support network consisting of at least 50 people who routinely (at least several times each year) provide each other with physical, emotional, and nutritional assistance in a multi-generational and inter/intra familial manner to assure the long-term welfare of individuals, the group, and natural resources they depend on. (Alaska Board of Game 2017d)

The new definition, if adopted by the board in the next meeting, is narrower and more concrete than the currently existing. The new requirements in this definition (provide physical, emotional and nutritional assistance several times a year in a multi-generational manner, etc.), however, appear difficult to be monitored by the managing and enforcing authorities. It is positive that the new definition will require more than just a common interest in a particular resource and that it corresponds closer to the understanding of a 'community' by the Ahtna and other Alaska Native groups.

Competition and mode of transportation

This thesis reported that the CSH in the Copper Basin has enjoyed a growing number of participants (Table 7) and that this has increased competition for a limited number of resources. It was mentioned repeatedly by rural residents that it is difficult to compete with the bulk of urban hunters coming into the region with better equipment and means of motorized transport.

Eleanor Dementi, tribal member of Ahtna from Cantwell reports for example:

Once again we are asked to change our way of life in the village [...] We can't afford to change our way of life as we have already loss many things like our language, religion and many other ways of life. The animals give themselves to us, but when we have to see if it's legal before we can shoot it and have to let it go it changes our luck and we are never able to see another animal.

There is no way many of our people can afford the machines that are used by outside hunter to compete with them. This year no one in our family was able to get a legal

moose because the quota for any bull was gone in such short time. The state needs to protect our way of life or else most likely you will see many more homeless people in the cities. (Dementi 2017a, oral testimony at BOG meeting)

The collected data by ADF&G corresponds with the assessment of the Ahtna people that they are outcompeted by urban hunters. Table 9 composed by ADF&G shows the percentages of ‘any bull’ harvest in regard to residency. In 2009 68 ‘any bulls’ were harvested, 66 (or 97.1%) of these were harvested by GMU 13 residents and only 2.9% by other Alaskan residents. In 2012 the situation was reversed for the first time with 39 (31.5%) ‘any bulls’ harvested by GMU 13 residents and 50 (68.5%) by outside hunters. In 2016 the GMU 13 residents could only successful hunt 14 (12.3%) ‘any bull’ moose whereas 100 (87.7%) ‘any bull’ were harvested by other Alaskan residents living outside of GMU 13.

Year	Residency of hunter				Total any-bull harvest
	GMU 13		Other Alaska		
	Number	Percent	Number	Percent	
2009	66	97.1%	2	2.9%	68
2010 ^a	-	-	-	-	-
2011	39	66.1%	20	33.9%	59
2012	23	31.5%	50	68.5%	73
2013	11	13.6%	70	86.4%	81
2014	16	20.8%	61	79.2%	77
2015	23	25.0%	69	75.0%	92
2016	14	12.3%	100	87.7%	114

a. The community hunt was not offered in regulatory year 2010.

Table 9. Community Subsistence Hunt ‘any bull’ harvest by hunter residency, 2009-2016. (ADF&G 2017a: 40)

The difficulty in competing with outside hunters is also shown in the data, which links successful harvest with the mode of transportation (Table 10). In 1983, Holly Reckord, reported that walking and road hunting were the primary moose and caribou hunting strategies used by Ahtna (Reckord 1983: 66).

Native people generally do not use off-road vehicles, except in a few cases [...] Most others hunt from cars and pickups or walk. Plying the roads, in a custom called ‘road hunting,’ is presently the most prevalent hunting strategy in the region among both Natives and Whites. (Reckord 1983: 63f).

Use of off-road vehicles like ATV's was not common amongst local and Ahtna hunters because they could not afford most of the equipment and running costs of fuel (ibid. 66). In the beginning the strategy of 'road hunting' proved to be successful as competition was still low but in the 1980's the situation changed: "Overall, local hunters observed that game abundance and the ability to harvest animals near the road corridors was being negatively affected by increasing hunting activity and thus road-hunting had become less reliable" (ADF&G 2017a: 26). Because of this, Ahtna and other local hunters focused and still focus their efforts on hunting early in the season before competition from the outside rises (Reckord 1983: 64).

On the following table (Table 10), again put together by ADF&G, the mean annual number of all hunters and successful hunters by transport type for the years 2009-2016 are shown.

Transport means	Local Residents		Non-local/non-resident	
	Number	Percentage	Number	Percentage
<i>All Hunters</i>				
Motorized	2,054	38.6%	25,360	73.9%
Non-motorized	1,927	36.2%	6,881	20.1%
Unknown	1,342	25.2%	2,078	6.1%
Aircraft	144	2.7%	1,679	4.9%
Horse	26	0.5%	185	0.5%
Boat	262	4.9%	2,223	6.5%
3 or 4 Wheeler	1,265	23.8%	16,655	48.5%
Snowmachine	14	0.3%	85	0.2%
Off-road vehicle	362	6.8%	4,521	13.2%
Hwy vehicle (foot)	1,901	35.7%	6,696	19.5%
Airboat	7	0.1%	197	0.6%
Unknown	1,342	25.2%	2,078	6.1%
Total all hunters	5,323		34,319	
<i>Successful hunters</i>				
Motorized	456	56.9%	5,410	87.4%
Non-motorized	269	33.6%	684	11.1%
Unknown	76	9.5%	94	1.5%
Aircraft	45	5.6%	483	7.8%
Horse	8	1.0%	70	1.1%
Boat	24	3.0%	290	4.7%
3 or 4 Wheeler	288	36.0%	3,389	54.8%
Snowmachine	0	0.0%	12	0.2%
Off-road vehicle	99	12.4%	1,194	19.3%
Hwy vehicle (foot)	261	32.6%	614	9.9%
Airboat	0	0.0%	42	0.7%
Unknown	76	9.5%	94	1.5%
Total successful hunters	801		6,188	

Table 10. Mean annual number of all hunters and successful hunters by transport type, GMU 13 moose, 2009–2016. (ADF&G 2017a: 44)

For all hunters, motorized transport was the primary mode of transportation (local 38.6%, nonlocal 73.9%). But only 23.8% of the local hunters used 3 or 4 wheelers and 6.8% off road vehicles. In contrast 48.5% and 13.2% of the non-local hunters used 3- or 4-wheelers and off-road vehicles. The primary mode of transportation for local people was highway vehicle or foot (35.7%) whereas only 19.5% of nonlocal hunters used highway vehicles or foot as mode of transport for hunting. For the successful hunters the figures are even more explicit: 56.9% of the successful local hunters used motorized transportation. For outside hunters this figure is much higher with 87.4%. For successful local resident moose hunters in the years 2009-2016 3- or 4-wheelers were the primary method of transportation (36.0%). This was followed by highway vehicle (32.6%), off-road vehicle (12.4%), aircraft (5.6%), boat (3.0%) and horse (1.0%). For successful nonlocal resident hunters the figure for motorized transportation was much higher (87.4%). The primary method of transportation for successful nonlocal hunters was 3- or 4-wheelers (54.8%). This was followed by off-road vehicles (19.3%), highway vehicles (9.9%), aircraft (7.8%), boat (4.7%) and horse (1.1%). This data shows clearly the influence of the mode of transportation on the hunting success. Peltó labeled this phenomenon ‘techno-economic differentiation’ in 1973 (1987) as previously discussed (section 3.4). ‘Techno-economic differentiation’ meaning that “specific groups of people acquire the means to utilize superior technology” (ADF&G 2017a: 26) with which other groups of people cannot compete with because they cannot afford the necessary equipment. As pointed out by ADF&G, the impacts of ‘techno-economic differentiation’ are more pronounced in rural regions connected to the road system than in regions not connected to the road system. This is shown by data of lower harvests for communities on the road system in comparison to communities who are not connected to the road system (ADF&G 2017a: 27). Communities that can only be accessed by plane or boat are not exposed to the same pressure in competition for hunting and fishing like the Ahtna region and other road connected areas. GMU 13 lies at the heart of the existing road system. It is bordered on both sides by urban regions that account for more than two thirds of the Alaskan population (see section 6.2, p. 82). It is therefore not surprising that the struggle over resources and the phenomenon of ‘techno-economic differentiation’ becomes a determining factor in this specific region.

Eleanore Dementi commented on this situation talking about the prospect of new roads to communities like Kotzebue and Nome in the future, in an interview at her house in Cantwell during my fieldwork, saying:

So they are gonna be in the same situation as us if that happens. They know. They tell me that we really don't wanna be in your situation. They don't wanna compete with other people like we do [laughs]. (Dementi 2017b, March 28, 2017)

The interconnection of hunting success with mode of transportation as well as with the level of competition was clearly shown by the data on the previous pages. There is one more aspect, for which there is no data at the moment that appears relevant for consideration in the current situation. 'Techno-economic differentiation' does not only operate in the way to distinguish local and nonlocal or urban and rural conditions of economic differentiation but the same effects are also affecting the situation within a specific group (for example among urban hunters). Not all the urban hunters can afford the technological means to use superior hunting strategies. For them the road connection becomes paramount to continue hunting and fishing outside of the city. The wealthier hunters and fishers will use even more superior technology like aircraft to access more remote places, with almost no competition. It is important to keep in mind that the lines of division seldom run clearly and straightforward. More focus and research on this aspect seems valuable.

Equal access and the Alaska constitution

The Alaska Constitution and the decisions of the Alaska Supreme Court state that no distinction is to be made between Alaska residents in the use of natural resources. Equal access and the eligibility of all Alaskans as subsistence users are used as arguments denying any preferences or special provision for specific user groups, be they local or native. Although the State of Alaska promised to secure and provide for Alaska Natives subsistence rights with the passage of ANCSA, the State has not yet managed to get back in compliance with ANILCA by amending the constitution with a rural preference for subsistence. On the contrary, non-rural residents use the federal rural preference as an argument that there is no need for any further provisions.

Stephen Bartelli, representative of the Matanuska Valley Advisory Committee, for example reverses the situation of advantages and disadvantages I presented in this thesis. He states in his public statement at the meeting on behalf of the Advisory Committee:

[W]e would also like to highlight the fact that the communities outlined in the proposals crafted by Ahtna enjoy advantages that are unavailable to the vast majority of the user groups that harvest their food supply from this area. Federal lands in unit 13 constitute 4 million acres, or 28% of the unit and, on these lands, federally qualifying residents are allowed one federal 'any bull' permit and two federal caribou permits per household [...] Another unique advantage enjoyed by these communities is the luxury of geographic proximity. [...] But in the case of unit 13 moose harvest, it is not the communities in the Copper Basin that are disadvantaged. In fact they are the user group with many advantages that are not enjoyed by other groups. Still, it is the Copper Basin communities that are requesting the additional advantage of having the entire allocation of 'any bulls' exclusively to themselves. (Bartelli 2017, oral testimony at BOG meeting)

Other statements with the same intent and line of arguments were brought up during the meeting in oral testimony and written comments by mostly urban hunters. Jim Simon and Michelle Anderson, amongst others, brought up the opposing perspective:

[A]s usual, the system is now being abused by those who do not respect the efforts and intent of this board to provide reasonable opportunities for customary and traditional uses by Alaska Natives as promised in the Alaska Statehood compact, ANCSA, and ANILCA (Simon 2017, oral testimony at BOG meeting)

Our leader were promised when land claims was being negotiated that the State of Alaska would provide for our hunting and fishing needs. We were not made instantly wealthy with the passage of land claims. Our people never asked for much but the one thing they have insisted our leaders continue to fight for is our traditional foods [...] For over 44 years, our people have attended meetings like this one, doing our best to follow state protocol and be respectful. How we, the original citizens of this state, have found ourselves to be in a position of begging to hunt and fish our traditional foods is a sad state of affairs. (Anderson 2017, oral testimony at BOG meeting)

This "sad state of affairs" Michelle Anderson mentions will probably go on as currently an amendment to the constitution seems to have little chances of success. For the Ahtna the solution of this growing competition and a way out of the "sad state of affairs" lies in regulations that restrict the access to the region, whether through more strict eligibility rules for the CSH or a rural preference for subsistence in state law. The Board of Game at the meeting did not pursue one of the two approaches and both do not seem probable in the current political and legal situation. This is why the Ahtna also put their efforts on becoming a partner in the management of wildlife

and created the Ahtna Inter Tribal Resource Commission (AITRC). Up to date they have signed a memorandum of agreement with the Federal government to implement a co-management regime on federal lands that lie within the traditional Ahtna territory. In the next section I briefly describe the AITRC and the memorandum signed with the Federal government, before moving to the concluding section linking all the discussed concerns with the research questions of this thesis and exploring suggestions for future research in the field of wildlife management.

6.6 The Ahtna Inter Tribal Resource Commission and co-management

After the ruling of the Alaska Supreme Court and the opening up of the CSH to all of the Alaskan residents who want to form a group and participate in 2010, the Ahtna people intensified their efforts to get a 'seat on the table' in the management of wildlife and the environment on their traditional land. In 2011, after years of planning, the Ahtna Inter Tribal Resource Commission (AITRC), together with the Copper River-Ahtna Intertribal Resource Conservation District (CRITR) were formed by the 8 federally recognized tribes of Native Village of Cantwell, Mentasta Traditional Council, Cheesha-Na Tribe, the Native Village of Gakona, Gulkana Village, the Native village of Tazlina, the Native Village of Kluti-Kaah and the Native Village of Chitina. Ahtna Inc. and Chitina Native Corporation as the landowners are also members of AITRC and CRITR.

The goal of the AITRC and CRITR is to manage their own resources on their own lands and the mission reads: "With self-determination we will conserve, develop, and use our resources for the maximum sustained benefit of our people" (AITRC 2016). With the combination of traditional indigenous ecological knowledge and latest scientific approaches AITRC seeks to improve and manage habitat and wildlife populations and to increase the harvest of game and fish. In their own words:

We are ready to take on the responsibility for wildlife management in the Ahtna Region and have set this as one of our primary strategic goals. We are working on capacity building and are interested in sustainability of all our wildlife species [...] Moose management as our top priority, but Caribou are also recognized as an important subsistence species for the Ahtna people. We are developing a landscape approach to understand where the most important caribou and moose habitats are positioned. We will work to enhance moose habitat through development of early successional habitats [...] The goal is to substantially increase harvest of moose in

our region with responsible management using cultural knowledge and values. (AITRC 2016)

The activities and programs of the AITRC are centered on wildlife, fisheries, habitat and forestry with the goal to improve habitat of moose and caribou and increase the number of animals available for harvest while at the same time also increase the productivity of the forests and the use of timber and biomass.

We are committed to long term sustainable forestry that will work closely with our moose habitat program. Our goal is to produce timber and biomass products and improve productivity of our forests. Our goal is to do this in coordination with wildlife habitat improvement projects and community fire protection plan. (ibid.)

The use of timber, biomass and active forest management for increasing productivity of the forest also brings benefits to the communities in the form of alternative heating:

Our communities have ever increasing petroleum based fuel costs. Our forestry resources can provide a renewable source of affordable fuel that will also reduce pollution and carbon by the forest regeneration process. (ibid.)

The Ahtna people have put substantial effort and commitment in creating the AITRC and an extensive plan to manage not only wildlife but also forest and habitat. They incorporated the latest scientific approaches from the fields of ecology, biology and environmental planning to combine them with their own ecological knowledge and cultural convictions. These efforts culminated in the signing of a memorandum of agreement between AITRC and the Department of the Interior to create a cooperative management regime.

This Memorandum of Agreement (MOA) is entered into for the purpose of formalizing the subsistence wildlife-management partnership between the United States Department of the Interior and the Ahtna Inter Tribal Resource Commission for the allocation and harvest of moose and caribou by rural residents of the Native villages in the Ahtna region on Federal public lands. It also establishes a process for the formation of a local advisory committee and memorializes the parties' mutual goal of developing a regional management plan for moose, caribou, and other wildlife populations traditionally taken by the Ahtna villages to allow for better informed management and decisionmaking in the future. (MOA 2016: 1)

The Memorandum of Agreement (MOA) includes the intention to create an Ahtna region specific local advisory committee to improve the input of local residents and local ecological knowledge. The comprehensive way in which the Ahtna want to combine local indigenous knowledge and scientific methods and techniques for managing their land and resources is impressive and well executed, but the outcome

of this attempt is still uncertain. Eleanore Dementi hopes that the Ahtna finally get their voice:

I think, expect that we will have a say how we hunt on their lands and I think that's a good thing for us. Because that's one of the problems that they never have us our say. (Dementi 2017b, March 28, 2017)

The signing of the MOA was a major step for the Ahtna, but how binding the agreement will be to changing political parties and if the seat on the table the Ahtna fight for will be in the way they envision or just another smokescreen for real participation is uncertain. In Article IV, general provisions (H.) the MOA states, however:

This MOA establishes mutual goals and establishes proposed courses of action for reaching those goals, but it does **not create any legally enforceable obligations or rights** [emphasis by author]. (MOA 2016: 8)

Without any “legally enforceable obligations or rights” the MOA does not provide the Ahtna the necessary participation they envision yet, but the signing is a first step. The AITRC shows that Ahtna are ready and capable in joining the wildlife management on their lands. However, it also shows that Ahtna have accepted the ideas, concepts and associations of scientific, western-styled wildlife management and that they are willing to adopt the necessary language to communicate with scientists and managers in the process. The Ahtna people envision a synthesis of modern science with local, ecological knowledge to improve the habitats and increase the harvests of wildlife on their lands. The Ahtna expect from this to be taken serious as a partner and to have more influence on regulations, but this engagement also holds some risk for the Ahtna (see section 3.3 this thesis). In the conclusion I will link these risks to broader theoretical considerations and explore prospects for future research.

7. Conclusion

In the following concluding pages I will link the raised concerns of the Ahtna and other rural residents of the Copper River Basin with the theoretical questions of this thesis and draw some conclusions for the present case as well as for the broader fields of wildlife management and subsistence research.

In the introduction I posed the question, what impacts and effects does a growing competition from urban hunters have on the subsistence economies of rural communities on the road-system? Further I asked, what changes and impacts on Native people arise from an engagement in bureaucratic procedures of wildlife management?

In the second chapter of this thesis I present my research design, the fieldwork and the applied methods for gathering data.

Chapter 3 first provides the chronological development of the approach of political ecology from the beginning of the 20th century to the present, followed by a short discussion of the ongoing debate in anthropological theory about the relation of nature and society. Two theoretical aspects that relate to the present case study follow this discussion. Firstly, the difficulties of integrating local knowledge of indigenous people into wildlife management system are addressed. The effects and impacts on indigenous people due to the engagement in western-style, rational-driven wildlife management regimes is discussed in connection with the concept of bureaucratization. Secondly, the influences of material aspects, especially road-connection and mode of transportation, on the subsistence economies of Alaska are analyzed, highlighting some important findings and connections.

The fourth chapter gives a historical overview of the most important events and developments related to subsistence in Alaska from the time of purchase by the United States to the present. The last century in Alaska is characterized by huge economic, political, social and cultural transformations, affecting the indigenous population as well as the settled non-Native population.

The fifth chapter chronologically traces the development of wildlife management in North America and presents the current system of wildlife management in Alaska, characterized by the dual-management regime of state and federal agencies. Some of the involved stakeholders, especially the Division of Subsistence, are presented in greater detail. The last part of the chapter shows a distinctive feature of Alaska's

economy: the mixed economies of rural Alaska, characterized by a mix of cash-income and subsistence resources.

The last chapter is divided into two parts. Firstly, the Ahtna people and their territory, the Copper River Basin, are described, focusing on four aspects: the environment and ecology of the Copper River Basin, the population of the Ahtna communities as well as of the neighboring urban centers, the social and political organization of the Ahtna communities, and the subsistence practices, resources and harvests as well as the economic situation of the Copper River Basin in general. The second part of the chapter deals in detail with the Community Subsistence Hunt, showing the regulatory history for moose hunting in the area, describing ecological features of moose and presenting the March 2017 BOG meeting and its findings. This is followed by a discussion of some of the concerns and aspects raised by Ahtna and other rural residents at the BOG meeting connected to the research questions. The last section of the chapter is about the AITRC and efforts of Ahtna to establish a co-management regime with the federal government.

To sum up the outcome of the BOG meeting, the expectations of the Ahtna and other rural residents were not met because the Board did not adopt regulations to restrict participation in the CSH. The Board, however, did connect the allocation of the 100 'any bull' moose to a Tier II scoring system and thereby acknowledged some of the concerns rural residents had with the current form of regulation. Most of the objections of the Ahtna were not satisfied by this compromise, and the raised issues remain valid and relevant. These issues are: the Tier II scoring system, the importance of wild game and 'any bull' moose, the eligibility of groups for the CSH, the growing competition from outside the communities related to the mode of transportation, and the question of equal access written into the constitution of Alaska.

In the next step I want to relate all these aspects to the research questions and draw some conclusions from the presented case for the management of wildlife and natural resources as well as for the anthropological research of political ecology and resource distribution conflicts.

The management of natural resources, especially wild food resources taken for the consumption of humans, is a complex area of huge contestation and conflict, visible in the many distribution conflicts in Alaska and around the world.

The Ahtna currently find themselves in a position of disadvantage compared to other rural, native communities in Alaska. The proximity to the urban centers of Alaska and the accessibility of the region put them under more pressure from outside forces, seen in increased participation in the CSH for moose (see Table 7) as well as for other subsistence resources (see Holen 2010). The increased number of hunters coming into the region for moose hunting creates a situation the Ahtna feel they cannot compete with, as seen in the various testimonies of Ahtna at the meeting. The provided data and analysis of this thesis concurs with this expression, looking at the economic and technological means available for the different groups. The concept of 'techno-economic differentiation,' developed by Pelto (1973, 1987) for the analysis of the introduction of snowmobiles in Lapland and its influence on hunting, gives an opportunity to consider the impact of technological and economic features on subsistence economies. The data linking hunting success rates with the mode of transportation for GMU 13 presented in this thesis (Table 10) clearly shows the linkage between superior technology and hunting success for the respective region. More detailed and precise data, however, is needed to present more conclusive and solid answers to the presented questions. Nevertheless, the data indicates an explicit relation between the special geographical position of the Ahtna, the economic situation and technological features. 'Techno-economic differentiation' becomes more pronounced and impacts are felt stronger in regions connected closer to economic and population centers. The difference between the haves and have nots of economic and technological means becomes more explicit in these regions and conflicts over resources are more intense. The impacts of roads on the subsistence economies of rural communities in Alaska have been mentioned already by Reckord 1983, Wolfe and Walker 1987 and more recently by Magdanz et al. 2016, but there has been no in-depth research of this distinctive feature.

The influence and impact of roads and other linear infrastructure (like railways) on humans and wildlife in relation to ecological questions has led to the emergence of the field 'road ecology' (see Van der Ree/Smith/Grilo 2015, Fahrig/Rytwinski 2009, Forman/Alexander 1998), and an incorporation of this field and their findings into the research of subsistence hunting and wildlife management seems fruitful. Also, ADF&G and other government agencies involved in the process of natural resource management can profit from a focus on material aspects and the role and influence of built infrastructure. The connection between income, wage labor and subsistence

hunting is a well-established fact in subsistence research in Alaska, but the findings of anthropologists are often not reflected in the decisions and regulations of the management system.

Apart from this, 'techno-economic differentiation' is also experienced by rural communities, possibly leading to social stratification and economic differentiation. The 'super-household' (Wolfe et al. 2010) can be seen as a manifestation of these processes. These developments and their consequences, which were not dealt with in this thesis, also deserve more in-depth research. On the other hand, it is important to remember that the technological developments and input from outside energy sources (for example fossil fuels) are an important feature enabling the subsistence economies of rural Alaska to continue, as discussed, for example, by Van Lanen (2017).

The geographical and economic situation of the Ahtna is not unique; other indigenous groups around the world experience the same pressure and disadvantages due to their spatial locality. Further economic and demographic development and the construction of roads and other industrial complexes in Alaska can put other rural communities and Native groups into the same position in the future. Therefore wildlife management should put more focus on material and infrastructural aspects regarding its decisions about regulations for hunting, fishing and gathering of wild food resources.

Of course, this is not to say that road-connection and 'techno-economic differentiation' are the only factors contributing to the reduced harvests of communities on the road system, but an impact is traceable. With more in-depth research and detailed data, the interaction and connections between these and additional factors can be shown more conclusively, and the knowledge about contemporary subsistence economies in Alaska can be extended. Mouhcine Guettabi et al. (2016), for example, tried to evaluate the potential effects of an industrial road on subsistence economies inside the Gates of the Arctic National Park and Preserve. In their analysis, the proposed road to the Ambler Mining District would have severe economic effects on the subsistence harvests of rural residents. More research with the same direction seems promising and fruitful.

Ahtna engagement in the regulatory process is one of the strategies used to gain more influence in decision-making inside the system, but state law and the constitution of Alaska do not provide many options for participation. This is why the

Ahtna shifted their focus to the federal government for a co-management agreement, but this engagement also holds some risk for the Ahtna and indigenous people in general (see Chapter 3.3.).

As Nadasdy (2003b, 2005) has argued, the engagement of indigenous people in co-management regimes can transform them into bureaucrats who have the same conceptions and ideas about wildlife as non-indigenous bureaucrats. Participation in the bureaucratic procedures of wildlife management draws people from the land into offices, and relying on western, scientific approaches can lead to losses in local ecological knowledge. Eventually, the Ahtna people will have to choose between their long standing traditions, values, experiences and knowledge and the western scientific knowledge and maybe, in the end, even reject their own beliefs. At the same time, co-management or adaptive co-management structures (see Armitage et al. 2009 or Armitage/Berkes/Doubleday 2007 for some examples of co- and adaptive co-management processes), despite frequently reported fruitful outcomes and the idea of more democratic processes, often do not tackle the inherent power structures and the role of stakeholders and interest groups with uneven economic, political and social power and means to change political decisions (Nadasdy 2007). Political ecology, with its main emphasis on the political economy of ecological subjects and a strong focus on material factors, gives a perspective capable of providing answers to questions sometimes overlooked or neglected. In this thesis I tried to accomplish such a perspective, putting emphasis on the efforts of the Ahtna to change regulations to their favor. At the same time, however, I tried to show with a historical, political, economic and legal analysis that their struggle with state officials in the current situation appears to be a tilt at windmills. Despite hoping for change, the Ahtna are, as shown, aware of the situation and have shifted their efforts towards the federal agencies, and they adopted techniques and methods from the current wildlife management system to create the AITRC.

However, this emphasis on power structure and the possible negative outcomes from adopting a rational-styled management approach does not mean that the Ahtna people are incapable of accomplishing a new synthesis of local, ecological knowledge with modern wildlife management and new scientific approaches. Rather, I want to stress that these possibilities have to be acknowledged and considered by the Ahtna themselves as well as by other wildlife managers and political stakeholders. The Native people of Alaska have a remarkable history of resisting

assimilation policies and have retained strong tribal and community organization despite the spread of industrial development, capitalism and bureaucracy. Dayo and Kofinas (2010) analyzed the ability of Native corporations created by ANCSA to adopt and use legal and political means to maintain their Native homeland and concluded that Alaska Natives have proven to be capable of strengthening “their indigenous identity and revitalize their cultural traditions” (p. 142) in spite of the goal of assimilation. This remarkable ability of the Alaska Native people to withstand and transform negative developments will give Ahtna strategies to cope with the current situation. The special geographical position that disadvantages them in regard to their subsistence economy also yields possible positive developments in economic terms for the future. The proximity to major population centers and the accessibility of the region through road-connection provides opportunities for touristic development, a growing economic sector inside Alaska with many possibilities for new sources of income without relying on industrial exploitation of resources.

To conclude, the provided data and analysis of the Ahtna case seem to confirm that growing competition and road-connection diminish the ability of rural communities to harvest wild resources while at the same time pressuring them to engage in and adopt a bureaucratic, rational-driven style of wildlife management. This correlation between lower harvest levels, connection to the road system and growing competition, however, cannot be reduced to a simple causal relationship, and subsistence economies and life in rural Alaska display a highly complex system affected by a variety of influential interconnected and interacting factors. This complex setting and the variety of factors involved need additional in-depth research as well as more specific and detailed data to draw more conclusive findings for the urging problems and conflicts.

A wildlife management system that regulates subsistence hunting and fishing and tries to reconcile the diverse existing interests would benefit from a focus and incorporation of these material aspects into the decision-making process. By acknowledging the differing geographic positions and economic situations of specific regions and groups inside the system, a more robust management system that accommodates local needs and demands could be generated.

What else can be drawn from the current resource conflict presented in this thesis for the Ahtna? I already showed the influence and impact of roads and the technological and economic differentiation on rural subsistence economies, and I discussed the

risks for indigenous people of engaging in a co-management regime. The Ahtna people, however, still must find a way of securing the necessary foods and, at the same time, defending their values, beliefs and customs while the competition from outside continues to grow.

While I showed in this thesis that there is currently a large enough surplus in the moose population of GMU 13 due to and in accordance with the management practices and objectives of ADF&G, the presented struggle is not only about how to distribute the available resources – it is also a question of cultural sovereignty, long-term dependence and the consistent reliability of the meat harvest in the coming years, which comes as a part of economic security and stability in the region. Without economic security, greater dependency on the welfare system and increasing homelessness are possible effects. Furthermore, it is also about recognizing culturally distinct patterns of subsistence use and the accompanying implications. This was shown in the actions and efforts taken by the Ahtna to establish a community subsistence hunt instead of a hunt based on an individual pattern, and especially in the efforts to put an ‘any bull’ quota into the regulations.

The Board of Game recognized this pattern of use in their 2006 finding, and this thesis made explicit the efforts and attempts of the Board of Game and ADF&G to accommodate the wants and needs of the Ahtna people despite the influence of recreational and sport hunters and the constant threat of litigation. But the influence and scope of the board is limited and may not be consistent over time as new members representing different interests are appointed. The threat of litigation due to violations of equal access and preferential regulations can only be superseded by an amendment of a rural preference to the Alaska Constitution, but how realistic is that? An amendment to the constitution might be possible in the future if the growing urban population becomes more and more alienated from hunting and fishing, but growing numbers of participants in the wildlife activities and recreational as well as sport hunting and fishing mitigate this possibility. Subsistence has become part of the general Alaskan lifestyle in the minds of many but, for most of them, it is not a real commitment to a subsistence lifestyle as the Ahtna and Alaska Native people in general understand it. It is an area of interest and field of activity that is definitely pursued with pleasure and dedication by most, but it can be skipped without negative consequences if time or work does not allow it. The situation of the Ahtna is different, as I show throughout the thesis. I do not mean to say that their individual survival is

dependent on the ability to hunt moose, but that their cultural, social and familial relationships are tightly linked to the ability and right to harvest, distribute and consume wild foods. Without a reliable possibility to continue doing so, the Ahtna culture will diminish its vital role in the life of Ahtna. The trend for this is visible (for example in the language loss) and the impacts of the capitalist mode of production and its accompanying social effects²¹ are present in higher statistical figures in Alaska generally and in rural places specifically (alcoholism, drug abuse, domestic violence, crime and suicide). A strong Ahtna culture can have diminishing and mitigating influences on the mentioned effects. Ahtna people will have to think of and invest in new ways of social and cultural support systems, incorporating the new developments that they have already started in past years (see for example the Robert Marshall Building of the Copper River Native Association²² that unites various services and resources like primary care, dental care, elder services and youth development under one location for the Ahtna people).

Without the amendment to the constitution, every attempt by the Board and Native and rural groups to implement some kind of preference or exclusive access will be fought in the court by interest groups and individuals. It is also important to consider that the current conflict over regulations and distribution happens in times of abundance of wild games, when the moose population in GMU 13 is currently healthy and stable. This will not always be the case, and the situation can change quite rapidly from abundance to scarcity. The defense of the equal access clause in court and the involvement of recreational, sport and subsistence hunters from urban areas in the regulatory process as well as the influence exerted on political actors are going to increase when wild game becomes scarcer.

In the current situation, without signs of changing attitude towards amending the constitution, more efforts toward cooperative management with the State and more involvement in regulatory processes does not seem to be very well invested. Instead, the Ahtna are currently putting their efforts into a binding agreement with the federal government that implements rights and obligations and a real cooperative management structure.

However, most of the Ahtna traditional territory is state managed, and a shift of hunting grounds towards the federal lands (National Park and Preserve lands and

²¹ see for example: Alaska State Troopers 2015; Department of Health and Social Services 2018, 2017, 2016, 2015; Justice Center 2017; Rivera/Hall 2016; Rivera 2014.

²² See <https://crnative.org> for more information on the Copper River Native Association

BLM lands) will therefore be needed, plus the Ahtna may have to define a new hunting territory not equal to the traditional one. With this also comes the question of developing alternative hunting techniques and methods of transportation. The preferred mode of hunting with highway vehicles, referred to by Holly Reckord as 'road hunting' (1983), already had a diminishing success rate in 1983. By new hunting methods and modes of transportation I mean, for example, the long practiced mode of walking (known and practiced by the Ahtna for very long time, but less practiced in recent decades), or more recently and unknown to the Ahtna, modes of transportation like riding a bicycle or a horse. Walking takes much more time, of course, and the difficulty is bringing the meat back to the road, but one can also reach less accessible regions where there is not so much competition and moose are easier to find. One could even access parts of the land where motorized vehicles are not allowed to go. Going by bicycle is a new form of transportation not very common in hunting contexts, but recently in urban areas some groups have formed who use the bicycle as an efficient mode of transportation in hunting (personal conversation with James Van Lanen, 2017). Some experimentation by Ahtna hunters with these new means of transportation could turn out to be promising. Along with modifying hunting techniques and modes of transportation to adapt to new and changing conditions, the Ahtna also have to invest in new economic prospects and find ways of developing a balanced economic stability for people with long-term security. To find new and sustainable ways to use the natural resources surrounding the Ahtna will help ease the economic pressure. One example of doing this is the forest project within the AITRC, which intends to replace biomass with fuel for heating. New ideas and concepts like these will help the Ahtna adapt to the changing circumstances they face. The past shows that the Ahtna have been more than capable of adapting to an ecologically harsh environment, forming it into a culturally rich place with perfectly adapted modes of food production. I am convinced that the Ahtna will accomplish this once more in the face of the present politically harsh environment.

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9. Appendix

Appendix A: Abstract (English)

This thesis analyzes the impacts of increased competition for wild food subsistence resources on rural communities in South-Central Alaska with a detailed case study of the most popular Game Management Unit (GMU 13) that lies within the traditional hunting territory of the Ahtna, a group of Athabascan Indians living in the Copper River Basin, Alaska. The current conflict, which concerns moose hunting and the 'Community Subsistence Hunt' in GMU 13 and the efforts of the Ahtna in taking a meaningful role in the management of wildlife, is analyzed with the approach of political ecology. The effects of increasing competition for limited resources due to a growing urban population and easy road access to the region are discussed with the concept of 'techno-economic differentiation'. Furthermore, the impacts of bureaucratic policy making and the integration of local knowledge in wildlife management on Native people are explored. This thesis is built on qualitative material collected during two fieldwork trips in 2015 and 2017 as well as on quantitative data from a review of research and reports about Alaska's subsistence economies. The results of the presented case study reveal that communities with road-connection to urban areas are far more exposed quantitatively as well as qualitatively to competition for wild resources. The influence of 'techno-economic differentiation' between the haves and the have-nots of advanced hunting and transportation equipment becomes more explicit in areas with greater competition and the struggle for a 'seat on the table' of decision making by Alaska Natives receives more opposition.

Alaska, subsistence, Ahtna, Alaska Natives, wildlife management, political ecology

Appendix B: Abstract (German):

Diese Masterarbeit analysiert die Auswirkungen des verstärkten Wettbewerbs um Wildressourcen aufgrund wachsender Konkurrenz aus städtischen Gebieten auf ländliche Gemeinden in Zentral-Alaska. Speziell wird auf die Situation in Game Management Unit 13 (GMU 13) eingegangen. GMU 13 umfasst den Großteil des von den Ahtna, einer Gruppe Athabaskisch sprechender Alaska Natives, welche im Copper River Basin leben, genutzten Jagdterritoriums. Mit dem Konzept der Politischen Ökologie wird die Situation der Ahtna detailliert beschrieben und eine Fallstudie über den aktuellen Konflikt um die Elchjagd und den "Community Subsistence Hunt" präsentiert. Außerdem wird auf die Versuche der Ahtna eingegangen Partner des Entscheidungsprozesses im Wildtiermanagement zu werden. Die Auswirkungen der steigenden Konkurrenz aus städtischen Gebieten, aufgrund der leichten Erreichbarkeit der Region durch die Anbindung an das Straßennetz, wird anhand des Konzepts der „technisch-ökonomischen Differenzierung“ diskutiert. Zusätzlich werden die Auswirkungen bürokratischer Politikgestaltung und der Integration von lokalem Wissen in das Wildtiermanagement auf indigene Menschen untersucht. Das qualitativ erhobene Material für diese Masterarbeit stammt aus zwei Forschungsaufenthalten in Alaska in 2015 und 2017, und die quantitativen Daten entstammen einer ausgiebigen Recherche von Forschungsarbeiten und Berichten über die Subsistenzökonomien Alaskas. Die Ergebnisse der Arbeit zeigen, dass leicht erreichbare ländliche Gemeinden stärker einer quantitativen aber auch qualitativen Konkurrenz, die Auswirkungen auf den Ertrag von Jagd- und Fischressourcen hat, ausgesetzt sind. Die Auswirkungen von "technisch-ökonomischer Differenzierung" bezüglich Jagdausrüstung und Transportmitteln werden stärker sichtbar in Gebieten mit hoher Konkurrenz. Außerdem hat sich gezeigt, dass der Widerstand gegenüber der Einbindung von Alaska Natives am Entscheidungsprozess intensiver wird.

Alaska, Subsistenz, Ahtna, Alaska Natives, Wildtiermanagement, Politische Ökologie

Appendix C: Identifying a Legal Moose, Antler Restrictions (ADF&G 2017b: 30f.)

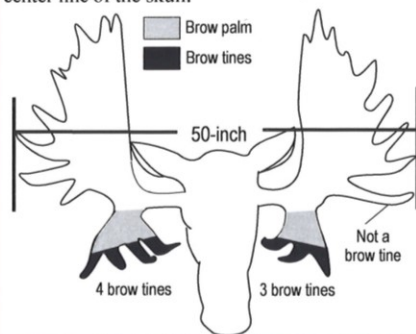
Identifying a legal moose in antler restricted hunts

In many units, regulations restrict the harvest of bull moose to a specific antler size or configuration. The accompanying illustrations provide general assistance to hunters in field identification of moose antler size and configuration. It must be emphasized that moose antlers vary considerably. Each hunter is responsible for determining if a moose is legal before attempting to take it.

Legal bull moose in areas with a 50-inch antler OR number of brow tines restriction:

Antler restrictions are defined by both an antler spread and a brow tine restriction. The brow tine portion of the 50-inch antler restriction is intended to help verify a legal moose if the hunter is uncertain about antler spread. If uncertain about the antler spread, count brow tines. If uncertain about the number of brow tines, don't shoot!

50-inch antlers means the antlers of a bull moose with a spread of 50 inches or more measured in a straight line perpendicular to the center line of the skull.



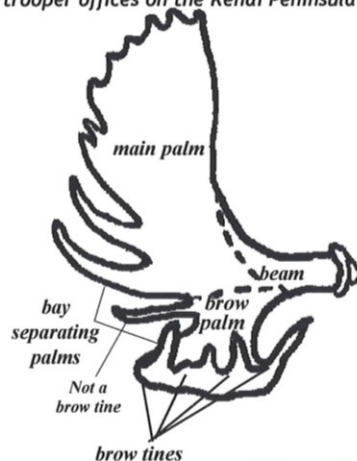
In some areas of the state, bulls with antlers less than 50 inches wide are legal if they have at least 3 brow tines on EITHER side. In other areas, bulls with antlers less than 50 inches wide must have at least 4 brow tines on EITHER side to be legal. Be sure to check the regulations for the brow tine minimum requirement in the area you are hunting.

However, if the antlers are 50 or more inches wide, it doesn't matter how many brow tines are present, the moose is legal. Likewise, if the moose has the required number of brow tines, it is legal regardless of the antler spread.

To accurately identify and count brow tines, bulls must be viewed from the front; viewing from the side runs a risk of counting main palm points as brow tines. On bulls with substantially less than 50-inch antler spreads, distinguishing legal brow tines can be difficult. Brow tines emerge from the brow palm or near the base of the antler and typically project forward.

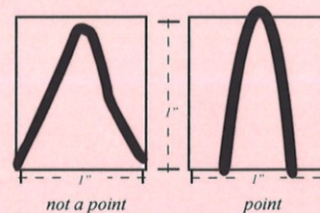
Antlers must be salvaged where there are antler restrictions; such antlers must remain naturally attached to the unbroken or uncut skull plate if the required number of brow tines are not present.

If antlers must be salvaged, they may not be altered prior to completion of all salvage requirements. In Units 7 and 15, antlers are required to be sealed in Homer, Soldotna, or Anchorage ADF&G offices within ten days of take. Wildlife trooper offices on the Kenai Peninsula can also seal antlers by appointment.



"Brow tine" means a tine emerging from the first branch or brow palm on the main beam of a moose antler; the brow palm is separated from the main palm by a wide bay; a tine originating in or after this bay is not a brow tine.

Identifying a point or tine:



A point or tine is an antler projection at least one inch long, and longer than it is wide, with the width measured one inch or more from the tip.

The use of electronic moose calls for hunting is prohibited.

To better understand the spike-fork 50-inch antler restriction, check out the DVD 'Is This Moose Legal?' at your nearest ADF&G office or online: <http://www.adfg.alaska.gov/index.cfm?adfg=moosehunting.resources>
For some hunts, viewing of this video is required prior to hunting.

All hunters must successfully complete the Moose Hunter Orientation prior to hunting moose in Units 7 and 15. The orientation is available online at <http://hunt.alaska.gov/>, see page 88 for more details.

Legal bull moose in areas with a spike restriction (only in Units 7 and 15)

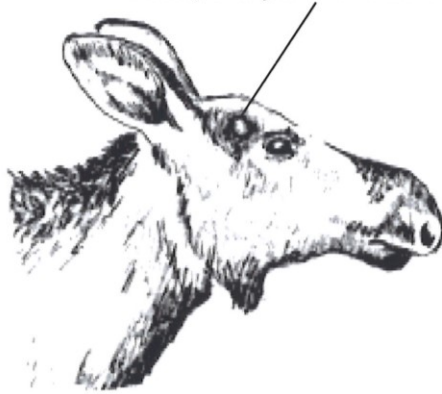
A spike bull is legal if it has one antler on either side that is a SPIKE (1 point). The antler on the other side can be any configuration. Bulls with palmated antlers (paddles) seldom are legal under the "spike" requirement.



"Spike" means antlers of a bull moose with only one tine on at least one side; male calves are not spike bulls.

A point or tine is an antler projection at least one inch long, and longer than it is wide, with the width measured one inch or more from the tip.

Some male calves have a small amount of antler growth covered with hair and skin. These are still calves and are not legal in a spike, spike-fork, or antlered bull hunt. Male calves are only legal in antlerless, any moose, or any bull hunts that do not specifically prohibit the taking of calves.



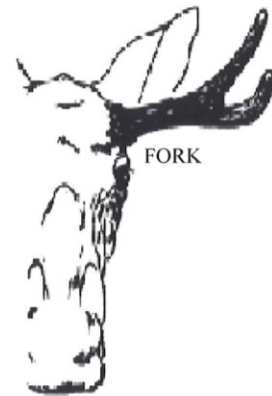
Special meat salvage requirements:
Moose taken before October 1 in Units 9B, 13, 17, 18, those portions of 19A within the Holitna/Hoholitna Controlled Use Area, 19B, 21, 23, 24, and 25, the edible meat of the front quarters and hindquarters must remain naturally attached to the bone until the meat has been transported from the field or is processed for human consumption, and in Units 13, 21, 23, 24, and 25, the edible meat of the ribs also must remain naturally attached to the bone.
(See salvage, page 22.)

Legal bull moose in areas with a spike-fork restriction

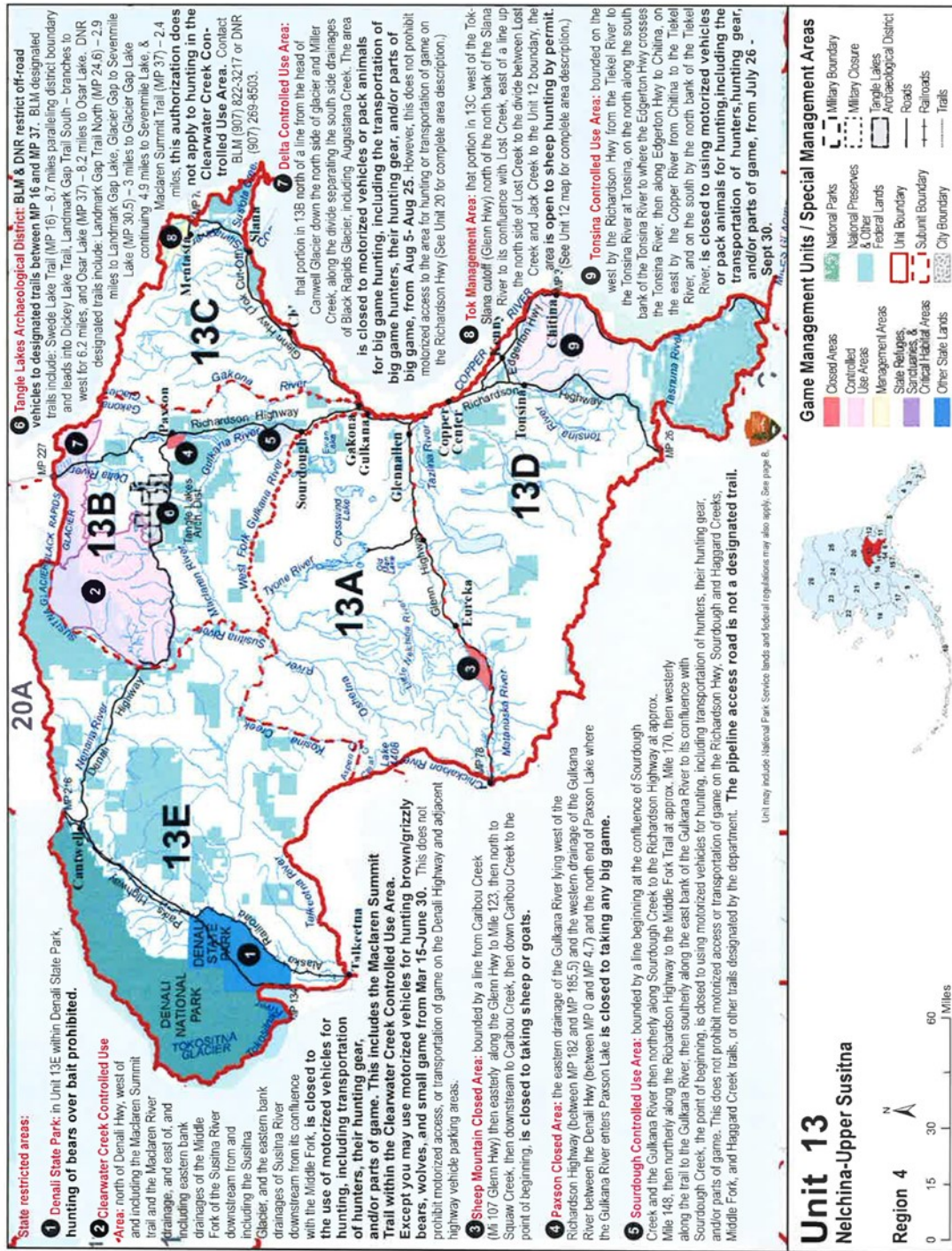
A spike-fork bull is legal if it has one antler on either side that is a SPIKE (1 point) or a FORK (2 points). The antler on the other side can be any configuration. A point or tine originating within two inches of the base of the antler and less than three inches in length will not be counted as a point or a tine. Males calves are not considered spike bulls. Bulls with palmated antlers (paddles) seldom are legal under the "spike or fork" requirement.



If antlers must be salvaged, they may not be altered prior to completion of all salvage requirements. A damaged, broken or altered antler is not considered a spike-fork antler in Units 1B, that portion of 1C south of Point Hobart, including all Port Houghton drainages, and 3.



Appendix D: Hunting Regulations Game Management Unit 13, Alaska Hunting Regulations 2017-2019. (ADF&G 2017d: 75-78)



Unit 13

Nelchina-Upper Susitna

See map on page 75 for state restricted areas in Unit 13

Unit 13: That area westerly of the easternmost bank of the Copper River from Miles Glacier north to the confluence with the Slana River, then along the east bank of the Slana River to Suslota Creek, and that area of the Slana River drainage north of the south bank of Suslota Creek; the drainages into the Delta River upstream from Falls Creek and Black Rapids Glacier; the drainages into the Nenana River upstream from the southeast corner of Denali National Park at Windy; the drainage into the Susitna River upstream from its junction with the Chulitna River; the drainage into the east bank of the Chulitna River upstream to its confluence with Tokositna River; the drainages of the Chulitna River (south of Denali National Park) upstream from its confluence with the Tokositna River; the drainages into the north bank of the Tokositna River upstream to the base of the Tokositna Glacier; the drainages into the Tokositna Glacier; the drainages into the east bank of the Susitna River between its confluence with the Talkeetna and Chulitna Rivers; the drainages into the north and east bank of the Talkeetna River and including the Talkeetna River, to its confluence with Clear Creek, the eastside drainages of a line going up the south bank of Clear Creek to the first unnamed creek on the south, then up that unnamed creek to lake 4408, along the northeast shore of lake 4408, then southeast in a straight line to the northernmost fork of the Chickaloon River; the drainages into the east bank of the Chickaloon River below the line from lake 4408; the drainages of the Matanuska River above its confluence with the Chickaloon River;

Unit 13A: bounded by a line beginning at the Chickaloon River bridge at Mile 77.7 on the Glenn Highway, then along the Glenn Highway to its junction with the Richardson Highway, then east to the east bank of the Copper River, then northerly along the east bank of the Copper River to its junction with the Gulkana River, then northerly along the west bank of the Gulkana River to its junction with the West Fork of the Gulkana River, then westerly along the west bank of the West Fork of the Gulkana River to its source, an unnamed lake, then across the divide into the Tyone River drainage, down an unnamed stream into the Tyone River, then down the Tyone River to the Susitna River, then down the southern bank of the Susitna River to the mouth of Kosina Creek, then up Kosina Creek to its headwaters, then across the divide and down Aspen Creek to the Talkeetna River, then southerly along the boundary of Unit 13 to the Chickaloon River bridge, the point of beginning;

Unit 13B: bounded by a line beginning at the confluence of the Copper River and the Gulkana River, then up the east bank of the Copper River to the Gakona River, then up the east bank of the Gakona River and Gakona Glacier to the boundary of Unit 13, then westerly along the boundary of Unit 13 to the Susitna Glacier, then southerly along the west bank of the Susitna Glacier and the Susitna River to the Tyone River, then up the Tyone River and across the divide to the headwaters of the West Fork of the Gulkana River, then down the West Fork of the Gulkana River to the confluence of the Gulkana River and the Copper River, the point of beginning;

Unit 13C: Unit 13 east of the east bank of the Gakona River and Gakona Glacier;

Unit 13D: Unit 13 south of Unit 13A;

Unit 13E: the remainder of Unit 13.

OPEN TO:	R = RESIDENTS ONLY	B = RESIDENTS AND NONRESIDENTS	N = NONRESIDENTS ONLY		
OPEN TO:	UNIT/ AREA	BAG LIMIT AND SPECIAL INSTRUCTIONS		PERMIT/ HUNT #*	OPEN SEASON
Black Bear • See pages 24-28 for bear information and salvage requirements.					
B	13	Three bears		HT	no closed season
Brown/Grizzly Bear <ul style="list-style-type: none"> • No resident tag required. • Nonresident hunters must be accompanied by a guide, see page 10. • See pages 24-28 for additional bear hunting information. • Evidence of sex must remain naturally attached to the hide. 					
B	13E	within Denali State Park	One bear every regulatory year		Aug 10-June 15
B	13	remainder	One bear every regulatory year		no closed season
Bison • Nonresidents can only win one bison permit per lifetime.					
R	13D	east of the Edgerton Highway	One bison by permit every ten regulatory years	DI454	Sept 1-Mar 31
N			One bison by permit, per lifetime		
Caribou <ul style="list-style-type: none"> • In bag limit, "caribou" means an animal of either sex. • Proxy hunting restrictions apply, see page 12. • Nelchina Herd information is available by calling (907) 267-2304. • Meat taken prior to Oct 1 in Unit 13 must remain on the bones of the front quarters, hindquarters, and ribs until removed from the field or processed for human consumption. 					
R	13	OR	One caribou by permit per household, available only by application. See Subsistence Permit Hunt Supplement for details	RC566	Aug 10-Sept 20 Oct 21-Mar 31
R			One caribou by permit per household, available only by application. See Subsistence Permit Hunt Supplement for details	CC001	Aug 10-Sept 20 Oct 21-Mar 31
R			One caribou by permit	DC485	Aug 20-Sept 20 Oct 21-Mar 31
N	13				no open season

*Hunt numbers starting with a "C" = Community, "D" = Drawing, "HT" = Harvest ticket, "R" = Registration, "T" = Tier II. See pages 14-15.

OPEN TO:		R = RESIDENTS ONLY	B = RESIDENTS AND NONRESIDENTS	N = NONRESIDENTS ONLY	
OPEN TO:	UNIT/ AREA	BAG LIMIT AND SPECIAL INSTRUCTIONS		PERMIT/ HUNT #*	OPEN SEASON
Goat					
<ul style="list-style-type: none"> • Taking of nannies with kids is prohibited. Taking of males is encouraged. • Information on sex identification available with permits. • Nonresident hunters must be accompanied by a guide, see page 10. 					
B	13D	south of the Tiekel River and east of a line beginning at the confluence of the Tiekel and Tsina rivers	One goat by permit available in person in Anchorage, Fairbanks, Palmer, and Glennallen, or by mail from Glennallen beginning Aug 9	RG580	Sept 1-Nov 30
B	13D	remainder	One goat by permit	DG720	Aug 10-Nov 30
B	13	remainder			no open season
Moose					
<ul style="list-style-type: none"> • In bag limit, "moose" means an animal of either sex; "bull" means a male moose. • Spike-fork, 50-inch antlers, and brow tines are defined on pages 30-31. • In all hunts limited to one sex, evidence of sex must remain naturally attached to the meat. • Proxy hunting restrictions apply, see page 12. • Prior to Oct 1, meat must remain on the bones of the front quarters, hindquarters, and ribs until removed from the field or processed for human consumption. 					
R	13	OR	One antlered bull by permit, available only by application. See the Subsistence Permit Hunt Supplement for details	CM300	Aug 20-Sept 20
R			One bull with spike-fork or 50-inch antlers or antlers with 4 or more brow tines on at least one side	HT	Sept 1-Sept 20
R			One antlerless moose by permit. However, no person may take a calf or cow accompanied by a calf	DM325	Oct 1 - Oct 31 Mar 1 - Mar 31
R			One bull by permit	DM324	Sept 1-Sept 20
N	13		One bull with 50-inch antlers or antlers with 4 or more brow tines on at least one side	DM335-DM339	Sept 1-Sept 20
Sheep					
<ul style="list-style-type: none"> • Nonresident hunters must be accompanied by a guide, see page 10. • See definition of full-curl horn and drawings on page 33. • Ram horns must be sealed within 30 days of kill and horns must accompany meat from the field. 					
R	13A		One ram with full-curl horn or larger. Youth hunt only	HT	Aug 1-Aug 5
N			One ram with full-curl horn or larger every four regulatory years. Youth hunt only		
R			One ram with full-curl horn or larger	HT	Aug 10-Sept 20
N			One ram with full-curl horn or larger every four regulatory years		
R	13B	within Delta Controlled Use Area	One ram with full-curl horn or larger by permit	DS203	Aug 10-Aug 25
N			One ram with full-curl horn or larger every four regulatory years		
R			One ram with full-curl horn or larger by permit	DS204	Aug 26-Sept 20
N			One ram with full-curl horn or larger every four regulatory years		
R	13B	remainder	One ram with full-curl horn or larger. Youth hunt only	HT	Aug 1-Aug 5
N			One ram with full-curl horn or larger every four regulatory years. Youth hunt only		
R			One ram with full-curl horn or larger	HT	Aug 10-Sept 20
N			One ram with full-curl horn or larger every four regulatory years		
B	13C	within Tok Management Area	One ram with full-curl horn or larger every four regulatory years by permit	DS102	Aug 10-Aug 25
B			DS103	Aug 26-Sept 20	

*Hunt numbers starting with a "C" = Community, "D" = Drawing, "HT" = Harvest ticket, "R" = Registration, "T" = Tier II. See pages 14-15.

OPEN TO:		R = RESIDENTS ONLY	B = RESIDENTS AND NONRESIDENTS	N = NONRESIDENTS ONLY		
OPEN TO:	UNIT/ AREA	BAG LIMIT AND SPECIAL INSTRUCTIONS			PERMIT/ HUNT #*	OPEN SEASON
Sheep <i>continued</i>						
R	13C remainder	One ram with full-curl horn or larger. <i>Youth hunt only</i>			HT	Aug 1-Aug 5
N		One ram with full-curl horn or larger every four regulatory years. <i>Youth hunt only</i>				
R		One ram with full-curl horn or larger			HT	Aug 10-Sept 20
N		One ram with full-curl horn or larger every four regulatory years				
R	13D	east of a line along the west side of Tazlina Glacier, Tazlina Lake and Mendeltna Creek to the Richardson Highway	One ram with full-curl horn or larger by permit		DS165	Aug 10-Sept 20
N			One ram with full-curl horn or larger every four regulatory years		DS265	
R	13D	west of a line along the west side of Tazlina Glacier, Tazlina Lake and Mendeltna Creek	One ram by permit		DS160	Aug 10-Sept 20
N			One ram every four regulatory years by permit		DS260	
R	13D remainder	One ram with full-curl horn or larger. <i>Youth hunt only</i>			HT	Aug 1-Aug 5
N		One ram with full-curl horn or larger every four regulatory years. <i>Youth hunt only</i>				
R		One ram with full-curl horn or larger			HT	Aug 10-Sept 20
N		One ram with full-curl horn or larger every four regulatory years				
R	13E	One ram with full-curl horn or larger. <i>Youth hunt only</i>			HT	Aug 1-Aug 5
N		One ram with full-curl horn or larger every four regulatory years. <i>Youth hunt only</i>				
R		One ram with full-curl horn or larger			HT	Aug 10-Sept 20
N		One ram with full-curl horn or larger every four regulatory years				
Wolf		• Hides must be sealed within 30 days of kill. • No nonresident tag required.		A portion of this unit is within a predator control area. See predator control supplement for special regulations. Supplement available online at http://hunt.alaska.gov		
B	13	Ten wolves per day				Aug 10-Apr 30
Wolverine		• Hides must be sealed within 30 days of kill.				
B	13E	One wolverine				Sept 1-Jan 31

*Hunt numbers starting with a "C" = Community, "D" = Drawing, "HT" = Harvest ticket, "R" = Registration, "T" = Tier II. See pages 14-15.

Appendix E: List of Species and Resources used by selected Communities in the Copper River Basin 2013 (Holen/Hazel/Zimpelman 2015: 4-7).

Table 1-2.--Species list, study communities, 2013.

Common name	Scientific name
Chum salmon	<i>Oncorhynchus keta</i>
Coho salmon	<i>Oncorhynchus kisutch</i>
Chinook salmon	<i>Oncorhynchus tshawytscha</i>
Pink salmon	<i>Oncorhynchus gorbuscha</i>
Sockeye salmon	<i>Oncorhynchus nerka</i>
Landlocked salmon	<i>Oncorhynchus spp.</i>
Unknown salmon	<i>Oncorhynchus spp.</i>
Pacific herring	<i>Clupea pallasi</i>
Pacific herring sac roe	<i>Clupea pallasi</i>
Pacific herring spawn on kelp	<i>Clupea pallasi</i>
Pacific herring roe on hemlock branches	<i>Clupea pallasi</i>
<i>Smelt</i>	
Eulachon (hooligan, candlefish)	<i>Thaleichthys pacificus</i>
Unknown smelt	
Pacific (gray) cod	<i>Gadus macrocephalus</i>
Pacific tomcod	<i>Microgadus proximus</i>
Walleye pollock (whiting)	<i>Theragra chalcogramma</i>
Unknown cod	
Starry flounder	<i>Platichthys stellatus</i>
Unknown flounder	
Lingcod	<i>Ophiodon elongatus</i>
Pacific halibut	<i>Hippoglossus stenolepis</i>
Arctic lamprey	<i>Lampetra spp.</i>
<i>Rockfish</i>	
Black rockfish	<i>Sebastes melanops</i>
Yelloweye rockfish	<i>Sebastes ruberrimus</i>
Copper rockfish	<i>Sebastes caurinus</i>
Unknown rockfish	
Sablefish (black cod)	<i>Anoplopoma fimbria</i>
Sculpin	
Salmon shark	<i>Lamna ditropis</i>
Burbot	<i>Lota lota</i>
Arctic char	<i>Salvelinus alpinus</i>
Brook trout	<i>Salvelinus fontinalis</i>
Dolly Varden	<i>Salvelinus malma</i>
Lake trout	<i>Salvelinus namaycush</i>
Arctic grayling	<i>Thymallus arcticus</i>
Northern pike	<i>Esox lucius</i>
Sheefish	<i>Stenodus leucichthys</i>
Longnose sucker	<i>Catostomus catostomus</i>
Cutthroat trout	<i>Oncorhynchus clarkii</i>
Rainbow trout	<i>Oncorhynchus mykiss</i>
Steelhead	
Unknown trout	
Broad whitefish	<i>Coregonus nasus</i>
Least cisco	<i>Coregonus sardinella</i>
Humpback whitefish	<i>Coregonus pidschian</i>

-continued-

Table 1-2.-Page 2 of 4.

Common name	Scientific name
Round whitefish	<i>Prosopium cylindraceum</i>
Unknown whitefishes	
Bison	<i>Bison bison</i>
Black bear	<i>Ursus americanus</i>
Brown bear	<i>Ursus arctos</i>
Caribou	<i>Rangifer tarandus</i>
Deer	<i>Odocoileus hemionus</i>
Mountain goat	<i>Oreamnos americanus</i>
Moose	<i>Alces alces</i>
Dall sheep	<i>Ovis dalli</i>
Beaver	<i>Castor canadensis</i>
Coyote	<i>Canis latrans</i>
Arctic fox	<i>Vulpes lagopus</i>
Red fox	<i>Vulpes vulpes</i>
Red fox-cross phase	<i>Vulpes vulpes</i>
Red fox-red phase	<i>Vulpes vulpes</i>
Snowshoe hare	<i>Lepus americanus</i>
North American river (land) otter	<i>Lontra canadensis</i>
Lynx	<i>Lynx canadensis</i>
Marmot	<i>Marmota spp.</i>
Marten	<i>Martes spp.</i>
Mink	<i>Neovison vison</i>
Muskrat	<i>Ondatra zibethicus</i>
Porcupine	<i>Erethizon dorsatum</i>
Arctic ground (parka) squirrel	<i>Spermophilus parryii</i>
Red (tree) squirrel	<i>Tamiasciurus hudsonicus</i>
Unknown squirrel	
Least weasel	<i>Mustela nivalis</i>
Gray wolf	<i>Canis lupus</i>
Wolverine	<i>Gulo gulo</i>
Bufflehead	<i>Bucephala albeola</i>
Canvasback	<i>Aythya valisineria</i>
King eider	<i>Somateria spectabilis</i>
Spectacled eider	<i>Somateria fischeri</i>
Gadwall	<i>Anas strepera</i>
Goldeneye	<i>Bucephala spp.</i>
Mallard	<i>Anas platyrhynchos</i>
Merganser	<i>Mergus spp.</i>
Unknown merganser	<i>Mergus spp.</i>
Long-tailed duck	<i>Clangula hyemalis</i>
Northern pintail	<i>Anas acuta</i>
Unknown scaup	<i>Aythya spp.</i>
Black scoter	<i>Melanitta nigra</i>
Surf scoter	<i>Melanitta perspicillata</i>
White-winged scoter	<i>Melanitta fusca</i>
Northern shoveler	<i>Anas clypeata</i>
Green-winged teal	<i>Anas crecca</i>

-continued-

Table 1-2.-Page 3 of 4.

Common name	Scientific name
<i>Wigeon</i>	
American wigeon	<i>Anas americana</i>
Unknown wigeon	<i>Anas spp.</i>
Unknown ducks	
Brant	<i>Branta bernicla</i>
Cackling goose	<i>Branta hutchinsii minima</i>
Canada goose	<i>Branta canadensis parvipes</i>
Unknown Canada/cackling geese	<i>Branta spp.</i>
Emperor goose	<i>Chen canagica</i>
Snow goose	<i>Chen caerulescens</i>
White-fronted goose	<i>Anser albifrons</i>
Unknown geese	
Tundra (whistling) swan	<i>Cygnus columbianus</i>
Sandhill crane	<i>Grus canadensis</i>
Murre	<i>Uria spp.</i>
Spruce grouse	<i>Falcapennis canadensis</i>
Sharp-tailed grouse	<i>Tympanuchus phasianellus</i>
Ruffed grouse	<i>Bonasa umbellus</i>
Unknown grouse	
Ptarmigan	<i>Lagopus spp.</i>
Unknown ptarmigan	<i>Lagopus spp.</i>
Duck eggs	
Unknown duck eggs	
Goose eggs	
Unknown goose eggs	
Gull eggs	
Unknown gull eggs	
Unknown eggs	
Unknown chitons	
<i>Clams</i>	
Butter clams	<i>Saxidomus gigantea</i>
Freshwater clams	
Razor clams	<i>Siliqua spp.</i>
Unknown clams	
Cockles	
Dungeness crab	<i>Cancer magister</i>
King crab	
Unknown king crab	
Tanner crab	<i>Chionoecetes spp.</i>
Unknown mussels	<i>Mytilus spp.</i>
Octopus	<i>Octopus vulgaris</i>
Shrimp	
Squid	<i>Loligo opalescens</i>
Unknown marine invertebrates	
<i>Berries</i>	
Blueberry	<i>Vaccinium uliginosum alpinum</i>
Lowbush cranberry	<i>Vaccinium vitis-idaea minus</i>

-continued-

Table 1-2.–Page 4 of 4.

Common name	Scientific name
Highbush cranberry	<i>Viburnum edule</i>
Crowberry	<i>Empetrum nigrum</i>
Elderberry	<i>Sambucus racemosa</i>
Currants	<i>Ribes spp.</i>
Cloudberry	<i>Rubus chamaemorus</i>
Nagoonberry	<i>Rubus arcticus spp.</i>
Raspberry	<i>Rubus idaeus</i>
Salmonberry	<i>Rubus spectabilis</i>
Strawberry	<i>Fragaria virginiana</i>
Blackberry	<i>Empetrum nigrum</i>
Twisted stalk berry (watermelon berry)	<i>Streptopus amplexifolius</i>
Other wild berry	
Wild rhubarb	<i>Polygonum alaskanum</i>
Eskimo potato	<i>Hedysarum alpinum</i>
Devil's club	<i>Echinopanax horridum</i>
Fiddlehead ferns	
Hudson's Bay (Labrador) tea	<i>Ledum palustre</i>
Dandelion greens	<i>Taraxacum L.</i>
Sourdock	<i>Rumex fenestratus</i>
Spruce tips	<i>Picea spp.</i>
Wild rose hips	<i>Rosa acicularis</i>
Yarrow	<i>Achillea spp.</i>
Other wild greens	
Unknown mushrooms	
Fireweed	<i>Epilobium angustifolium</i>
Plantain	<i>Plantago major</i>
Stinkweed	<i>Artemisia tilesii</i>
Unknown greens from land	
Bladder wrack	<i>Fucus Vesiculosus</i>
Wood	
Bark	
Roots	
Alder	<i>Alnus spp.</i>
Wood (unspecified)	
Other wood	

Source ADF&G Division of Subsistence household surveys, 2014.

Appendix F: Alaska Subsistence Permit Hunt Supplement 2019-2020. (ADF&G 2017d)
 Page four is about the Community Subsistence Hunt.



2018-2019 Alaska Subsistence Permit Hunt Supplement

See pages 1-3 for Tier II information and page 4 for Tier I Nelchina caribou and Unit 13 Community Harvest information.

Under state law, all Alaska residents are eligible for subsistence hunting of game populations where subsistence use occurs.

If the harvestable portion of a game population is not sufficient to provide a reasonable opportunity for all subsistence users, the Board of Game shall distinguish among subsistence users, through limitations based on:

- The customary and direct dependence on the game population by the subsistence user for human consumption as a mainstay of livelihood, and
- The ability of the subsistence user to obtain food if subsistence use is restricted or eliminated.

Permit Hunt Conditions

- Hunters must have in possession a valid hunting license, necessary permits, and if needed, big game locking-tags. Alaska residents 17 years of age and younger are not required to have a hunting license. Additional conditions may be listed under the description of each hunt.
- Properly completed permit hunt reports must be returned by the date specified on the permit, even if you did not hunt or were unsuccessful. If you did not return last year's Drawing, Targeted, Tier II, or Registration (including Tier I Nelchina caribou) report, even if the postal service lost your report, you will be ineligible for all Drawing, Targeted, Tier II, and Registration permits for the next regulatory year.
- Permits are not transferable to another person, with the following exception:
 - Active duty military personnel deployed to a combat zone who are unable to use their Tier II permit may transfer their permit to a substitute hunter who is a resident of Alaska. Transfer forms are available at: <http://www.adfg.alaska.gov/index.cfm?adfg=shuntlicense-military-permits>. Additional information is available by contacting the Permit Hunt Administrator, ADF&G, Division of Wildlife Conservation, 1800 Glenn Hwy, Ste. 4, Palmer, AK 99645. Phone: (907) 861-2106 or leigh.hong@alaska.gov

Instructions for Applying for Tier II Permit Hunts

(Complete instructions available online and on the back of the Tier II application.)

- Only Alaska residents who will be 10 years of age or older by the starting date of the hunt may apply for Tier II permits.
- A hunter may apply for more than one hunt, but must complete a separate application for each hunt.
- No individual may hold more than one Tier II permit for a species.
- Only one Tier II permit may be issued to a household for moose or muskox. Up to three Tier II permits may be issued to a household for caribou.

Questions 1-11:

- Driver's License or State ID Number
- Date of birth
- First name, middle initial, and last name
- Complete mailing address, city, state and zip code
- Community of principal residence

12. Total years of Alaska residency.

13. Each Tier II hunt is assigned a hunt number. Check this supplement for the correct number of the hunt for which you are applying, then enter the complete number.

14. If you are applying for more than one Tier II hunt for a species, write the choice number in the box indicating if this hunt is your first, second, etc. choice.

Scored Questions 15-19: See the explanation of point scoring listed at right. If a question is left blank, you will receive the minimum score for that question. On the back of the application, please list other members of your household who are also submitting Tier II application(s).

Sign your application. Any application which is illegible, has incorrect hunt numbers, or is missing required information (including signature) will not be accepted. In addition, applications containing false information will be reported to Alaska Wildlife Troopers for investigation.

Proxy Hunting in Tier II Hunts

- You may proxy hunt for caribou in Tier II hunts.
- You may proxy hunt for moose in Tier II hunts.
- Antler destruction is required for both the hunter's animal and the beneficiary's animal, and must occur at the kill site unless uncut antlers must be submitted to ADF&G for measuring, in which case antler destruction will be completed after measuring by ADF&G.

Hunter Education Requirements

- Requirements for hunters before hunting in **Units 7, 13, 14, 15, and 20:**
 - If you were born after January 1, 1986 and are 16 years old or older,** you must have successfully completed an ADF&G-approved Basic Hunter Education course before you hunt in the units listed above.
 - If you are under 16 years of age,** you must have either successfully completed an ADF&G-approved Basic Hunter Education course or be under the direct immediate supervision of a licensed hunter who is:
 - (a) 16 years of age or older and has successfully completed an ADF&G-approved Basic Hunter Education course, -OR-
 - (b) born on or before January 1, 1986.
- Hunters aged 10-17 with an ADF&G-approved Basic Hunter Education course, or hunters under the age of 10, are allowed to hunt on behalf of an adult permit holder under the direct and immediate supervision of that adult. The adult permit holder must be a licensed hunter, 16 or older, and is responsible for ensuring all legal requirements are met.

Attention all Bowhunters

All hunters who want to participate in archery-only hunts must have successfully completed an ADF&G-approved bowhunter education course prior to applying. Hunters born on or after January 1, 1986 and using a bow and arrow to hunt big game must have successfully completed an ADF&G-approved bowhunter education course.

Frequently Asked Questions

- 1. Do only Alaska residents qualify to apply for Tier II subsistence permits?** Yes. You must be a resident at the time of application. A resident for Tier II means a person who has continuously maintained his or her permanent home in Alaska for 365 days preceding the start of the Tier II hunt of interest. Members of the military services and their dependents who have been stationed in the state for the preceding 12 consecutive months are also residents for Tier II purposes.
- 2. How are Tier II permits awarded?** Each application is scored on 5 questions. Permits for a specific hunt are issued starting at the highest overall score and working downward until all permits are issued. If there are Tier II permits remaining, but a pool of applicants with the same score is too large to award all permits, a random drawing will be held to award the remaining permits.
- 3. How many Tier II permits may an individual be awarded?** Only one Tier II permit per species may be awarded. Therefore, it is important that those applying for more than one hunt for the same species identify whether a hunt is their first, second, third, etc. choice for that species. If more individuals in a household are eligible for permits based on their score than can be allowed, the highest scoring individual(s) in the household will be awarded permit(s). When more than one household member applies for Tier II hunts, household applicants must be listed on each application.
- 4. Can I have both a Drawing permit and a Tier II permit for the same species?** Yes. A person can be selected for a Drawing permit and also be awarded a Tier II permit for the same species. However an individual's bag limit does not increase. Upon harvesting an animal under one permit, the other permit automatically becomes invalid, however, you must still submit both hunt reports. The Drawing and Tier II permit systems are separate processes and your application for receiving a permit in one system does not affect your opportunity to apply for or receive a permit in the other.
- 5. Is there any difference in my chances of receiving a permit for my first choice hunt as opposed to my second or third choices?** No. Each hunt is scored independently. If you qualify for more than one permit for a given species, you will receive the permit for the hunt which you indicated was your highest preference. If you do not identify a preference, you will receive a permit for the hunt in which you receive the highest score.
- 6. If I qualify for a permit for one species, does that affect my opportunity to receive a permit for another species?** No. Each hunt is scored independently. Your potential to qualify for a permit is dependent upon your score in relation to the scores of other applicants for the same hunt.

Appeals Process

Applicants may appeal a Tier II permit allocation decision or score to the Permit Hunt Administrator **within 20 days** of the public release of the list of names of those awarded Tier II permits. An appeal must be in writing or by telephone; if in writing it must be postmarked or hand delivered to 1800 Glenn Highway, Ste 4, Palmer within the 20 day appeal period; if by telephone it must also be made within the 20-day appeal period. Telephone appeals will be recorded. A department form, available at most ADF&G offices, may be used, but is not required. The department will provide a decision on the appeal by first class mail within 7 days of appeal receipt. A person aggrieved by a decision under this appeal system may appeal to the ADF&G Commissioner within 7 days of the mailing of a decision by the Permit Hunt Administrator. The Department of Fish and Game may change a Tier II permit allocation decision or score in case of an ADF&G scoring error or based on evidence that information on an application is false.

Under 5 AAC 82.050, applications that are incomplete or contain false statements are void. Therefore, appeals asking to insert missing information or a signature, or asking to change answers to questions will be denied. Submit appeal to: Permit Hunt Administrator, ADF&G, Division of Wildlife Conservation, 1800 Glenn Hwy, Ste 4, Palmer, AK 99645.

Apply Online!

Subsistence supplement and applications are available online at: <http://hunt.alaska.gov>

Apply Online by 5 p.m. (AKST) December 15!

Applications must be submitted online or mailed to the address shown on the application form. If you apply by mail, it is your responsibility to make certain the envelope gets postmarked by Nov. 30. Some post offices routinely pouch mail without postmarking it and send it on to a larger distribution center where it is postmarked 24-48 hours later! We suggest you hand carry your envelope into the post office, ask that it be postmarked, and then look at the postmark to make certain it says Nov. 30 or earlier. Also note that a postmark means a U.S. Postal Service postmark. Postage meter dates do not count. Applications postmarked by November 30 will be accepted until Dec. 15. You may apply online beginning November 1 and ending December 15 at 5 p.m. (AKST).

Paper applications will be accepted by mail if postmarked between November 1 and November 30.

MAIL TO: ADF&G Tier III Permit Applications
 P.O. Box 228060
 Anchorage, AK 99522-8080

Point Scoring

Each Tier II application is scored on the basis of the information provided by the applicant. Answers may be subject to verification. A total of up to 140 points is possible. There are 5 questions (15-19) on the application that are used for scoring in all Tier II hunts.

- 15. Up to 50 points** are awarded for the number of years the applicant has hunted or eaten meat from the game population in the hunt area, or would have hunted this population, but did not because the hunt was cancelled or the applicant was unsuccessful in obtaining a drawing or Tier II permit for this population. One point is awarded for each year.
- 16. Up to 10 points** are awarded for the number of years any one member of the household has hunted or eaten meat, or would have hunted this population, but did not because the hunt was cancelled or the household member was unsuccessful in obtaining a drawing or Tier II permit for this population. One-fifth of a point is awarded for each year.
- 17. Up to 25 points** are awarded for the number of days you spent hunting and/or fishing during the last regulatory year in the Tier II hunt area for which you are applying. The maximum number of points will be awarded to applicants who hunted and fished in the area for 70 days or more during the last regulatory year.
- 18. Up to 25 points** are awarded for the cost of food in the community where most of the applicant's household store-bought food was purchased during the past year. Points received may not exceed the points calculated by the department using the cost-of-food index for the community nearest the applicant's residence.
- 19. Up to 30 points** are awarded for the cost of automotive fuel in the community where most of the applicant's household automotive fuel was purchased during the past year. Points received may not exceed the points calculated by the department using the cost of automotive fuel for the community nearest the applicant's residence.

2017 Tier II Permit Statistics

The table below contains permit application information on Tier II hunts held last regulatory year. The column titled % Awarded gives the percentage of applicants receiving a permit for each hunt.

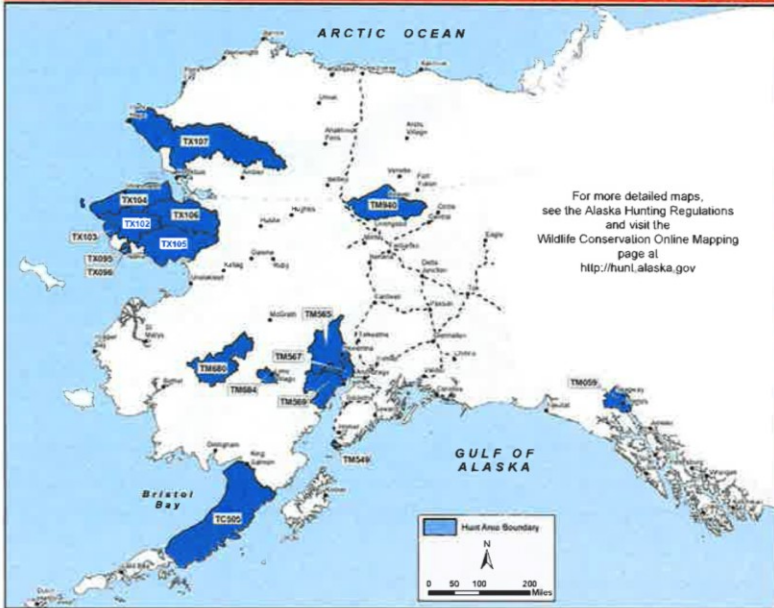
Hunt Number	Applications Received	Permits Available	% Awarded
TC505	306	200	65
TM059	340	250	74
TM549	16	4	25
TM565	273	100	37
TM567	218	80	37
TM569	127	80	63
TM680	313	200	64
TM684	12	14	100
TM940	39	75	52
TX095	70	5	7
TX096	80	4	5
TX102	73	8	11
TX103	55	1	2
TX105	100	10	10
TX106	81	3	5
TX107	50	6	12

Most Common Errors

Last year, 2,133 Tier II permit applications were submitted. Of these, about 3% were rejected. The most common errors causing applications to be rejected were:

- missing information, providing an invalid hunt number, failing to sign an application, falsifying an application, and being younger than 10 years old.

Tier II Permit Hunt Areas



Restricted Area for hunt TM940:
Dalton Highway Corridor Management Area (DHCMA) Units 20, 24, 25, and 26 extending five miles from each side of the Dalton Highway, including the driveable surface of the Dalton Highway, from the Yukon River to the Arctic Ocean, and including the Prudhoe Bay Closed Area. The area within the Prudhoe Bay Closed Area is closed to the taking of big game; the remainder of the DHCMA is closed to hunting; however, **big game, small game, and fur animals may be taken in the area by bow and arrow only**; no motorized vehicle may be used to transport hunters, their gear, or parts of game within the DHCMA except aircraft, boats, and licensed highway vehicles on the following designated roads: 1) Dalton Highway; 2) Bettles Winter Trail during periods when BLM and the City of Bettles announce that the trail is open to winter travel; 3) Galbraith Lake road from the Dalton Highway to the BLM campground at Galbraith Lake, including the gravel pit access road when the gate is open; 4) Toolik Lake Road, excluding the driveway to the Toolik Lake Research Facility; 5) the Sagavanirktok River access road two miles north of Pump Station 2; 6) any constructed roadway or gravel pit within 1/4 mile of the Dalton Highway. However, a snowmachine may be used to transport hunters, their hunting gear, or parts of game across the management area from land outside the management area to access land on the other side of the management area. Any hunter traveling on the Dalton Highway must stop at any check station operated by the department within the DHCMA.

List of Alaska Communities

Select the community you live in from this table.
 If your community is not listed below, provide the name of the community with a post office closest to you. List your community on the Tier II application.

ADAK	CHIGNIK LAKE	FALSE PASS	KALIFORNIA	METLAKATLA	POINT HOPE	SUNRISE
AKHIOK	CHINIAC	FARM LOOP	KALTAG	MINTO	POINT LAY	SUSITNA
AKIACHAK	CHISANA	FARMERS LOOP	KARLUK	MONTANA CREEK	POINT MACKENZIE	SUSITNA NORTH
AKIAK	CHISTOCHINA	FERRY	KASAAN	MOOSE CREEK	POINT POSSESSION	SUTTON ALPINE
AKUTAN	CHITINA	FISHHOOK	KASGLUK	MOOSE PASS	POPF-VANNOY LANDING	TAKOTNA
ALAKANUK	CHUATHBALUK	FORT GREELY	KASLOF	MOSQUITO LAKE	PORT ALSWORTH	TALKEETNA
ALATNA	CHUGIAK	FOUR MILE ROAD	KENAI	MOUNTAIN VILLAGE	PORT CLARENCE	TANACROSS
ALCAN BORDER	CIRCLE	FOX	KENNY LAKE	MUD BAY	PORT GRAHAM	TANAINA
ALEKNAGIK	CLAM GULCH	FOX RIVER	KETCHIKAN	NABESNA	PORT HEIDEN	TANANA
ALENEVA	CLARK'S POINT	FRITZ CREEK	KIANA	NAKNEK	PORT LIONS	TATILEK
ALEXANDER CREEK	COHOE	FUNNY RIVER	KING COVE	NANWALEK	PORT PROTECTION	TAZLINA
ALLAKAKET	COFFMAN COVE	GAKONA	KING SALMON	NAPAIMUIT	PORTAGE CREEK	TELIDA
AMBLER	COHOLE	GALENA	KIPNUK	NAPAKIAK	PRUDHOE BAY	TELLER
ANAKTUVUK PASS	COLD BAY	GAMBELL	KIVALINA	NAPASKIAK	QUINHAGAK	TENAKEE SPRINGS
ANCHOR POINT	COLDFOOT	GAME CREEK	KIVLUK	NAUKATI BAY	RAMPART	TETLIN
ANCHORAGE	COLLEGE	GATEWAY	KNIK RIVER	NELCHINA	RED DEVIL	THORNE BAY
ANDERSON	COOPER LANDING	GEORGETOWN	KNIK-FAIRVIEW	NELSON LAGOON	RED DOG MINE	TOGIAK
ANGOON	COPPER CENTER	GIRDWOOD	KODIAK	NENANA	RIDGEWAY	TOK
ANIAC	CORDOVA	GLACIER VIEW	KODIAK STATION	NEW STUYAHOK	RUBY	TOKSOOK BAY
ANVIK	COVENANT LIFE	GLENNALLEN	KOLHANOK	NEWHALEN	RUSSIAN MISSION	TOLSONA
ARCTIC VILLAGE	CRAIG	GOLDSTREAM	KOLIGANEK	NEWTOK	SALAMATOF	TONSINA
ATKA	CROOKED CREEK	GOLDOVIN	KONGIGANAK	NIGHTMUTE	SALCHA	TRAPPER CREEK
ATMAUTHLUAK	CROWN POINT	GOODNEWS BAY	KOTLIK	NIKISKI	SAND POINT	TULUKSAK
ATQASUK	DEADHORSE	DEERING	KOTZEBUE	NIKOLAEVSK	SAVOONGA	TUNTUTULIAK
AUKE BAY	DELTA JUNCTION	DELTA	KOYUK	NIKOLAI	SAXMAN	TUNUNAK
BADGER	DENALI PARK	DIAMOND RIDGE	KUPREANOF	NINILCHIK	SCAMMON BAY	TWO RIVERS
BARROW	DIAMOND RIDGE	DILLINGHAM	KWETHLUK	NOATAK	SELAWIK	TYONEK
BEAR CREEK	DILLINGHAM	DIOMEDE	KWILLINGGOK	NOME	SELDOVIA	UGASHIK
BEAVER	DIOMEDE	DOT LAKE	LAKE LOUISE	NONDALTON	SEWARD	UNALAKLEET
BELUGA	DOUGLAS	DOUGLAS	LAKE MINCHUMINA	NOORVIK	SHAGELUK	UNALASKA
BETHLE	DRY CREEK	HEALY LAKE	LAKES	NORTH POLE	SHAKTOOLIK	UPPER KALSKAG
BETHLE'S FIELD	DUTCH HARBOR	HOLLIS	LARSEN BAY	NORTHWAY	SHISHMAROF	VALDEZ
BIG DELTA	EAGLE	HOLY CROSS	LAZY MOUNTAIN	NIUISUT	SHUNGNAK	VENETIE
BIG LAKE	EAGLE RIVER	HOMER	LEVELOCK	NULATO	SILVER SPRINGS	WAINWRIGHT
BIRCH CREEK	EAGLE VILLAGE	HOONAH	LIME VILLAGE	NUNAM IQUA	SITKA	WALES
BIRCHWOOD	EDNA BAY	HOOPER BAY	LIVENGOOD	NUNAPITCHUK	SKAGWAY	WASILLA
BREVIQ MISSION	EELSON AFB	HOPE	LORING	OLD HARBOR	SKWENTNA	WHALE PASS
BUCKLAND	EKLUTNA	HUGHES	LOWELL POINT	OSCARVILLE	SLANA	WHITE MOUNTAIN
BUFFALO SOAPSTONE	EKWOK	HUSLIA	LOWER KALSKAG	OUZINKIE	SLEETMUTE	WHITESTONE
BUTTE	ELFIN COVE	HYDER	LUTAK	PALMER	SOLDOTNA	WHITTIER
CANTWELL	ELIM	IGIUGIG	MANLEY HOT SPRINGS	PAXSON	SOUTH NAKNEK	WILLOW
CENTRAL	EMMONAK	ILIAMNA	MANOKOTAK	PEDRO BAY	SOUTH VAN HORN	WILLOW CREEK
CHALKYITSIK	ELIM	INDIAN	MARSHALL	PELICAN	ST GEORGE ISLAND	WISEMAN
CHASE	EMMONAK	IVANOF BAY	MCCARTHY	PERRYVILLE	ST MICHAEL	WOMENS BAY
CHEFORNAK	ESTER	JUNEAU	MCCRATH	PETERS CREEK	ST PAUL ISLAND	WRANGELL
CHENA RIDGE	EUREKA ROADHOUSE	KACHEMAK	MEADOW LAKES	PETERSBURG	ST MARY'S	YAKUTAT
CHENEGA BAY	EVANSVILLE	KAKE	MEKORYUK	PETERSVILLE	STEBBINS	
CHEVAK	EXCURSION INLET	KAKTOVIK	MENTASTA LAKE	PILOT POINT	STEELE CREEK	
CHICKALOON	FAIRBANKS			PLAINUM	STERLING	
CHICKEN				PLEASANT VALLEY	STEVENS VILLAGE	
CHIGNIK				POINT BAKER	STONY RIVER	
CHIGNIK LAGOON						

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Caribou

If unsuccessful or you did not hunt, report by mail within 15 days of close of season. Only three Tier II caribou permits are allowed per household.

Hunt Maps available online <http://hunt.alaska.gov>

Area/Hunt Number	Number of Permits	Legal Caribou	Season Dates	Hunt Conditions
Unit 9C, south of the north bank of the Naknek River; and Unit 9E				
TC505	200	Either sex	Unit 9C: Aug. 10-Sept. 20 and Nov. 15-Feb. 28	If successful, report in person or by phone (907-246-3340) to ADF&G in King Salmon within 10 days of kill.
			Unit 9E: Aug. 10-Sept. 20 and Nov. 1-Apr. 30	

<h1>Moose</h1> <p><i>If unsuccessful or you did not hunt, report by mail within 15 days of close of season. Only one Tier II moose permit is allowed per household.</i></p> <p style="text-align: right;">Hunt Maps available online http://hunt.alaska.gov</p>				
Area/Hunt Number	Number of Permits	Legal Moose	Season Dates	Hunt Conditions
Unit 10, Upper Lynn Canal				
TM059	250	Bull with spike-fork or 50-inch antlers or antlers with 3 or more brow lines on at least one side	Sept. 15-Oct. 7	If successful, report in person to ADF&G in Haines with lower front jaw and antlers for measuring within 3 days of kill.
Unit 15C, Southwest of Pt. Pogibshi, that portion of Unit 15C southwest of a line from Point Pogibshi to the point of land between Rocky Bay and Windy Bay.				
TM549	4	Bull	Aug. 25-Sept. 30	If successful, report by mail to ADF&G in Anchorage within 10 days of kill. Moose hunters in Unit 15 must complete the Moose Hunter Orientation online at http://hunt.alaska.gov prior to hunting.
Unit 16B, Yentna, that portion north and west of the 16B North Beluga hunt area (TM567).				
TM565	100	Bull	Dec. 15-Mar. 31	If successful, report by phone (907-746-6322) or mail to ADF&G in Anchorage or Palmer within 5 days of kill; if Unit 16B resident, report by mail only within 15 days of kill. If antlers are removed intact or exported from Unit 16B, they must be brought to one of the above ADF&G offices where a department representative will destroy the trophy value.
Unit 16B, North Beluga, that portion draining into Sustina River south of the big bend of the Lower Yentna River (approximately river mile 23) and into Cook Inlet north of the Beluga River including all drainages into the north side of Beluga River and Beluga Lake.				
TM567	80	Bull	Dec. 15-Mar. 31	If successful, report by phone (907-746-6322) or mail to ADF&G in Anchorage or Palmer within 5 days of kill; if Unit 16B resident, report by mail only within 15 days of kill. If antlers are removed intact or exported from Unit 16B, they must be brought to one of the above ADF&G offices where a department representative will destroy the trophy value.
Unit 16B, South Beluga, mainland drainages south and west of the Beluga River, Beluga Lake, and Tuunivrate Glacier.				
TM569	80	Bull	Dec. 15-Mar. 31	If successful, report by phone (907-746-6322) or mail to ADF&G in Anchorage or Palmer within 5 days of kill; if Unit 16B resident, report by mail only within 15 days of kill. If antlers are removed intact or exported from Unit 16B, they must be brought to one of the above ADF&G offices where a department representative will destroy the trophy value.
Unit 19A, that portion of the Kuskokwim River drainage downstream from, and including, the George River drainage, and downstream of, and including, the Daviney Creek drainage.				
TM590	200	1 Antlered Bull	Sept. 1-Sept. 20	If successful, or unsuccessful, report online or by mail to ADF&G in Fairbanks within 15 days of the close of the season, Call (907) 459-7272 for assistance.
Unit 19A, Lime Village Management Area, that portion drained by the Stony River from the mouth of the Sink River, including the Sink River drainage, upstream to, but not including, the Can Creek drainages.				
TM584	14	2 Bulls	Aug. 10-Sept. 25 and Nov. 20-Mar. 31	If successful, or unsuccessful, report online or by mail to ADF&G in Fairbanks within 15 days of the close of the season, Call (907) 459-7272 for assistance.
Unit 25D, Western Yukon Flats, that portion west of a line extending from the Unit 25D boundary on Preacher Creek, then downstream along west banks of Preacher Creek, Birch Creek and Lower Mouth Birch Creek to the Yukon River, then downstream along the north bank of the Yukon River (including islands) to the confluence of the Hadley Creek River, then upstream along the west bank of the Hadley Creek River to the confluence of Froy and One-Half Mile Creek, then upstream along Forty and One-Half Mile Creek to Nelson Mountain on the Unit 25D boundary. NOTE: Under Federal subsistence hunting regulations, federal public lands within Unit 25D West are closed to moose hunting except by residents of Beaver, Stevens Village, and Birch Creek. Except for navigable waters, most of the remaining lands are privately owned.				
TM940	75	Bull	Aug. 25-Feb. 28	If successful, report online or by mail to ADF&G in Fairbanks within 10 days of kill. Reports can also be returned to Community Natural Resource Offices in Beaver, Birch Creek, Stevens Village, or Fort Yukon, to be forwarded to ADF&G, Fairbanks. See restricted area on page 2.
<h1>Muskox</h1> <p><i>If unsuccessful or you did not hunt, report by mail within 15 days of close of season. Only one Tier II muskox permit is allowed per household.</i></p> <p style="text-align: right;">Hunt Maps available online http://hunt.alaska.gov</p> <ul style="list-style-type: none"> • Successful applicants will be contacted by ADF&G with further instructions and information. • Aircraft may NOT be used to transport muskox hunters, muskox, or muskox hunting gear. • Successful hunters must remove the horns within 2 inches of the eye level prior to leaving the kill site. Successful hunters are required to submit the distal (end) portion of each cut horn and the front lower jaw with teeth (5-inch section) to ADF&G in Nome or Kotzebue within 3 days of harvesting a muskox. • A locking-tag is not required in subsistence muskox hunts. 				
Area/Hunt Number	Number of Permits	Legal Muskox	Season Dates	Hunt Conditions
Unit 22B				
TX105	9	Bull	Unit 22B East Aug. 1 - Mar. 15 Remainder of Unit 22B Jan. 1 - Mar. 15	Unit 22B East, that portion east of the Darby Mountains, and including the Kwituk, Tubukluk, Koyuk and Ingulatuk river drainages. This hunt is conducted in combination with a federal subsistence hunt for federally qualified subsistence users on federal public land. Season will be closed when the combined federal and state harvest reaches the harvest quota. For more information, call ADF&G in Nome at 1-800-560-2271.
Unit 22C, Outer Nome Area, that portion of all drainages flowing to Norton Sound between the east bank of the Pienny River and the west bank of the Flambeau River extended along Safety Sound to Safety Bridge, including the Snake River and Nome River drainages; and Unit 22C Inner Nome Area, that portion of the Snake River drainage downstream of and including the Glacier Creek drainage, that portion of the Nome River drainage downstream of and including the Basin Creek and Shepard Creek drainages, and all drainages flowing directly to Norton Sound between the mouths of the Nome River and Snake River.				
TX096	4	Bull	Aug. 1 - Mar. 15	A portion of this hunt (Unit 22C Inner Nome Area) is only open to Certified Bowhunters, or Certified Shotgun Hunters, or Certified Muzzleloader Hunters and weapons certification is required prior to hunting in this area. For more information, call ADF&G in Nome at 1-800-560-2271.
Unit 22C, Inner Nome Area, that portion of the Snake River drainage downstream of and including the Glacier Creek drainage, that portion of the Nome River drainage downstream of and including the Basin Creek and Shepard Creek drainages, and all drainages flowing directly to Norton Sound between the mouths of the Nome River and Snake River.				
TX095	5	Bull	Aug. 1 - Mar. 15	This hunt is only open to Certified Bowhunters, or Certified Shotgun Hunters, or Certified Muzzleloader Hunters. For more information, call ADF&G in Nome at 1-800-560-2271.
Unit 22D, Southwest, that portion west of the Tsuk River drainage, west of the west bank of the unnamed creek originating at the unit boundary opposite the headwaters of McAdam's Creek and west of the west bank of Canyon Creek to its confluence with Tuksuk Channel.				
TX103	2	Bull	Jan. 1 - Mar. 15	This hunt is conducted in combination with a federal subsistence hunt for federally qualified subsistence users on federal public land. Season will be closed when the combined federal and state harvest reaches the harvest quota. For more information, call ADF&G in Nome at 1-800-560-2271.
Remainder of Unit 22D				
TX102	6	Bull	Unit 22D Kuzitrin River drainage (includes Pilgrim and Kougarok Rivers) Jan. 1 - Mar. 15 Unit 22D Arctican and Agiapuk River drainages Aug. 1 - Mar. 15	This hunt is conducted in combination with a federal subsistence hunt for federally qualified subsistence users on federal public land. Season will be closed when the combined federal and state harvest reaches the harvest quota. For more information, call ADF&G in Nome at 1-800-560-2271.
Unit 22E				
TX104	4	Bull	Aug. 1 - Mar. 15	This hunt is conducted in combination with a federal subsistence hunt for federally qualified subsistence users on federal public land. Season will be closed when the combined federal and state harvest reaches the harvest quota. For more information, call ADF&G in Nome at 1-800-560-2271.
Unit 23, Southwest, that portion on the Seward Peninsula west of and including the Buckland River drainage.				
TX106	3	Bull	Aug. 1 - Mar. 15	This hunt is conducted in combination with a federal subsistence hunt for federally qualified subsistence users on federal public land. Season will be closed when the combined federal and state harvest reaches the harvest quota. For more information, call ADF&G in Kotzebue at 1-800-478-3420.
Unit 23, Northwest, that portion north and west of the Kobuk River drainage.				
TX107	3	Bull	Aug. 1 - Mar. 15	Portions of the hunt area are on federal land and additional federal restrictions may apply. For more information, call ADF&G in Kotzebue at 1-800-478-3420.

Unit 13 Tier I Nelchina Caribou RC561 or RC562

Alaska residents that would like to hunt caribou in Unit 13 must choose between applying for the Unit 13 Tier I caribou hunts (RC561 or RC562), OR the community harvest caribou hunt (CSH), OR the caribou drawing hunt (DC485).

New! There are now two Tier I registration hunts that hunters will have to choose from during the open application period. Hunters may only select **one** hunt to apply for.

Members of a household that apply for a Unit 13 Tier I permit or CSH caribou permits are NOT eligible for ANY caribou drawing hunts.

A household includes any person currently living in the principal home, excluding persons boarding or renting in the home or relatives living in separate homes. All those applying must be residents at the time of application.

By applying for RC561 or RC562 you agree to all of the permit hunt conditions below:

Permit Hunt Conditions

- If your household applies for a Unit 13 Tier I caribou permit, your household **WILL** receive a permit.
- No member of the household will be eligible to apply for or receive any other state caribou Drawing/Registration permits or general season caribou harvest tickets.
- No member of the household may hunt caribou outside of Unit 13.
- No member of the household will be eligible to apply for or receive any moose permits outside of Unit 13.
- No member of the household may hunt moose outside of Unit 13.
- Any member of the household may harvest the caribou.
- Prior to Oct. 1, meat of the forequarters, hindquarters, and ribs must remain naturally attached to the bone until delivered to the place where it is processed for human consumption.
- The one caribou bag limit may be changed by Emergency Order or the hunt may be closed by Emergency Order. It is your responsibility to check the status of the hunt and return your hunt report when the hunt closes.

Instructions for Applying for the Tier I Permit Hunt

- The online application period begins Nov. 1 and ends Dec. 15, 2017 at 5 p.m. (AKST).
- Paper applications must be postmarked by Nov. 30 and received by Dec. 15, 2017.
- All members of the household 10 years of age and older must be listed on the application (including those who do not intend to hunt), and all members are bound by the hunt conditions for the entire regulatory year.
- The application must be signed by every person listed (parents/guardians may sign for minors).
- Apply only once per household; only one permit will be issued per household.
- Complete instructions available online and on the back of the Tier I application.

Please note: This is not a conventional registration hunt. You must apply during this application period; permits will not be available over the counter.

If you apply for this hunt, you and your household cannot participate in federal hunts for caribou or moose outside of Unit 13.

Proxy hunting in Unit 13:

- For Unit 13 Tier I permit holders, no member of your household may proxy hunt for caribou or moose outside of Unit 13.
- You may only proxy hunt for one Unit 13 caribou per regulatory year.
- If you proxy hunt for Unit 13 Tier I caribou, you and your entire household cannot hunt moose or caribou outside of Unit 13 for the regulatory year.
- For households with members that have already hunted moose or caribou outside of Unit 13, no member of the household may proxy hunt Unit 13 Tier I caribou.

Area/Hunt Number	Legal Caribou	Season Dates	Hunt Conditions
Unit 13, Nelchina			
RC561	To be announced	Aug. 10-Aug. 31 and Oct. 21-Mar. 31	Hunts will be closely monitored. All or portions of the hunt may be closed or opened on short notice by Emergency Order. It is your responsibility to check the status of the hunt and return your hunt report when the hunt closes.
RC562		Sept. 1-Sept. 20 and Oct. 21-Mar. 31	If successful, report online or by mail within 3 days of kill. If unsuccessful or you did not hunt, report online or by mail within 15 days of close of season.

Community Subsistence Harvest (CSH) Hunts

Copper Basin CSH Caribou Hunt CC001

Season dates Aug. 10-Sept. 20 and Oct. 21-Mar. 31
Season may be closed by Emergency Order

Caribou CSH hunters – Must be an Alaska resident at the time of application. No member of the household can hold any state Drawing/Tier I/Registration caribou permits, or hold general season caribou harvest tickets. Copper Basin CSH Caribou hunters may apply for moose drawing hunts in Unit 13 only (DM324 and DM325).

- All group members must comply with all CSH hunting requirements for a **two-year commitment**. See the 2018-2019 Hunt Conditions for Copper Basin CSH Caribou for complete requirements at www.adfg.alaska.gov/index.cfm?adfg=huntlicense.cultural.
- Up to 400 caribou can be taken by all Copper Basin CSH groups/communities combined.
- Apply only once per household; only one permit will be issued per household.
- No member of the household may apply for state or federal moose or caribou permit hunts outside of the Copper Basin Community Hunt area (Unit 11, 13, and that portion of Unit 12 south of the Little Tok River).
- No member of the household may hold general season caribou harvest tickets or other state caribou permits. After the CSH hunt has ended, if the household was unsuccessful in filling the CSH bag limit during the CSH hunt, household members may hunt in areas outside the CSH hunt area with general season caribou harvest tickets or other state caribou permits where the bag limit is greater than one caribou per household.
- No member of the household may hunt moose outside of the Copper Basin Community Hunt area.
- Any member of the household listed on the harvest ticket may harvest the caribou.
- Hunters must salvage the heart, liver, kidneys, and fat, as well as all edible meat from the front quarters, hindquarters, ribs, neck, and backbone.
- Prior to Oct. 1, meat of the front quarters, hindquarters, and ribs must remain naturally attached to the bone until delivered to the place where it is processed for human consumption.
- The 1 caribou bag limit may be changed by Emergency Order or the hunt may be closed by Emergency Order. It is your responsibility to check the status of the hunt and return your hunt report when the hunt closes.
- Any member of the group may hunt on behalf of another member as a designated hunter.
- The group coordinator must submit an annual Coordinator Community Harvest Report. If the coordinator fails to do so, all group participants will be placed on the Failure to Report list and will not be eligible to participate in the CSH hunt during the following regulatory year.

Copper Basin CSH Moose Hunt CM300

Season dates Aug. 20-Sept. 20
Season dates vary by area and may be closed by Emergency Order

Moose CSH hunters – Must be an Alaska resident at the time of application. No member of the household can hold any state Drawing/Tier I/Registration moose permits, or hold general season moose harvest tickets. Copper Basin CSH Moose hunters may apply for caribou hunts in Unit 13 only (DC485, RC561, or RC562).

- All group members must comply with all CSH hunting requirements for a **two-year commitment**. See the 2018-2019 Hunt Conditions for Copper Basin CSH Moose for complete requirements at www.adfg.alaska.gov/index.cfm?adfg=huntlicense.cultural.
- Up to 100 bull moose that do not meet general season antler restrictions ("any bull") may be taken in Units 11 and 13 during the fall season. When area-specific quotas are reached, the bag limit will revert to the general season antler restrictions for that area for the remainder of the season by Emergency Order. In the open portion of Unit 12, all community hunters must follow general season dates and antler restrictions.
- Locking-tags for the harvest of "any bull" moose will be distributed to participants using scoring criteria to determine the customary and direct dependence on the game population by the subsistence user for human consumption as a mainstay of livelihood. Hunters that do not have an "any bull" locking-tag in their possession must shoot a bull that conforms to the general season antler restrictions for the hunt area.
- Apply only once per household; one permit will be issued per household member.
- No member of the household may hold state or federal moose permits outside of the Copper Basin Community Hunt area (Unit 11, 13, and that portion of Unit 12 south of the Little Tok River) or hold general season moose harvest tickets. After the CSH hunt has ended, unsuccessful individual household members may then acquire state or federal moose harvest tickets or permits for other areas if the bag limit is greater than one moose per person.
- Hunters must salvage the head, heart, liver, kidneys, stomach, and hide, as well as all edible meat from the front quarters, hindquarters, ribs, neck, and backbone.
- For moose harvested in Unit 13, meat of the front quarters, hindquarters, and ribs must remain naturally attached to the bone until delivered to the place where it is processed for human consumption.
- Any member of the group may hunt on behalf of another member as a designated hunter.
- The group coordinator must submit an annual Coordinator Community Harvest Report. If the coordinator fails to do so, all group participants will be placed on the Failure to Report list and will not be eligible to participate in the CSH hunt during the following regulatory year.

Instructions for Applying for Copper Basin CSH Hunts:

- The Copper Basin CSH Caribou and Moose hunts are separate; group coordinators and households may apply for both hunts or just one of the hunts.
- Group coordinators may apply beginning Oct. 1 and ending Dec. 15, 2017 at 5 p.m. (AKST). Applications can be submitted online at <http://hunt.alaska.gov>. Each group coordinator will be assigned a group number after the application has been processed. Early submission of the group coordinator's application is highly recommended to avoid administrative delays that could compromise the group's eligibility due to lack of membership. Groups or communities must have a minimum of 25 individuals to participate in the CSH hunt.
- Households may apply beginning Nov. 1 and ending Dec. 15, 2017 at 5 p.m. (AKST). Applications can be submitted online at <http://hunt.alaska.gov>.
- Hunt conditions are available online at www.adfg.alaska.gov/index.cfm?adfg=huntlicense.cultural.
- All members of the household must be listed on the household application and all members are bound by the hunt conditions for the duration of the two-year commitment.
- Incomplete applications will be considered invalid.

Appendix G: Community Subsistence Hunt Coordinator Report – Moose (ADF&G 2017d)

COPPER BASIN COMMUNITY SUBSISTENCE HUNT COORDINATOR REPORT - MOOSE **GROUP NUMBER:**

For the 2018 hunting year (August 20, 2018 - September 20, 2018), community coordinators of a community subsistence hunt are required to complete this report, which asks questions relevant to community subsistence hunt (CSH) use patterns of the Copper Basin MOOSE CSH area, as defined in 2006-170-BOG. The Copper Basin CSH coordinator report must be complete in order to be compliant with regulation. Return the completed report and CSH household reports using the enclosed postage-paid envelope to: Alaska Department of Fish and Game, Division of Wildlife Conservation-R4, PO Box 47, Glennallen, AK 99588-0047, postmarked by January 31, 2019.

COMMUNITY/GROUP NAME: _____

1.) How many MOOSE were harvested by members of your CSH community/group in during the 2018 hunting year (August 20, 2018 - September 20, 2018)?

2a.) If households in your CSH community/group are not successful in harvesting MOOSE in the Copper Basin MOOSE CSH area what do they do for meat? Check all that apply.

- | | |
|--|--|
| <input type="checkbox"/> Obtain from relatives | <input type="checkbox"/> Hunt for MOOSE elsewhere |
| <input type="checkbox"/> Obtain from tribal office | <input type="checkbox"/> Purchase meat |
| <input type="checkbox"/> Obtain from CSH group/
community members | <input type="checkbox"/> Hunt/fish outside Copper Basin MOOSE CSH area |
| | <input type="checkbox"/> Other (describe) _____ |

2b.) If households in your CSH community/group are not successful in harvesting other resources, small/large game, game birds, salmon, and other non salmon fish in the Copper Basin MOOSE CSH area, what do they do for meat? Check all that apply

- | | |
|---|--|
| <input type="checkbox"/> Obtain from relatives | <input type="checkbox"/> Purchase meat |
| <input type="checkbox"/> Obtain from tribal office | <input type="checkbox"/> Hunt/fish outside Copper Basin MOOSE CSH area |
| <input type="checkbox"/> Obtain from CSH
community/group members | <input type="checkbox"/> Other (describe) _____ |

3.) What are the top 3 reasons members of your CSH community/group use the Copper Basin MOOSE CSH area? (List the most important first)

- 1 - _____
 2 - _____
 3 - _____

4.) What efforts are CSH community/group members making to continue or establish a generational pattern of use in the Copper Basin MOOSE CSH area? Approximately how many years has the average CSH community/group member used the Copper Basin MOOSE CSH area? (limit to 1 paragraph)

5.) Describe an example where youth from households in your CSH community/group, aged 0-16, actively participated in hunting, fishing, trapping, or gathering activities in the Copper Basin MOOSE CSH area during 2018 (January 2018 - December 2018).

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- 6.) 2018 (January 2018 - December 2018) CSH community/group sharing event(s)
 - 6a.) How many sharing events did your CSH community/group have that included MOOSE harvested in the Copper Basin CSH?
 - 6b.) What percentage of your CSH community/group members were present at sharing events?
 - 6c.) What percent of attendees of your sharing events were not part of your CSH community/group?

6d.) Please briefly describe the CSH community/group sharing event(s). _____

7.) Approximately how much of each MOOSE was retained by CSH community/group members from 2017 (August 20, 2017 - September 20, 2017) harvests? _____

8.) What strategies did members of your CSH group employ to reduce fuel consumption to increase economic efficiency for trips to the Copper Basin MOOSE CSH area in 2018 (January 1, 2018 - December 31, 2018)?

9.) How did members of your CSH community/group pool resources (equipment, supplies) to increase efficiency for trips to the Copper Basin MOOSE CSH area in 2018 (January 2018 - December 2018)?

10.) Describe the methods used for processing the MOOSE your CSH community/group harvested during the 2018 hunting year (August 20, 2018 - September 20, 2018; ex: commercial processor, family, self, other CSH community/group members). Specify the parts of the MOOSE processed and how they were used. _____

- 11.) Describe other activities members of your CSH community/group use the Copper Basin MOOSE CSH area for, detailing when these activities occur throughout the year (January 2018 - December 2018) and species harvested.
- Hunt for other large/small game/birds _____
 - Fish for salmon/non-salmon fish _____
 - Trap _____
 - Pick berries/greens _____
 - Other (ex: recreational purposes) _____