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Overview of Use Patterns, Regulations, and Harvest History of Moose in Game Management Unit 13

by

Alaska Department of Fish and Game

Division of Subsistence for the

March 2017 Board of Game Special Meeting in Glennallen, Alaska

March 2017

Alaska Department of Fish and Game **Division of Subsistence**

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Weights and measures (metric)

centimeter	cm
deciliter	dL
gram	g
hectare	ha
kilogram	kg
kilometer	km
liter	L
meter	m
milliliter	mL
millimeter	mm

Weights and measures (English)

cubic feet per second	ft^3/s
foot	ft
gallon	gal
inch	in
mile	mi
nautical mile	nmi
ounce	oz
pound	lb
quart	qt
yard	yd

Time and temperature

day	d
degrees Celsius	°C
degrees Fahrenheit	°F
degrees kelvin	K
hour	h
minute	min
second	s

Physics and chemistry

all atomic symbols

alternating current	AC
ampere	A
calorie	cal
direct current	DC
hertz	Hz
horsepower	hp
hydrogen ion activity (negative log of)	pH
parts per million	ppm
parts per thousand	ppt, ‰
volts	V
watts	W

General

all commonly-accepted abbreviations e.g., Mr., Mrs., AM, PM, etc.

all commonly-accepted professional titles e.g., Dr., Ph.D., R.N., etc.

Alaska Administrative Code	AAC
at	@
compass directions:	
east	E
north	N
south	S
west	W
copyright	©
corporate suffixes:	
Company	Co.
Corporation	Corp.
Incorporated	Inc.
Limited	Ltd.
District of Columbia	D.C.
et alii (and others)	et al.
et cetera (and so forth)	etc.
exempli gratia (for example)	e.g.
Federal Information Code	FIC
id est (that is)	i.e.
latitude or longitude	lat. or long.
monetary symbols (U.S.)	$, ¢
months (tables and figures):	first three letters (Jan,...,Dec)
registered trademark	®
trademark	™
United States (adjective)	U.S.
United States of America (noun)	USA
U.S.C.	United States Code
U.S. state	use two-letter abbreviations (e.g., AK, WA)

Measures (fisheries)

fork length	FL
mideye-to-fork	MEF
mideye-to-tail-fork	METF
standard length	SL
total length	TL

Mathematics, statistics

all standard mathematical signs, symbols and abbreviations

alternate hypothesis	H_A
base of natural logarithm	e
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, χ^2, etc.)
confidence interval	CI
correlation coefficient (multiple)	R
correlation coefficient (simple)	r
covariance	cov
degree (angular)	°
degrees of freedom	df
expected value	E
greater than	>
greater than or equal to	≥
harvest per unit effort	HPUE
less than	<
less than or equal to	≤
logarithm (natural)	ln
logarithm (base 10)	log
logarithm (specify base)	log_2, etc.
minute (angular)	'
not significant	NS
null hypothesis	H_O
percent	%
probability	P
probability of a type I error (rejection of the null hypothesis when true)	α
probability of a type II error (acceptance of the null hypothesis when false)	β
second (angular)	"
standard deviation	SD
standard error	SE
variance	
population	Var
sample	var

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OVERVIEW OF USE PATTERNS, REGULATIONS, AND HARVEST HISTORY OF MOOSE IN GAME MANAGEMENT UNIT 13

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EXECUTIVE SUMMARY

This report provides the Alaska Board of Game (BOG) with updated background information about subsistence and other hunting of moose in Game Management Unit 13 (GMU 13), the Copper River Basin of Southcentral Alaska. It focuses on information which the BOG may find useful in formulating regulations which provide a reasonable opportunity for subsistence uses of GMU 13 moose.

The Copper Basin is the traditional territory of the Ahtna Athabascans. Moose, along with caribou were, and continue to be, the primary big game species hunted for subsistence by most Ahtna communities. The Ahtna followed a patterned seasonal round of subsistence activities shaped primarily by resource availability. Moose were hunted from late summer (August) to late winter (April).

By the 1920s and afterwards, federal and, later, state authorities placed restrictions on big game hunting in present-day GMU 13 as the Copper Basin was connected by roads to the growing urban centers of Fairbanks and Anchorage. Since 1990, the population of areas connected to the Copper Basin by road has increased 43%. Over the same period, the population of the Copper River Census Subarea decreased 1%.

The report describes BOG deliberations, regulatory proposals, and litigation that have shaped regulations governing moose hunting in the Copper River Basin. 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. Competition among hunters for the available moose in GMU 13 continued to be high.

In 1978, the Alaska Legislature passed the state's first subsistence statute. The new law required the BOG to adopt regulations permitting subsistence uses unless such regulations jeopardized sustained yield. From 1983 through 1989, the BOG modified hunting regulations for GMU 13 to provide for subsistence uses by limiting eligibility for subsistence moose hunting in GMU 13 to residents of the GMU, easing bag limit restrictions for subsistence permit holders by allowing the taking of "any bull," and restoring the subsistence hunting season in August.

The Alaska Supreme Court's decision in McDowell v State of Alaska in December 1989 invalidated the rural preference in state law, resulting in all Alaska residents being eligible to participate in subsistence hunting. In general, subsistence hunting seasons were shortened and bag limits restricted because of the substantial increase in eligible hunters from populous areas connected to GMU 13 by road. A decline in the moose population also occurred. Beginning in 1990, the Federal Subsistence Board has adopted subsistence hunting regulations for federal lands in GMU 13; only local rural residents are eligible for federal permits.

In 1992, the BOG established an amount reasonably necessary for subsistence (ANS) finding of 600 moose for GMU 13. In March 1995, the BOG established an August 1–15 subsistence season for one bull moose by Tier II permit in GMU 13, with up to 150 permits to be issued. At the same meeting, the BOG adopted an August 20–September 20 general season in the unit for one bull with spike fork antlers or 50-inch antlers or antlers with 4 or more brow tines on one side.

From 1995 through 2001, Copper Basin residents received most of the Tier II permits and harvested most of the moose in the Tier II hunt. After a change in the Tier II scoring process beginning in 2002, only about half the Tier II permits and harvests went to residents of the hunt area.

Beginning in 1990 and through 2008, the BOG invested considerable effort in evaluating the questions used to score applicants for Tier II permits. Also from 1996, the BOG heard public testimony regarding loss of hunting opportunity as a consequence of the Tier II permit system, especially for younger hunters and hunters living in GMU 13.

Beginning in 2006, the BOG began to develop new regulations for subsistence moose and caribou hunting in GMU 13 based upon an interpretation of state law which holds that not all Alaskans are subsistence users. Under this interpretation and AS 16.05.330, the BOG may adopt subsistence regulations in accordance with a customary and traditional pattern as reflected in their findings. The BOG developed 2006-170-BOG that defined a community-based customary and traditional pattern of use of moose and caribou in GMU 13. The finding generally equated traditional subsistence use patterns with local patterns and contrasted them with nonlocal, primarily urban-based patterns that it at times characterized as "recreational." During the October 2006 meeting, the BOG adopted hunt requirements in regulation as well as in the department's discretionary permit authority for GMU 13 Tier II hunts in

line with the new findings of a community pattern of use. The BOG also established in regulation a community harvest area for moose and caribou that included all of GMU 13.

Significant changes pertaining to subsistence hunting in GMU 13 occurred at the February/March 2009 meeting of the BOG. The BOG modified the ANS in GMU 13 to a range of 300–600 moose. The board then adopted regulations creating a community subsistence hunt (CSH), based on the community pattern of use finding to replace the Tier II hunts for moose and caribou in GMU 13. The opportunity to take "any bull" moose was provided to participants in the community hunt; the CSH also had an earlier opening date than the general moose season.

In July 2010, the Alaska Superior Court ruled the 2009 CSH regulations invalid because they were fundamentally local residency-based. In October 2010 and March 2011 meetings, the BOG created new CSH regulations and discretionary permit conditions to comply with the court's ruling. The new regulations allowed participation in the CSHs by any group of 25 people or more. Also at this meeting the board adopted finding 2011-184-BOG that defined a second, more "individual" pattern of subsistence uses of moose and caribou in the area.

Following these regulatory changes for the CSH, the number of participants in the CSH began to increase substantially. One group (the 8 Ahtna villages) with 378 members participated in 2009. In 2016, 73 groups with 3,400 participants registered for the moose CSH. The report provides harvest data broken out by residency.

In March 2015, the Alaska Supreme Court found that the BOG's longer season and "any bull" bag limit for the community hunt as established in 2011 was lawful and reasonable. The court noted that these regulations provided opportunities for the community hunting pattern, including of use of local areas and efficiency.

On October 23, 2016, the BOG held a teleconference meeting to consider changes to the CSH regulations for GMUs 11, 12, and 13. Ahtna Tene Nené had requested changes to the CSH regulations to address increasing participation in the hunts and the rapid harvest of the allocation of 100 "any bulls," primarily by nonlocal hunt participants. The BOG did not adopt regulatory changes at this meeting. Instead, it requested that a call for proposals be issued to address issues with the GMU 13 CSH at a special meeting to be held in March 2017.

The Division of Subsistence conducted systematic household surveys in most Copper Basin communities from 2009–2013. The results of these surveys can be compared with findings for harvests and uses of moose for 1982 and 1987. Estimated moose harvests dropped from 225 in 1987 (when the local subsistence registration hunt was in place) to 183 in the most recent study years. As expressed in usable pounds, the average household moose harvest in the recent study years dropped 17% from 1987. Average per capita use of moose dropped 36%. However, the recent research documented the continuing importance of subsistence harvests of fish and wildlife to Copper Basin communities. The report provides detail on findings from this research.

The report also summarizes data on the number of moose hunters, moose harvests, and hunter success rates for local and other Alaska hunters for the period 1963 through 2016. For the 17-year period from 1992–2008, the number of Alaska resident moose hunters in GMU 13 averaged 4,429 annually. In comparison, the annual average number of moose hunters for the 12-year period from 1980 through 1991 was 3,317. For the 7-year period 2009–2015 since the current ANS of 300–600 moose has been in place, the number of Alaska resident moose hunters in GMU 13 averaged 5,211 annually.

From 1992 through 2008, the annual average moose harvest in GMU 13 by Alaska residents was 718 moose, compared to an annual average from 1980 to 1991 of 764 moose. More recent data for the 2009–2015 period document an annual average harvest of 868 moose in GMU 13 with a success rate of 16.7%.

From 1992 through 2015, the number of local resident moose hunters was relatively steady, with an annual average of 887 for the period 1992–2008 and 920 for the period 2009–2015. Nonlocal Alaska resident moose hunters comprised about 75% or more of the moose hunters in GMU 13 from 1969 to 2015 and have taken about 80% or more of the annual harvest.

For the period 2009–2015, local hunters' success rate was 14.6%. Generally, hunting success rates for nonlocal Alaska hunters were higher than those of local hunters, especially since the early 1990s

Just under half of local resident moose hunters in GMU 13 used non-motorized forms of transportation (primarily road hunting in highway vehicles). In contrast, 79% of nonlocal resident moose hunters used motorized forms of transportation, such as ATVs. Of all local residents who harvested a moose in GMU 13 from 2009–2016, 63% used motorized transportation, while 37% used non-motorized. In contrast, 89% of nonlocal resident successful hunters used motorized transportation.

Communities and sociocultural groups that have depended upon subsistence harvests of wild resources have historically observed a pattern of hunting that emphasizes efficiency and opportunistic harvest of animals whenever viable situations present themselves. Within these traditions, restrictions on hunting, such as those related to seasons, bag limits, and antler size, are often viewed as arbitrary and inefficient. Thus, considerations of reasonable opportunity should include the different ecological, cultural, economic, and technological conditions of diverse social groups and their histories of dependence on subsistence resources.

There are several factors that inform an evaluation as to whether regulations are providing reasonable opportunities for subsistence harvests and supporting customary and traditional patterns of use. These factors include flexibility and timing of seasons, level of competition, and bag limit requirements.

The open regulatory season is the "window of opportunity" within which hunters can schedule activities. Competition has become an important factor for moose hunting success in GMU 13. Local subsistence hunters have reported that it is difficult to obtain moose when there are thousands of hunters participating during the general harvest ticket or subsistence permit seasons. Moose become difficult to find along the road system because the available animals are taken quickly or displaced.

In establishing the CSH regulations in 2009, the BOG recognized the well-established pattern of hunters providing moose for multiple households, and therefore authorized designated hunters within permitted communities. However, regulations that place antler size restrictions on mature bulls (e.g. bulls with 50 inch or greater antlers) may reduce the number of available animals for harvest, thereby increasing the time and effort needed to locate a harvestable animal and decreasing the opportunity to take an animal within the open season, given a high level of competition with hunters.

Comments offered by Copper Basin residents during recent research conducted by the Division of Subsistence are included in the report to provide an important perspective on hunting opportunities in GMU 13. These comments reflect notable frustration with what respondents described as intense hunting pressure by nonlocal residents. The phenomenon in which specific groups of people acquire the means to utilize superior technology has been labeled "techno-economic differentiation," a situation in which people who cannot afford full technological inventories constitute a collection of 'have nots'.

Maintaining efficient moose harvest activities is a consistent theme in interviews with Copper Basin hunters. These hunters view the opportunity to harvest "any bull" moose as critical to meeting community subsistence needs in an efficient manner, consistent with the BOG's C&T findings regarding moose in GMU 13. To support subsistence hunting opportunities, state regulations have maintained an "any bull" harvest opportunity in GMU 13 in most years since 1983.

In concluding, the report notes that the fish and wildlife populations of the Copper River Basin have sustained many Alaska communities for millennia.

The board, the public, and resource managers have developed regulatory alternatives and taken actions after giving consideration to many factors, including competition, accessibility, hunt administration, eligibility, and traditionally-observed patterns. A key theme over the several decades of efforts to provide for opportunities for subsistence uses of moose in the Copper River Basin has been to recognize the local patterns of use while acknowledging that all Alaska residents must have opportunity to participate in moose hunting in the area. The BOG's regulatory actions reflect the goal of providing flexibility and efficiency for subsistence uses, through adequate seasons and appropriate bag limits. Thus the Copper Basin is a prime example of an area with long established local traditions of subsistence uses that are challenged by the area's accessibility to population centers. Knowledge of these use patterns and of past efforts to craft regulations that support them are key to meeting the goals of Alaska's subsistence law and sustainable resource management.

1. INTRODUCTION

This report provides the Alaska Board of Game (BOG) with updated background information about subsistence and other hunting of moose in Game Management Unit 13 (GMU 13), the Copper River Basin of Southcentral Alaska (Figure 1). It focuses on information which the BOG may find useful in formulating regulations which "provide a reasonable opportunity for subsistence uses" of GMU 13 moose, as required by AS 16.05.258(b). Subsistence uses are noncommercial, customary and traditional uses of fish and wildlife resources for food and other purposes (AS 16.05.940(34)). This report draws from previous overviews (e.g. ADF&G 1992; Fall and Simeone 2006), and is modeled after an overview of the GMU 13 caribou (the Nelchina herd) regulatory history prepared for the BOG in October 2010 (Fall and Simeone 2010). Although focused on GMU 13, the patterns of use of moose and general history summarized in this report also apply to GMU 11, and the portions of GMU 12 and GMU 20 within the traditional territory of the Ahtna Athabascans. This area generally corresponds to the Gulkana, Cantwell, Chistochina, Gakona, Mentasta, Tazlina, Chitina, and Kluti Kaah Community Harvest Area for moose and caribou defined at 5 AAC 92.074(d). GMU 11 and much of GMU 13 are within the Copper Basin Census Subarea as defined by the U.S Census Bureau. Portions of GMU 13 are within the Matanuska-Susitna Borough and the Denali Borough. All of GMU 13 and GMU 11 are outside the nonsubsistence areas defined by the Joint Board of Fisheries and Game (5 AAC 99.015).

CURRENT MOOSE HUNTING REGULATIONS IN GMU 13 AND GMU 11

In the 2016/2017 regulatory year, the following opportunities existed for hunting moose in GMU 13 for Alaska residents:

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 (SF/50/4BT) (5 AAC 85.045; finding 2011-184-BOG).
2. A state-managed community subsistence harvest hunt, with an August 20–September 20 season, with a one bull bag limit that includes a harvest quota of up to 100 "any bulls" (bulls that have no antler restrictions), followed by the opportunity to harvest one bull with spike-fork or 50-inch antlers or antlers with 4 or more brow tines on at least one side (5 AAC 85.045, 5 AAC 92.072, 5 AAC 92.074, 5 AAC 92.050, 5 AAC 92.050, 5 AAC 92.062; finding 2006-170-BOG).
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 (5 AAC 85.045; finding 2011-184-BOG).
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 AAC 85.045; finding 2011-184-BOG).
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 for these registration permits [Public Law 96-487 (ANILCA) Code of Federal Regulations 36 CFR Part 242 and 50 CFR Part 100].

The BOG has also authorized a winter registration hunt and winter CSH hunt for GMU 13 to take one bull during a December 1–December 31 season. ADF&G has not implemented these hunts since 2014 due to concerns about high levels of participation and the ability to manage the hunt within biologically sustainable limits.

In addition, there was also a nonresident drawing permit hunt in GMU 13, with a September 1–September 20 season and a bag limit of one bull with 50-inch antlers or antlers with 4 or more brow tines on at least one side (5 AAC 85.045). Up to 150 permits may be issued, and 115 were issued for 2016.

The state-managed community subsistence hunt also was open in GMU 11, but with an August 10 opening date. In that portion of GMU 11 east of the east bank of the Copper River, upstream from and east of the east bank of the Slana River, there was a resident and nonresident registration hunt from August 20–September 17, with a bag limit of one bull with SF/50/3BT for residents and 50/3BT for nonresidents. For the remainder of GMU 11, there was a resident and nonresident season of August 20–September 20 with a bag limit of one bull with SF/50/3BT. Federal subsistence regulations for GMU 11 added registrations hunts for one bull moose during an August 20 – September 20 season. There was also a November 20–December 20 registration hunt in a portion of GMU 11 for one bull. Only residents of qualified rural areas could participate in the federal subsistence registration hunts.

HISTORICAL USES OF MOOSE IN GMU 13[1]

Most of GMU 13 and GMU 11 are with the traditional territory of the Ahtna Athabascans (de Laguna and McClellan 1981:642). Moose (*deniigi* in the Ahtna language), along with caribou and, in some areas, Dall sheep, were the primary big game species hunted for subsistence by most Ahtna communities. Traditionally, the Ahtna followed a patterned seasonal round of subsistence activities shaped primarily by resource availability. Moose were hunted from late summer (August) to late winter (April). Late summer and fall hunting was based from upland camps (de Laguna and McClellan 1981:646).

Until the early 20th century, the Ahtna harvested moose with individual snares set across a trail or in snares set in game fences up to two or more miles long. Moose were also hunted in winter using snowshoes. A skilled hunter could track down and harvest a moose within three or four hours (Simeone 2006:33). Firearms were in general use for big game hunting by the late 19th century (de Laguna and McClellan 1978:647; Simeone 2006:5).

Ahtna oral traditions report that moose were scarce in the Copper River Basin into the 1930s and 1940s. Indeed, an elder interviewed in 2004 reported that before 1950, moose were scarce enough that if hunters saw tracks, they were obliged to hunt the animal. The elder reported that when he was a young man, he "ran down a moose" in winter, chasing it on snowshoes for five miles. He said, "You have to start slow and then speed up. You know you have got the moose when it slows down and then stops to rest" (Simeone 2006:21).

By the 1920s and afterwards, federal and, later, state authorities placed restrictions on big game hunting in present-day GMU 13 as the Copper Basin was connected by roads to the growing urban centers of Fairbanks (Richardson Highway, 1900s) and Anchorage (Glenn Highway, 1940s). The non-Alaska Native population of the Copper Basin grew after World War II, augmented by such economic booms as construction of the Trans-Alaska oil pipeline in the 1970s. By the 1950s, most of the Ahtna had settled in permanent communities along the highways, in part due to increased government pressure on families to send their children to school (Stratton and Georgette 1984:23).

HUMAN DEMOGRAPHY

Table 1, Figure 2, and Figure 3 report the population of areas connected by road to GMU 13 from 1960 through 2015. Since 1990, the population of these areas has increased 43%, from 399,051 to 570,920. Over the same period, the population of the Copper River Census Subarea decreased 1% from 2,763 to

1. This section draws from earlier summaries prepared to support the BOG's customary and traditional use findings, including ADF&G (1992) and Fall and Simeone (2006). Simeone (2006) provides more detail on Ahtna big game hunting, including hunting of moose. Two BOG findings (2006-170-BOG; 2011-184-BOG) also provide detail on historical and contemporary patterns of moose hunting in GMUs 13 and 11.

2,735. In 1990, the Copper River Census Subarea held 0.7% of the population connected to GMU 13 by road, and 0.5% in 2015 (Figure 2). Based upon federal census data, in 2010 about 29% of the Copper River Census Subarea population was Alaska Native/American Indian[2]. ADF&G studies from 2009–2013 estimated a population in the communities of GMUs 11 and 13 (excluding Cantwell, Glacier View, Eureka Roadhouse, and Chickaloon), of 2,811, with 30% of that population Alaska Native (Holen et al. 2015:558).

2. ADLWD (Alaska Department of Labor and Workforce Development) Research and Analysis Section. "Census and Geographic Information." Accessed February 23, 2017. http://live.laborstats.alaska.gov/cen/dparea.cfm.

2. REGULATORY HISTORY[3]

PRE-STATE SUBSISTENCE LAWS (1960–1978)

This section describes BOG deliberations, regulatory proposals, and litigation that have shaped regulations governing moose hunting in the Copper River Basin, Appendix A provides a regulatory history for moose hunting in GMU 13 from statehood through the 2016/17 season. Table 2 is a chronology of selected key events post-statehood concerning the moose hunting regulations in GMU 13. These regulations did not distinguish subsistence hunting from other Alaska resident hunting until 1983. From 1960 through 1973, there were two open hunting seasons annually, the first occurring from late August until late September, and the second taking place in November (Figure 4). From 1960 through 1974, moose hunting in GMU 13 opened each year on August 20. The closing date for the first season was September 30 until 1970 when this was changed to September 20. With the exception of 1973, the September 20 closing date was retained through the 1989/90 season. The November season opened on November 1 from 1960 through 1973. The closing dates varied from November 30 (1960–1965), November 20 (1966–1972), to November 10 (1973). The November season was eliminated beginning in 1973 in response to declining moose numbers and relatively large harvests (Tobey 1993:97).

An important change in moose seasons in GMU 13 occurred in 1975 when the opening date was moved to September 1. The September 1–20 season remained unchanged for all hunters until 1987 when provision for an earlier subsistence opening on August 25 was made (see below). The subsistence season of August 25–September 20 was in effect through 1989.

Although season length was relatively stable from 1975–1989, beginning in 1980, additional restrictions on moose hunting during the general season in GMU 13 were adopted in the form of antler size requirements, in response to continuing high levels of hunter interest. These antler size requirements pertained to all hunts through 1982, to non-subsistence hunters through 1989, and again for all hunters (except for those eligible for the federal hunt) from 1990 through 1994 (Figure 5).

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 (Stratton and Georgette 1984:15). Competition among hunters for the available moose in GMU 13 continued to be high.

REGULATORY ACTIONS UNDER THE FIRST TWO STATE SUBSISTENCE LAWS (1978–1989)

In 1978, the Alaska Legislature passed the state's first subsistence statute. The new law required the BOG to adopt regulations permitting subsistence uses unless such regulations jeopardized the maintenance of the resource on a sustained-yield basis (then AS 16.05.255 (b), repealed 1986 and replaced with AS 16.05.258). The Board of Game did not address subsistence hunting in GMU 13 under the new law until 1983.

In early 1980, a Gulkana resident shot a caribou near Ewan Lake in GMU 13 for subsistence use, but he was cited because he had no permit (all caribou hunting in the unit was regulated by drawing permit at the time) and the season had closed. The defendant argued that the current regulations did not provide for his subsistence needs: he could not have killed a caribou during the open season because there were no caribou in the vicinity of his cabin at the time and he would have had to charter a plane to access the caribou, which he could not afford. The court agreed and dismissed the case, stating that the BOG had

3. This regulatory history updates the history found in ADF&G 1992 and ADF&G 2009.

acted in "a manner inconsistent with AS 16.05.255(b) [now AS 16.05.258(b)(1)] since it had accommodated sport hunters while failing to provide for the subsistence needs of the defendant."[4]

Although the Ewan case specifically addressed caribou hunting opportunities, its findings required BOG action for subsistence moose hunting as well. Consequently, at its spring meeting in 1983, the BOG passed Proposal 173, which established a subsistence drawing permit hunt (100 permits) with a one bull bag limit. Proposal 173 was submitted by Ahtna Inc., the regional Alaska Native for-profit Alaska Native Claims Settlement Act (ANCSA) corporation. In part, Ahtna Inc. proposed that the hunt be limited to "qualified subsistence applicants residing in Unit 13" and that the bag limit be "one bull moose per family unit." The justification read:

> There are numerous local subsistence hunters who hunt close to the road system that seldom have the opportunity to shoot a large bull [the bag limit for all hunters at this time was a bull moose with 36 inch antlers or greater]. By allowing them to shoot a bull of any size, their chances of success would increase. (ADF&G 1983:82–83)

The BOG adopted several permit conditions in the regulations for this hunt, including a specification that the applicants be residents of GMU 13, and that no more than one person per household could apply for the permit (ADF&G 1983:14).

The limit of one subsistence permit per household for subsistence moose hunters in GMU 13 was in effect in 1983, 1984, and 1985, but was dropped when a subsistence registration hunt began in 1986 (see below). However, in 1987 proposals from three local user groups, the Copper River Fish and Game Advisory Committee (Proposal 78), the Paxson Fish and Game Advisory Committee (Proposal 79), and the Copper River Native Association (CRNA) (Proposal 80), advocated a return to a limit of one subsistence permit per household for one bull moose, in order to "better distribute the available game" (ADF&G 1987:21). In 1987, the BOG adopted this change.

As a result of the Alaska Supreme Court's decision in *Madison v. Alaska Department of Fish and Game* in 1985,[5] regulations limiting eligibility for state subsistence hunts to rural residents were invalidated. Consequently, in 1985 all Alaskans were eligible to apply for 200 subsistence Tier II[6] permits for taking "any bull" moose in GMU 13. Hunters without permits were subject to antler size restrictions (ADF&G 1992:10–11).[7]

In 1986, the Alaska Legislature passed a new, second subsistence law which established a rural subsistence preference. Meeting in an emergency session in June 1986, the BOG reviewed the regulations for a limited number of hunts with special resource conservation concerns, including GMU 13 moose. The BOG affirmed the earlier finding at 5 AAC 99.025 that there were positive customary and traditional uses of this game population by residents of the GMU. It adopted regulations allowing subsistence hunters to take one bull moose by registration permit. An unlimited number of registration permits were available.

During its spring 1987 meeting, the BOG addressed season length for subsistence moose hunting in GMU 13. This was the first meeting following the passage of the 1986 subsistence law for which public proposals on GMU 13 were accepted. Proposal 81, submitted by CRNA, proposed an extension of the

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4. *State of Alaska v Danny O. Ewan*, 3 GL 80-21,22,23,33 (Alaska District Court, September 30, 1980).
5. For a discussion of this ruling, see Case and Voluck (2012:301-302)
6. State Tier II hunts are held when there is not enough of a game population with customary and traditional uses to provide a reasonable opportunity for subsistence uses. Hunters must answer questions on an application concerning their dependence on the game for their livelihood and availability of alternative resources. Applications are scored based on responses to the questionnaire and permits are issued to those with the highest scores.
7. Note that the report prepared for the 1992 special BOG meeting on June 23 erroneously stated that these 200 permits were issued through a drawing (ADF&G 1992:11). Subsistence regulations published for 1985 show that these permits were awarded through the Tier II process (ADF&G 1985:70).

subsistence season from September 1–20 to August 20–September 30, a return to the full fall season that had been in effect before 1970. CRNA offered the following justification (ADF&G 1987:21):

> The average subsistence user cannot compete with off-road vehicles, which most sport and non-subsistence hunters use. The majority of the subsistence users hunt with their private vehicles along the road. The subsistence hunters therefore require extra opportunity to make their hunts more successful.

The BOG passed an amended version of this proposal, moving the opening date forward to August 25 but retaining September 20 as the final day of the season.

In summary, for the most part, from 1983 through 1989, the BOG modified hunting regulations for GMU 13 to provide for subsistence uses by doing three things:

1. Limiting eligibility for subsistence moose hunting in GMU 13 to residents of the GMU (regulatory actions in 1983 and 1986)
2. Easing bag limit restrictions for subsistence permit holders (1983), by allowing the taking of "any bull" instead of requiring taking of bulls with antlers 36 inches or greater in width
3. Increasing the subsistence hunting season by restoring seven days in August (1987)

The ADF&G moose management report covering the 1989/90 regulatory year (Tobey 1993:101) noted the following about the subsistence registration hunt:

> In 1989, 821 permits were issued. The highest subsistence harvest occurred in 1989 when 215 moose[8] were harvested. Hunter success was 35% in 1989. With the high success rate, the harvest would have been larger had the board not limited the number of permits to one per household. The mean antler spread of subsistence-killed bulls was 36 inches. Of bulls harvested, 53% had antlers less than 36 inches and would not have been legal under the 36-inch minimum for the sport hunt.

The findings of household surveys conducted by the Division of Subsistence with research partners in Copper Basin communities for the 1982 and 1987 study years illustrate the effect of the liberalized subsistence moose (and caribou) hunting regulations (McMillan and Cuccarese 1988; Stratton and Georgette 1984; CSIS[9]). As shown in Table 3, the estimated harvest of moose by Copper Basin residents increased from 147 animals in 1982 to 225 in 1987 (increase of 53%). In terms of food production, households harvested an average of 83.9 lb of moose in 1987, an increase of 29% from the 65.2 lb per household in 1982. For those households using moose, the per capita use was 60.3 lb in 1987, an increase of 38% from 43.7 lb per person used in 1982.

McDowell Decision and Implementation of the Third State Subsistence Law (1989–1995)

The Alaska Supreme Court's decision in *McDowell v State of Alaska* in December 1989 invalidated the rural preference in state law, resulting in all Alaska residents being eligible to participate in subsistence hunting. The McDowell decision was followed by 5 years of uncertainty and disruption regarding subsistence moose hunting opportunities in GMU 13 under state regulations. In general, subsistence hunting seasons were shortened and bag limits restricted because of the substantial increase in eligible hunters from populous areas connected to GMU 13 by road. A decline in the moose population also occurred (Tobey 1993:100).

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8. Note that 215 moose were taken by local residents in the subsistence registration permit hunt, with 34 more taken in the general season hunt, for a local harvest of 249 in 1989 (Table 7).
9. ADF&G Division of Subsistence, Community Subsistence Information System (CSIS): http://www.adfg.alaska.gov/sb/CSIS.

The state subsistence moose hunting seasons in GMU 13 for the 1990/91 and 1991/92 regulatory years were substantially different from any which had occurred before. The BOG authorized a split season for 1990/91, with a five-day September 5–9 general hunt and a Tier II hunt from December 1–31. The bag limit for the September season was one bull with 36 inch or greater antlers, except in a portion of GMU 13A where the bag limit was a bull with spike fork antlers. For the December Tier II hunt, the bag limit was one bull of any antler size. In addition, a new federal subsistence hunt was created by the Federal Subsistence Board (see below). In 1991, a seven day state season from September 5–11 occurred, with antler restrictions. The Tier II hunt for "any bull" was eliminated (Tobey 1993:100).

The nonresident moose season in GMU 13 was closed beginning in 1990 and did not reopen until 1993. It closed again beginning in 2002, and reopened in 2009 (Appendix A).

In the summer of 1991, Kluti Kaah, the Ahtna Tribal village of Copper Center, filed suit[10], alleging that the seven day state season did not provide adequate opportunity for subsistence moose hunting.[11] The Superior Court agreed and on August 16 issued a preliminary injunction prohibiting the state from enforcing the seven day moose hunt against of the residents of Kluti Kaah; the court ordered an August 15–September 20 season by permit and a harvest of 40 moose for Kluti Kaah residents.[12] However, the Alaska Supreme Court issued a stay on this order[13] and the seven day hunt proceeded as scheduled.

On May 8, 1992, the Alaska Supreme Court granted an emergency petition to review the above Superior Court order. The court vacated the Superior Court's injunction from the previous August, and returned the case to the Superior Court for further proceedings on the merits.[14, 15]

On June 11, the Superior Court accepted the plaintiff's motion for summary judgement, and then ordered the BOG to establish a fall moose hunt in GMU 13 as either a Tier II hunt or a general or Tier I hunt following specified procedural steps. The court ordered the BOG to estimate the number of subsistence users living inside and outside of GMU 13 and to determine the portion of the harvestable surplus of moose needed to provide for subsistence uses.[16]

The Alaska Legislature had adopted a new, third subsistence law earlier in 1992. The BOG scheduled a series of "consistency review meetings" for fall 1992 during which it reviewed C&T findings in 5 AAC 99.025[17] and established "amounts reasonably necessary for subsistence" (ANS) findings.[18] However, because of the Kluti Kaah litigation, the BOG acted more quickly to establish an ANS for GMU 13 moose during a special meeting on June 23, 1992. The BOG established an ANS finding of 600 moose

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10. *State of Alaska v. Kluti Kaah Native Village*, 3AN-91-04554 CI, May 8, 1992: page 2.
11. For a general overview of the sequence of events pertaining to this case in 1991 through July 29, 1992, see (ADF&G 1992).
12. *State of Alaska v. Kluti Kaah Native Village*, 3AN-91-04554 CI, May 8, 1992: page 2.
13. *State of Alaska v. Kluti Kaah Native Village*, 3AN-91-04554 CI, May 8, 1992: page 4
14. *State of Alaska v. Kluti Kaah Native Village*, 3AN-91-04554 CI, May 8, 1992: page 11
15. The Court split 3-2 in this decision. In his dissent, Chief Justice Rabinowitz wrote that "There is no question that the traditional Ahtna method of hunting this game population encompassed much more protracted opportunities to engage in this activity with the younger generation. To compress the long standing custom into a sport hunter's seven-day "vacation" is to legislate a substantial departure from the historical subsistence hunting experience... I would affirm the superior court's preliminary injunction for the reasons stated by that court, namely because plaintiff has established irreparable injury and substantial questions going to the merits...."
16. Order Granting Plaintiff's motion for Summary Judgement, Superior Court for the State of Alaska, Third Judicial District, June 11, 1992.
17. Alaska Statute 16.05.258(a) requires the Board of Game to identify game populations or portions of populations that are customarily and traditionally taken or used for subsistence. These are called "C&T findings." The BOG applies the 8 criteria listed in Joint Boards of Fisheries and Game regulation 5 AAC 99.010 when making these determinations.
18. Alaska Statute 16.05.258(b) requires the Board of Game to determine the amount of the harvestable surplus of game populations or portions of populations with customary and traditional uses that is reasonably necessary for subsistence uses. This is called an "ANS finding."

for GMU 13. The board adopted additional written findings (No. 92-60-BOG)[19] that explained how the ANS determination of 600 moose was developed. According to 92-60-BOG, the board followed these steps:

1. Accepted the department's recommendation that 600 bull moose (based on a harvest range of 500 to 700) were available for harvest.
2. Determined that the best available information upon which to base an ANS finding was for the period 1980 through 1991, a 12-year time frame. Although data were available for the previous 20 years, the board concluded that data for the previous 12 years were more reliable "due to improved data gathering techniques," and more relevant due to "changing human demographics."
3. Determined that there were approximately 3,000 "subsistence users who hunt [moose] in Unit 13. Approximately 600 of these hunters are local residents of Unit 13." The board noted that an annual average of 3,400 Alaska residents hunted moose in GMU 13 over the 12-year period, but this time period included 5 years of high moose populations. Moose populations had declined in the previous 2 years as had, in response, the number of moose hunters. Therefore, "considering the range of numbers, the Board decided 3000 was the number of subsistence users who would hunt moose in Unit 13 in 1992."
4. Determined that "all 600 harvestable moose were needed to provide a 'reasonable opportunity' for subsistence uses" by the 3,000 hunters. The board stated that it reached this conclusion "working under the all Alaskans policy which states that all Alaska residents are eligible to be subsistence users."
5. Noted that the success rate for moose hunters in who live in GMU 13 had ranged between 19% and 28% for the period 1980 to 1991, and the success rate for nonlocal hunters had ranged between 19.5% and 28%. The board 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."

This summary of 92-60-BOG illustrates that the board relied on several key types of data, including human demography, annual harvests of bull moose in GMU 13 by all Alaskans, estimated numbers of Alaskans who hunted moose in the unit, place of residence of hunters and successful hunters, and hunter success rates. The 12 years upon which the ANS was based included 8 during which the bag limit for subsistence hunters was one bull without antler restrictions.

After adopting the ANS finding, the BOG established a 14 day general season (September 1–14) for moose hunting in most of GMU 13 with a bag limit of one bull with 36-inch antlers per household. Portions of GMU 13A had different bag limits related to antler size (see Appendix A). For most of the unit, the board adopted a vehicle restriction that prohibited use of motorized vehicles, except boats, off state maintained roads and highways for moose hunting or transportation of hunters between August 26 and September 7.

Plaintiffs in the Kluti Kaah case filed motions for further relief claiming the regulation adopted by the BOG in June 1992 was invalid. On July 9, the Superior Court ruled that the BOG had not complied with the earlier order and overturned the June 23 regulation. The court objected to the BOG's use of the "all Alaskans policy" established with the McDowell decision wherein all Alaskans are eligible to participate in subsistence hunts at the Tier I level, and asserted further that using hunter success rates to evaluate reasonable opportunity was arbitrary. The court ordered that the BOG "shall immediately [emphasis in

19. Alaska Board of Game, 2006, "Findings for the Alaska Board of Game #2006-170-BOG," Accessed February 3, 2016. http://www.adfg.alaska.gov/static/regulations/regprocess/gameboard/pdfs/findings/06170bog.pdf

original] implement the process to establish a Tier II hunt for moose in GMU 13, such hunt to run from September 1–September 20, 1992.[20]

On July 10, the Alaska Supreme Court acted in *State of Alaska v. Morry and Kwethluk IRA Council*, upholding the "all Alaskans policy." The state therefore asked the Superior Court to reconsider its July 9 order. However, while acknowledging that the potion of the order based on opposition to the "all-Alaskans policy" was now invalid, the court declined to change the determination on what constitutes reasonable opportunity and reaffirmed the order for a Tier II hunt (ADF&G 1992).[21]

In an emergency meeting on July 29 in response to the court order, the BOG directed ADF&G to begin distributing Tier II permit applications for a September 1–20 Tier II hunt, but did not take final action to authorize the hunt pending an appeal to the Alaska Supreme Court.

Following this emergency meeting, the state appealed the Superior Court's ruling, and the Supreme Court issued a stay on August 5. Consequently, the September 1–14 season with antler restrictions proceeded. Subsequently, the Supreme Court ruled in favor of the board's regulations; the Superior Court's rulings were vacated, and the case was finally dismissed on July 8, 1993.[22]

In 1993 and 1994, the state moose season in GMU 13 ran from August 20 through September 20 with a bag limit of one bull with spike fork or 50 inch antlers or antlers with 3 or more brow tines. Drawing permit hunts that allowed taking of cow moose occurred in portions of GMU 13A.

In August 1994, the Kluti Kaah Native Village of Copper Center and the Copper River Native Association again challenged Unit 13 moose regulations, arguing that the spike fork/50 inch antler provision failed to provide a reasonable opportunity for subsistence hunting and that opportunity should be regulated by Tier II permits. This new case was generally referred to as "Kluti Kaah II" (Barry 1995:26).[23]

At its March 1995 meeting in Fairbanks, the BOG adopted an amended version of Proposal 55 that established an August 1–15 subsistence season for one bull moose by Tier II permit in GMU 13, with up to 150 permits to be issued. At the same meeting, the BOG adopted an August 20–September 20 general season in the unit for one bull with spike fork antlers or 50-inch antlers or antlers with 3 or more brow tines on one side. Subsequently, plaintiffs in the Kluti Kaah II case indicated to the Department of Law that they were satisfied with the Tier II hunt adopted by the Board of Game in March 1995 and intended to drop the suit (Barry 1995:26). The case was dismissed on September 20, 1995.[24]

In response to public proposals, the BOG changed the Tier II hunt season for moose in GMU 13 to August 1–August 19 for 1997 and August 15–August 31 for 1999 through 2008.

Table 4 and figures 7–11 report patterns and trends in the Tier II moose hunt in GMU 13 for the 14 years it was in effect from 1995 through 2008. An annual average of 1,566 permit applications were submitted. 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 (see discussion below), the percentage of Tier II permits awarded to Copper Basin residents dropped to 53% through 2007 (Figure 9). 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) (Figure 10). For the entire period, Copper Basin residents took 60% of the Tier II moose harvest. However, Copper Basin residents accounted for just 45% of the harvest from 2002 through 2007 compared to 78% from 1995 through 2001 (Figure 11).

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20. The Superior Court for the State of Alaska, Third Judicial District, Order Granting Motion for Further Relief, July 9, 1992
21. Superior Court for the State of Alaska, Third Judicial District, order on Expedited Motion for Reconsideration, July 20, 1992.
22. *State of Alaska v. Kluti Kaah Native Village*, 3AN-91-04554 CI,. Superior Court final judgement, July 8, 1993.
23. *Kluti Kaah Native Village v. State, Rosier* (Kluti Kaah II), 3AN-94-07363 CI,. Department of Law file no. 221-95-0171;
24. Superior Court for the State of Alaska, Third Judicial District, order dismissing Case No. 3AN-94-07363 CI, September 20, 1995.

FEDERAL REGULATIONS (1990–PRESENT)

Beginning in 1990, the Federal Subsistence Board (FSB) has adopted subsistence hunting regulations for federal lands in GMU 13. For moose, the FSB initially adopted the state's pre-McDowell regulations (1987–1989). The season ran from August 25 through September 20 with a one bull per household limit by federal permit. Only residents of GMU 13 were eligible for these federal subsistence permits. Under the authority of a federal permit, moose can be taken only on federal public lands. In subsequent years, the season dates were extended. Presently (2016/17 regulatory year), the open federal season is August 1–September 20. Also, residents of additional rural communities outside of GMU 13 became eligible for subsistence hunting in portions of the unit. For example, residents of GMU 20D except Fort Greely (including Delta Junction, Healy Lake, and Dot Lake) are eligible to hunt moose under federal subsistence regulations in GMU 13B.

ADDRESSING CONCERNS WITH TIER II HUNTS (1995–2008)

Beginning in 1990 and through 2008, the BOG invested considerable effort 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. Although during this period there were over 20 Tier II hunts throughout the state in some years[25], most of the BOG's attention focused on the Tier II hunts for moose and, especially, caribou (the Nelchina herd) in GMU 13 because of the popularity of these road-connected areas to urban population centers and the large number of applicants for these hunts. Appendix B provides a history of Tier II regulations, including questions and scoring.

Also from 1996, and increasing in later years, the BOG heard public testimony regarding loss of hunting opportunity as a consequence of the Tier II permit system, especially for younger hunters and hunters living in GMU 13. In October 2006, the BOG 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).

At its January 2002 meeting, the BOG made significant modifications to the Tier II scoring system (5 AAC 92.070). It changed from 30 to 50 the maximum number of years of use of the Tier II population used to award points for the two questions on customary and direct dependence; one point per year would be awarded for the question measuring the applicant's history of use and 0.2 points would be awarded for the question measuring the applicant's household's history of use.[26] After this change, there was a shift of permits to older, urban residents from younger, rural residents (ADF&G 2009; Fall and Simeone 2006; Table 4; Figure 9).

To attempt to address issues regarding the Tier II hunts for caribou and moose in GMU 13, the BOG established "Subsistence Implementation Committee" in 2004. The committee met several times over the next several months, and developed several proposals that the board deliberated at subsequent meetings.

The BOG held a special meeting October 7–9, 2006, in Anchorage to address GMU 13 moose and caribou topics, including eight proposals developed by the board's Subsistence Implementation Committee. Proposal 5 would have capped maximum points for measuring an applicant's history of use at 30 years (as before 2002) and awarded a total of 40 points (down from 60) for Factor 1 (customary and direct dependence) and increased to 60 points (from 40) for Factor 2 (alternative sources of food). The justification stated that the proposal "will get permits to those who are most dependent on the resource." ADF&G analysis (ADF&G 2006; Fall and Simeone 2006) (looking only at Tier II GMU 13 caribou permits) showed that the change could shift permits from residents of more populated areas to younger applicants from the hunt area. The BOG did not adopt the proposal, noting

25. For example, the Tier II Permit Hunt Supplement for 2003–2004 listed 23 separate Tier II hunts.

26. See Appendix B, page 3, for other changes to Tier II scoring made at the January 2002 BOG meeting.

> There has been a long term use of the resource by residents of the Mat-Su Valley and Anchorage. Board members were concerned that adjustments to the scoring system will shift and eliminate subsistence users from the Tier II hunt in Unit 13. It is also likely to be legally challenged since the State Constitution provides subsidence rights to all Alaskans. (Page 2 of meeting summary)[27].

In its February/March 2009 meeting, the BOG considered a similar proposal submitted by the Ahtna Tene Nené Customary and Traditional Use Committee (Proposal 87) to change the allocation of points in the Tier II scoring process. As in 2006, ADF&G analysis (ADF&G 2009) showed that allocating more points to Factor 2 (alternative sources of food) and capping the points awarded for Factor 1 (customary and direct dependence) at 30 years of use (which, as noted above, had been in place before 2002), would result in more permits being awarded to residents of the Tier II hunt areas and to younger hunters. The BOG did not make any changes to the Tier II scoring system based on Proposal 87.

As an alternative to changes to Tier II scoring, in March 2005 the BOG considered Proposal 155, which sought to create a super-exclusive use[28] area and modify caribou and moose seasons in GMUs 11 and 13. The stated purpose of this "Gulkana/Copper River Subsistence Harvest Area" was to "protect the Gulkana/Copper River Customary and Traditional Harvest and Use Pattern identified by the Board, which was developed and is still practiced by the original Ahtna residents of the area, and has been passed down to other, more recent, residents of the area and to other participants in the harvest and use pattern." The proposal also included a prohibition against taking any type of game or furbearer in any other area of the state, and a prohibition against using vehicles with a gross vehicle weight of greater than 8,000 pounds. Hunters would also be required to salvage all edible meat as well as the heart and liver.

The BOG did not create the super-exclusive area. According to the BOG's "Summary of Actions," BOG members decided that the proposal was "an alternative but not the solution to the present problem." The BOG also did not revise the ANS, stating that "Board members decided this was not a solution to the problem." The referenced "problem" included the perceived "inequities and unfairness" in the Tier II system that the board described in its 2006 written findings at 2006-170-BOG (Alaska Board of Game 2006).

NEW BOARD FINDINGS, NEW ANS, AND THE COMMUNITY SUBSISTENCE HUNT (2006–PRESENT)

Beginning in 2006**,** the BOG began to develop new regulations for subsistence moose and caribou hunting in GMU 13 based upon an interpretation of state law which holds that not all Alaskans are "subsistence users."[29] Under this interpretation, the BOG may adopt subsistence regulations that require people to hunt and use game populations in accordance with the traditional pattern as reflected in their findings. This approach contrasted with the interpretation in place from 1992 that saw the goal of subsistence regulations as providing an opportunity for all Alaskans who wished to do so to hunt and use a resource according to a traditional pattern, but to not require hunters to conform to that pattern. By adopting regulations closer to the community use findings at 2006-170-BOG, the BOG hoped to narrow the applicant pool for GMU 13 Tier II hunts to those willing to conform to the community pattern of use. The BOG noted (Alaska Board of Game 2006:1–2):

> Board members are concerned the hunting patterns [for caribou and moose in GMU 13] no longer meet the Board's intent when these subsistence hunts were originally

27. Alaska Board of Game Meeting Information, Regulatory Year 1997–1998 Meetings, Accessed February 23, 2017, http://www.adfg.alaska.gov/index.cfm?adfg=gameboard.meetinginfo&date=01-01-2007&meeting=all

28. "Super-exclusive" meant that individuals choosing to hunt moose or caribou in the area would be prohibited from hunting these species in any other area of Alaska in the same regulatory year.

29. This section draws primarily from an earlier summary in Fall and Simone (2010:11–12).

> established in regulation. A review of these hunts questions whether the current hunts are consistent with the Board's customary and traditional use findings based on the eight criteria the Joint Boards of Fish and Game established (5 AAC 99.010) for implementing the state subsistence law (AS 16.05.258(a)).
>
> Statistics associated with the Nelchina caribou hunt[30] illustrate some troubling trends. Permits have been slowly shifting away from local Alaskan residents the Board identified as the most dependent on the wildlife resources in the region and towards less subsistence dependent urban residents. … In addition, many of the traditions associated with a subsistence way of life are being sidestepped and avoided, such as the traditional teaching of the art of hunting, fishing, and trapping to younger generations; and the processing, utilization, and other long-term social and cultural relationships to the resources being harvested and to the land that produces those resources.
>
> The Board's long-term goal is to design a system to accommodate subsistence-dependent users in such a manner that permits can be virtually guaranteed from year to year.
>
> The board intends to explore subsistence hunt provisions that reflect and accommodate the customary and traditional use patterns of Nelchina caribou and moose in Game Management Unit 13 while distinguishing those uses from other uses.

As in earlier BOG findings regarding big game populations in GMU 13 (e.g., 1983 and 1992), in 2006 the BOG generally equated traditional subsistence use patterns with local patterns and contrasted them with nonlocal, primarily urban-based patterns that it at times characterized as "recreational." Specifically, the BOG found that a focus on harvesting a range of resources within a hunt area contrasts with "more recreational type of uses arising out of Alaska's more urban areas, where a single, focused effort to harvest only one resource in any given location, and then salvage only what is legally required from that resource, tends to be a predominant characteristic. Also, different hunting areas are explored in different years [in the urban recreational pattern]" (Alaska Board of Game 2006:8).

During this meeting, the BOG wrote a finding (2006-170-BOG)[31] that defined a community-based customary and traditional pattern of use of moose and caribou in GMU 13. This finding was formally adopted on November 12, 2006 at the BOG meeting in Wrangell.

During the October 2006 meeting, the BOG adopted hunt requirements in regulation as well as in the department's discretionary permit authority for GMU 13 Tier II hunts in line with the new findings of a community pattern of use referenced in 2006-170-BOG; these came into effect in the 2007–2008 regulatory year. Tier II permit holders for moose or caribou were prohibited from hunting anywhere else in the state for that species in the same regulatory year. The BOG also instructed the department to include discretionary permit hunt conditions that required salvage of the hide, head, liver, and other organs, and destruction of the trophy value of antlers in order to provide conditions that mirrored the community pattern of use described in the findings. The BOG tabled Proposal 1, to further reexamine C&T and ANS findings for moose and caribou, to the March 2007 meeting. The BOG also established in regulation the Nelchina Community Harvest Area for moose and caribou, which included all of GMU 13 [5 AAC 92.074(d)].[32]

During its March 2007 meeting, the BOG altered the Tier II scoring system by adding 2 questions. One question, which was added to the statewide scoring system for all Tier II hunts, addressed time spent in

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30. These trends were also evident in the data pertaining to the Tier II hunt for moose in GMU 13.
31. Alaska Board of Game, 2006, "Findings for the Alaska Board of Game #2006-170-BOG," Accessed February 3, 2016. http://www.adfg.alaska.gov/static/regulations/regprocess/gameboard/pdfs/findings/06170bog.pdf
32. This area was renamed the "Gulkana, Cantwell, Chistochina, Gakona, Mentasta, Tazlina, Chitina, and Kluti Kaah Community Harvest Area" at the March 2009 meeting of the BOG. The community harvest area was expanded to include, in addition to all of GMU 13, all of GMU 11, and a portion of GMU 12.

the hunt area collecting wild game and fish. The second, added only to the GMU 13 Tier II scoring system, addressed household cash income. Salvage and motorized access requirements were also modified to better conform to the community pattern reflected in 2006-170-BOG. The BOG did not adopt Proposal 83 (tabled Proposal 1 from the October 2006 meeting) to further modify GMU 13 moose and caribou ANS and C&T findings. The BOG also did not adopt Proposal 83 to establish regulations for a community subsistence hunt for moose and caribou in GMU 13. The BOG adopted an amended version of Proposal 84 (RC 187) to modify regulations to allow Tier II permit holders in GMU 13 to transfer (without compensation) their permits to a resident member of the permittee's family, within second-degree kindred.

At a July 2008 emergency teleconference called as a result of a Superior Court ruling in *Ahtna Tene Nené vs. State of Alaska Board of Game et al*., the BOG reviewed the ANS findings for caribou and moose. The board also acted on the court's ruling that invalidated the GMU 13 Tier II income scoring criteria unless the criteria reflected an adjustment for the cost of living. During deliberations BOG members stated they would be receptive to a proposal submitted by the Ahtna Tene Nené Subsistence Committee that would establish a community subsistence harvest permit hunt. The BOG expressed a desire for ADF&G to work with the Ahtna Tene Nené committee on the development of such a proposal for the spring 2009 meeting and noted that the Nelchina Community Harvest Area was already in existence. The board also expressed its intention to review the ANS findings for GMU 13 at the spring 2009 meeting.

Significant changes pertaining to subsistence hunting in GMU 13 occurred at the February/March 2009 meeting of the BOG in Anchorage. The BOG adopted a revised version of Proposal 96, submitted by ADF&G at the request of the board, that modified the ANS for moose in GMU 13 from a single point value of 600 moose to a range of 300–600 moose. The lower bound was based on recommendations from the Copper Basin Fish and Game Advisory Committee (AC). (The ANS for the Nelchina caribou herd was also revised at this meeting.)

The BOG discussed moose (and caribou) ANS during two board committee meetings in the evenings of March 2 and 3, 2009 and during board deliberations on March 5. The ADF&G wildlife biologist for GMU 13 reported why the Copper Basin AC suggested 300 moose for the low end of ANS range.[33] The AC, he explained, did not want a Tier II hunt to be required when the harvestable surplus dropped below 600 moose, because, in the view of the AC, the Tier II permit scoring system would exclude younger families in the Copper Basin. In this view, these families could harvest a moose if 300–600 were available, but if permits were issued through the Tier II process, such families would not get a permit because they would not have enough years of use to score enough points to win a permit.

Regarding setting the lower end of the ANS at 300, the Department of Law offered the following guidance:[34]

> It's often fair for the board to assume that the local harvest figures are at least something close to the bottom—that's the starting point for whatever the ANS number would be—and then decide how much higher than the local harvest it needs to go to satisfy all subsistence users.
>
> Just to help the board with their record a little bit, Mr. Chairman, I guess I'd also point out that there is actually some congruence between that 300 figure and what we've just been talking about. I think there is an RC [Record Copy] in the record, maybe 98 [*sic*; the

33. Exhibit D: State of Alaska, Alaska Department of Fish and Game, Board of Game, Transcript of Proceedings (Excerpt) Southcentral and Southwest Regions meeting of the Board of Game, continued; excerpts of staff presentations, board discussions, and decisions, March 5, 2009: page 10.

34. Exhibit D: State of Alaska, Alaska Department of Fish and Game, Board of Game, Transcript of Proceedings (Excerpt) Southcentral and Southwest Regions meeting of the Board of Game, continued; excerpts of staff presentations, board discussions, and decisions, March 5, 2009: pages 14 and 17.

> actual RC was 89, submitted by the attorney for Ahtna, Inc.][35] that suggests that the community harvest for Ahtna is in the neighborhood of 200 moose for all residents of the villages in Unit 13. And so this follows that model I was just talking about where the board looks at the local harvest and then adds some to account for other harvest, so 300 is bigger than 200, so you're actually doing that here. So it fits with other evidence that's in the record as well.

Similarly, ADF&G staff, reporting on the committee meeting earlier in the week, stated that "During that discussion with Ahtna representatives participating, they felt that a 200 moose allowance for Ahtna residents would be needed, and that would include both those animals taken under federal permit as well as under state permit." However, in RC 89, the attorney representing Ahtna, Inc. clarified that:

> Ahtna estimates that the tribal members enrolled in these 8 Ahtna villages would harvest around 150 moose and 300 caribou from state hunts under the CHP. Ahtna does not have a good estimate for the additional moose and caribou that would be harvested by other non-tribal community residents who may choose to participate in the CHP. Allowing a least an additional 50 moose and 100 caribou seems reasonable…To the degree consistent with conservation the CHP would allow taking bull and cow caribou and the taking of bull moose outside the current spike fork, 50 inch, 4 brow tine limits.

Additionally, the BOG stated 600 moose was well supported in the finding from 1992 (see above) as the upper amount of the ANS range, noting that the local AC had recommended 700 moose but without clear justification.

After revising the ANS for moose and caribou, the board adopted an amended version of Proposal 84 (which had been submitted by the Ahtna Tene Nené Customary and Traditional Use Committee at the request of the BOG), creating a community subsistence hunt (CSH). RC 109 was the substitute language ADF&G developed for Proposal 84 that the board worked from and amended during deliberations to develop the community hunt regulations.

Regarding an allocation of moose for the CSH, a board member referred to 46 moose taken in the Tier II hunt by local residents in 2008[36], adding:

> I would like to see the community harvest level set at 100 moose initially.
>
> I'd also like to make it very clear that I would recommend that this 100 moose is taken in Units 11, 13, a portion of 12, and a portion of 20. And my hopes are that the Ahtna folks would be able to provide a map showing these areas and traditional hunting areas and so forth for this community harvest. And that harvest of up to 100 moose—it'd be any bull—would be available in those areas.[37]

Thus, the opportunity to take up to 100 "any bulls" was intended as allocation for the eight Ahtna villages that the BOG created the community hunt area for in 5 AAC 92.074. A BOG member also referred to "a

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35. Note that, as discussed below, projected harvests by Ahtna Tribal members are not the same as harvests by local residents of the hunt area; Ahtna Tribal members comprise perhaps 30% to 35% of the Copper Basin population.

36. Exhibit D: State of Alaska, Alaska Department of Fish and Game, Board of Game, Transcript of Proceedings (Excerpt) Southcentral and Southwest Regions meeting of the Board of Game, continued; excerpts of staff presentations, board discussions, and decisions, March 5, 2009: page 26.

37. Exhibit D: State of Alaska, Alaska Department of Fish and Game, Board of Game, Transcript of Proceedings (Excerpt) Southcentral and Southwest Regions meeting of the Board of Game, continued; excerpts of staff presentations, board discussions, and decisions, March 5, 2009: page 26

quota of 100 bulls for this community harvest," implying that the board embedded this 100 "any bull" allocation within the revised ANS of 300–600 moose.[38]

In referring to the requirements under 5 AAC 92.072 that must be met to set up a community hunt, the Department of Law noted:[39]

> You've already found that those [eight] villages have a distinctive customary and traditional use pattern,[40] that there are those practices, and we have the geographic description of the hunt area.

The Department of Law also discussed the sections of the proposed CSH regulations and discretionary permit conditions that required that the community pattern of use described in 2006-170-BOG be observed by participants in the hunts:[41]

> This has another purpose as well, which is to ensure that the customary and traditional use pattern is actually protected over time and that any evolution in that pattern that occurs is a planned evolution between the subsistence users and the board and not an unplanned one that eventually turns something that was subsistence into something that's no longer subsistence.

Further, the Department of Law clarified that the intent of these CSHs was to support the community-based pattern, even though participation in the hunts would be open to other groups that had not yet established the pattern.[42]

> This system was not set up to be an exclusive system. It was set up to just provide an alternative means of obtaining subsistence resources for people who desire—and groups, especially, that desire to do it that way, and as such, it's open to any Alaskan community that might want to come to you in the future. Well, that obviously raises the specter of groups forming just for the purpose of doing something like this, and the board probably doesn't—the board wants to meet legitimate needs of legitimate groups that are subsistence using groups, but probably doesn't want to encourage too many new groups to form just for the purpose of exploiting what looks like a—what may look like a wonderful new opportunity to, you know, get ahead of everybody else in line, if people see it that way.

During BOG deliberations on bag limits and seasons for the community hunt, the Department of Law representative reiterated the BOG's intent to provide for the community pattern described in the 2006 finding. He also stated the intent for the "any bull" harvest was to provide for this community pattern of

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38. Exhibit D: State of Alaska, Alaska Department of Fish and Game, Board of Game, Transcript of Proceedings (Excerpt) Southcentral and Southwest Regions meeting of the Board of Game, continued; excerpts of staff presentations, board discussions, and decisions, March 5, 2009: page 68.
39. Exhibit D: State of Alaska, Alaska Department of Fish and Game, Board of Game, Transcript of Proceedings (Excerpt) Southcentral and Southwest Regions meeting of the Board of Game, continued; excerpts of staff presentations, board discussions, and decisions, March 5, 2009: page 30.
40. Based on BOG finding 2006-170-BOG.
41. Exhibit D: State of Alaska, Alaska Department of Fish and Game, Board of Game, Transcript of Proceedings (Excerpt) Southcentral and Southwest Regions meeting of the Board of Game, continued; excerpts of staff presentations, board discussions, and decisions, March 5, 2009: page 33.
42. Exhibit D: State of Alaska, Alaska Department of Fish and Game, Board of Game, Transcript of Proceedings (Excerpt) Southcentral and Southwest Regions meeting of the Board of Game, continued; excerpts of staff presentations, board discussions, and decisions, March 5, 2009: pages 40–41.

subsistence use, up to the allowable number, with additional opportunity provided through the spike fork/50″/four brow tine portion of the moose population.[43]

> So beginning at the bottom of page 1 [of RC 109], you'll see in Unit 11 it's one moose [44] by community harvest permit only; there's a separate season and bag limit, August 10 to September 20 for that hunt. Up to X number of bulls may be taken… And we can do this one of several ways. You can—you could designate separate amounts of any bull harvest that should be occurring in Unit 11 versus Unit 13 versus Unit 12 versus Unit 20, or you can do it as you've done in other cases where you say that a total number in conjunction with the harvests in other areas is the up-to amount. And this is where Member Spraker was talking about a hundred any bulls.
>
> And then there's a—in order for folks to meet their subsistence needs, because the amounts of any bulls that may be available are not probably enough to provide for the entire subsistence need, there's a further opportunity—the remainder would be made up by people being allowed to take a spike-fork 50 four-brow tine…
>
> So what would happen is the department would designate a certain—because it's up to whatever number you set, the department would designate each year the amounts of any bull that could be taken under the community harvest permit and even where those could be taken, depending on how you set it up. And then the remaining harvest by the community subscribers is spike-fork 50 inch four brow tine or three brow tine.

The Department of Law then contrasted the CSH bag limit needed to provide opportunities for the community hunt pattern with that needed for other subsistence uses of moose in GMU 13:[45]

> And I wanted to talk a little bit more about the other subsistence opportunity for [Alaska] residents [refers to RC 109]. It says one bull with spike-fork antlers or 50-inch antlers or antlers with four brow tines on one side. And it's essentially a—we're just keeping kind of the general hunt that we've had there for the last several years. The board long ago determined that that general hunt does provide a reasonable opportunity for your average, ordinary subsistence user, and so by keeping that in place, we're maintaining a reasonable opportunity for subsistence uses.

A board member further clarified the intended allocation and bag limit for the community hunt:[46]

> And again I feel like a good starting point is to let the department have up to 100 bulls, any bull, for the community harvest, and then let the department spread this harvest over these four areas. And the reason I have used 100 is, again, you know, the TM300 [Tier II] harvest was 46, and with the other opportunities to harvest under the federal permit, which is still available, and also with the caribou considerations, both state and federal that's available, you know, I think this is a very good start. And again, again, like you said, if it's not working properly, we can come back in two years and readjust that number.

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43. Exhibit D: State of Alaska, Alaska Department of Fish and Game, Board of Game, Transcript of Proceedings (Excerpt) Southcentral and Southwest Regions meeting of the Board of Game, continued; excerpts of staff presentations, board discussions, and decisions, March 5, 2009: page 57.
44. Transcript reads "you'll see in Unit 11 it's one ruled [sic] by community harvest permit only." Likely correction included here.
45. Exhibit D: State of Alaska, Alaska Department of Fish and Game, Board of Game, Transcript of Proceedings (Excerpt) Southcentral and Southwest Regions meeting of the Board of Game, continued; excerpts of staff presentations, board discussions, and decisions, March 5, 2009: page 59.
46. Exhibit D: State of Alaska, Alaska Department of Fish and Game, Board of Game, Transcript of Proceedings (Excerpt) Southcentral and Southwest Regions meeting of the Board of Game, continued; excerpts of staff presentations, board discussions, and decisions, March 5, 2009: page 62.

To verify the board's intent, the ADF&G area management biologist restated the proposed regulation regarding the any bull harvest opportunity:[47]

> When it comes to the any bull, it's my understanding that the department will determine where those any bulls come from, and that will include setting up a quota between the various units that you've mentioned, but even setting up a harvest quota in Unit 13 itself to ensure that the any bulls are distributed in a manner that won't overharvest certain areas…

In response to a board member's question, the Department of Law further clarified why a "limit" of 100 any bull moose was needed.[48]

> [Board member:] Do we need to come [up] with a number for caribou as we did for moose? We've had a suggestion that 200 to 400 for caribou for the community harvest. Do we need to come up with one number?
>
> [Department of Law:] No. As I understand it, the reason you needed to do that for moose was because there's a—there's only a limited number of any bulls that can be made available, even under that permit, the community harvest permit, so you had to designate an up-to number… I don't think you have to do that for caribou because you're not going to have a—it's going to be any bull for every participant, as I—or any caribou for any participant. Unless you have a biological concern about too many cows or too many bulls, either one being harvested, I don't think you need to do it.

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 Harvest 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.

At the same meeting, Proposal 95, submitted by ADF&G, proposed that new drawing permit hunts for bull moose be established in portions of GMU 13A, GMU 13B, and GMU 13C, because moose populations were increasing in these remote areas and additional moose were available for harvest. The board adopted an amended version of this proposal, thereby establishing drawing hunts for "any bull moose" with up to 1,000 permits in 5 areas, with the intent of issuing up to 200 permits per area.[49]

After the BOG's adoption of the CSH regulations in 2009, Kenneth Manning and the Alaska Fish and Wildlife Conservation Fund (Case No. 3KN-09-00178-CI) challenged these regulations.[50] Although the superior court did not grant a preliminary injunction to prevent the 2009 CSH, its preliminary ruling issued on June 29, 2009 required changes to the regulations to allow any Alaska resident regardless of

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47. Exhibit D: State of Alaska, Alaska Department of Fish and Game, Board of Game, Transcript of Proceedings (Excerpt) Southcentral and Southwest Regions meeting of the Board of Game, continued; excerpts of staff presentations, board discussions, and decisions, March 5, 2009: page 65.
48. Exhibit D: State of Alaska, Alaska Department of Fish and Game, Board of Game, Transcript of Proceedings (Excerpt) Southcentral and Southwest Regions meeting of the Board of Game, continued; excerpts of staff presentations, board discussions, and decisions, March 5, 2009: pages 73-74
49. Exhibit D: State of Alaska, Alaska Department of Fish and Game, Board of Game, Transcript of Proceedings (Excerpt) Southcentral and Southwest Regions meeting of the Board of Game, continued; excerpts of staff presentations, board discussions, and decisions, March 5, 2009: pages 67-68
50. *Kenneth Manning and the Alaska Fish and Wildlife Conservation Fund vs. State of Alaska, Department of Fish and Game and Ahtna Tene Nené,* 3KN-09-00178 CI.

residency to register for the hunt. The court also stipulated that "at least one sharing opportunity for non-Ahtna residents must be provided."[51]

In July 2010, the Alaska Superior Court issued a decision on summary judgment in the Manning case and ruled the CSH regulations invalid because, among other things, they were "fundamentally…local residency-based."[52] In an emergency meeting by teleconference on July 28, the BOG eliminated the CSH for the 2010/11 regulatory year and adopted emergency regulations establishing an August 15–August 25 general resident harvest ticket season for moose in GMU 13 with a bag limit of one bull moose with spike-fork antlers or 50 inch antlers or antlers with 3 or more brow tines on one side. A September 1–September 20 general harvest ticket season with a bag limit of one bull moose with spike-fork antlers or 50 inch antlers or antlers with 4 or more brow tines on one side also took place in 2010, as did drawing hunts for one bull in portions of GMU 13 (Appendix A).

At a special meeting in October 2010 and its regularly scheduled March 2011 meeting, the BOG created new CSH regulations and discretionary permit conditions to comply with the court's ruling. The new regulations allowed participation in the CSHs by any group of 25 people or more. Also at this meeting, on March 7, 2011, the board adopted finding 2011-184-BOG that defined a second, more "individual" pattern of subsistence uses of moose and caribou in the area. The BOG also decreased the number of bulls that do not meet antler restrictions from 100 to 70 for the CHS moose hunt. In March 2013, this allocation was increased back to 100, with a limit of one "any bull" per every 3 households in a group (see Appendix A).

Following these regulatory changes for the CSH, the number of participants in the CSH began to increase substantially (Table 5). 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%) (Table 6, Figure 12).

Additional litigation challenging the CHS followed the BOGs regulatory actions in 2010 and 2011. On August 5, 2011, the superior court granted summary judgement in *Alaska Fish and Wildlife Conservation Fund [AFWCF] v. State of Alaska, Department of Fish and Game and Ahtna Tene Nené*, and upheld the BOG's 2006 and 2011 findings regarding two subsistence patterns of use of GMU 13 moose and caribou, as well as the CSH regulations adopted in 2010 and 2011.[53]

On March 27, 2015, the Alaska Supreme Court upheld the superior court's ruling in *AFWCF v State*. In finding that the BOG's longer season and "any bull" bag limit for the community hunt was lawful and reasonable, the court noted that these regulations provided opportunities for the community hunting pattern, including of use of local areas and efficiency, as described in the BOG's findings:[54]

> Community harvest hunters are permitted to hunt one bull moose of any size for each person on the community group's list, while individual hunters are limited to bull moose with spike-fork antlers, 50-inch antlers, or antlers with four or more brown tines on one size. Community harvest hunters also have a long season: August 10 to September 20, as

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51. *Kenneth Manning and the Alaska Fish and Wildlife Conservation Fund vs. State of Alaska, Department of Fish and Game and Ahtna Tene Nené*, 3KN-09-00178 CI, Decision on Motion for Preliminary Injunction, June 29, 2009.
52. *Kenneth Manning and the Alaska Fish and Wildlife Conservation Fund vs. State of Alaska, Department of Fish and Game and Ahtna Tene Nené, Department of Fish and Game and Ahtna Tene Nené*, 3KN-09-00178 CI, Decision on Summary Judgement, July 9, 2010: page 27
53. *Alaska Fish and Wildlife Conservation Fund v. State of Alaska and Ahtna Tene Nené*, 4FA-11-00973 CI.
54. *Alaska Fish and Wildlife Conservation Fund v. State of Alaska and Ahtna Tene Nené*, 4FA-11-00973 CI Alaska Supreme Court, opinion affirming superior court's grant of summary judgement, March 27, 2015.

> opposed to September 1 to September 20 for individuals. The Fund argues that this provides the community harvest hunters with "an exclusive hunting opportunity" and is therefore impermissible.
>
> We conclude, however, that the Board made findings sufficient to support some season and size differences between community and individual hunts. Simply put, the community hunts are more likely to occur close to home, where it is harder to find moose; a longer season and fewer size restrictions help counter this difficulty. During the 2011 Board of Game proceeding, a supporter of community hunts testified that the "50-inch antlered moose is…pretty scarce around where I hunt and it's usually pretty warm. They're usually way up in the mountains. Having a restriction for 50-inch antlers…makes [it] a hardship for…getting a moose… I took my daughter there last year, and…we saw a lot of bull moose, but…they aren't…50-inch moose. All small antlers." At an earlier hearing in 2010, there was testimony that in early fall "all the moose are high during that time and the three brow tine and four brow tines are up high… [Y]ou might find a spike fork near a road, but…people didn't really get any moose." The community use pattern may require a long hunting season because community harvest hunters traditionally "keep hunting as close to home as reasonably possible," "travel […] shorter distances to hunt," and "still prefer to walk in to hunting areas and maintain permanent camps." If the community harvest permit holders hunt in the same areas each year and do not travel in search of better hunting opportunities, it is reasonable to conclude that they will need a long season in order to find legal moose. In addition, the Board found in 2006 that community harvest hunters hand "down the hunting and fishing knowledge, values, and skills through family oriented experiences," which require "relatively long summer and fall camping trips." Although the Board heard evidence that the individual hunt would also benefit from a longer season, we cannot say that the Board's adoption of a regulation setting a longer season and fewer size restrictions for the community hunt is arbitrary or unreasonable.

During its work session in Anchorage in October 2013, the BOG created the "Committee on Copper Basin Area Subsistence Hunting Regulations," consisting of 3 BOG members, several AC members, and representatives of groups with an interest in Copper Basin hunts. The group was charged with developing regulatory proposals for consideration during the board's 2014/15 regulatory cycle. The committee met three times (on December 2, 2013, March 3, 2014, and April 18, 2014). After reviewing background information, the committee identified 3 issues:

1. Impacts of increased participation in the community subsistence hunt, affecting access to resources by other participants
2. Harvest of "any bull" moose in high use subareas reduces harvest opportunity in other areas
3. Reduced subsistence harvest opportunity for caribou

The committee then discussed options, and forwarded 19 proposals for BOG deliberation during its February 2015 meeting in Wasilla.[55]

To address problems with rapid harvest of the "any bull" quota for the CSH, on March 18, 2015 the BOG recommended that the department

> Establish individual quotas for each sub-area of the Copper Basin community subsistence hunt for the moose that do not meet general season antler requirement in Units 11 and 13

55. Summaries of each of the committee's three meetings, as well as background information discussed and text of the 19 proposals can be found at the Alaska Board of Game website at http://www.adfg.alaska.gov/index.cfm?adfg=gameboard.meetinginfo

> and attempt to achieve the quota for each subarea regardless of whether or not the total harvest exceeds the total allocations for the CSH program. (Board Finding 2015-209-BOG)

This action demonstrated the board's view of the centrality of the "any bull" option for providing for reasonable opportunities for participants in the community subsistence hunt, consistent with the pattern of use and management objectives.

On October 23, 2016, the BOG held a teleconference meeting to consider changes to the CSH regulations for GMUs 11, 12, and 13. The special meeting was called by the commissioner of ADF&G in response to a request for a meeting from Ahtna Tene Nené, dated August 30, 2016.[56] Ahtna Tene Nené requested changes to the CSH regulations to address increasing participation in the hunts and the rapid harvest of the allocation of 100 "any bulls," primarily by nonlocal hunt participants. Based on Ahtna Tene Nené's request, ADF&G drafted Proposal 154 for the BOG's consideration. The BOG did not adopt regulatory changes at this meeting. Instead, it requested that a call for proposals be issued to address issues with the GMU 13 CSH at a special meeting to be held in March 2017.

56. During its March 2016 meeting in Fairbanks, the BOG received a request from Ahtna Tene Nené (RC 121) to hold a special meeting to consider creating a Tier II hunt for taking the 100 "any bull moose" in GMU 13 that are included in the opportunity for all Tier I CSH participants, to begin August 20, 2016. At the time, the BOG did not schedule a special meeting in response to this request.

3. RECENT HOUSEHOLD SURVEY AND CENSUS FINDINGS

The Division of Subsistence, with research partners, conducted systematic household surveys in all Copper Basin (GMU 13 and 11) communities (except Cantwell, Eureka Roadhouse, Glacier View, and Chickaloon) from 2009–2013; this time period will be referred to here as "the most study recent year." The results of these surveys can be compared with findings for harvests and uses of moose for 1982 and 1987 (Table 3). Estimated moose harvests dropped from 225 in 1987 (when the local subsistence registration hunt was in place) to 183 in the most recent study years. As expressed in usable pounds, the average household moose harvest dropped 17%, from 83.9 lb in 1987 to 69.7 lb in recent years. Average per capita use dropped 36%, from 60.3 lb per person in 1987 to 38.3 lb per person in the most recent study years (Figure 6). While the majority of households hunted moose during both study periods—56% in 1987 and 51% in the recent study years—success rates dropped from 33% in 1987 to 28% in the recent study years. Interestingly, 71% of the Copper Basin's households used moose in the recent study years, up notably from 49% in 1987. This increase resulted from more sharing: 58% of the Copper Basin's households received gifts of moose in the recent study years, compared to 33% in 1987. Thus, while fewer moose were available than in earlier study years, more households used moose due to sharing in the 2009–2013 study period. The reasons for the increase in sharing are uncertain, but the facilitation of community-based hunting through the CSH program may have been a factor.

Despite the substantial drop in moose (and caribou) harvests, the recent research documented the continuing importance of subsistence harvests of fish and wildlife to Copper Basin communities, with a Copper Basin region harvest of 159.8 lb per person of wild foods (Holen et al. 2015:558). For comparison, harvests for home use in nonsubsistence areas totaled an estimated 19 lb per person in 2014, and all areas outside the nonsubsistence areas averaged 275 lb per capita (Fall 2016a). Copper Basin communities' location on the road system and proximity to Alaska's population centers results in greater competition, shorter seasons, and reduced bag limits, and likely accounts, at least in part, for lower harvests than those found for more remote rural Alaska communities (Magdanz et al. 2016; Wolfe and Walker 1987). The Division research findings estimated a cash income from all sources for Copper Basin communities combined of $20,691 per person and $52,863 per household (Holen et al. 2015:558). In comparison, state averages, according to the American Community Survey for 2011 - 2015 were $33,413 per person annually: values were $36,920 for Anchorage, $29,913 for the Matanuska-Susitna Borough, and $33,244 for the Fairbanks North Star Borough.[57]

57. ADLWD (Alaska Department of Labor and Workforce Development) Research and Analysis Section. "American Community Survey." Accessed February 28, 2017. http://live.laborstats.alaska.gov/cen/acsds.cfm

4. HUNTING EFFORT AND HARVESTS

NUMBER OF HUNTERS, NUMBER OF MOOSE HARVESTED, AND SUCCESS RATES

The number of moose harvesters, number of moose harvested, and the success of hunters in GMU 13 depend on a variety of factors, including (but not limited to) moose population status, regulations, and Nelchina caribou herd management. Table 7 reports number of moose hunters, moose harvests, and hunter success rates for local and other Alaska hunters for the period 1963 through 2016. Table 8 reports moose harvests by hunt (state harvest ticket, state Tier II permit, state community hunt, state drawing hunt, federal registration permit) and area of Alaska residence for the period 1990 through 2016. Figure 13 depicts the number of Alaska resident moose hunters and the moose harvests by year from 1967 through 2015.[58] Figure 14 depicts hunter success rates for Alaska resident hunters from 1967 through 2015.[59]

For the 17-year period from 1992–2008 (the period for which the first ANS of 600 moose was in effect), the number of Alaska resident moose hunters in GMU 13 averaged 4,429 annually (range of 3,132 to 5,834) (Table 9). In comparison, the annual average number of moose hunters for the 12-year period from 1980 through 1991 (the period upon which the ANS of 600 moose was based) was 3,317 (range of 2,615 to 4,278). For the 7-year period 2009–2015 since the current ANS of 300–600 moose has been in place, the number of Alaska resident moose hunters in GMU 13 averaged 5,211 annually (range of 4,385 to 5,684).

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%) (Table 9).

Figure 15 depicts the number of Copper Basin (GMUs 11 and 13)—or "local resident"—moose hunters and the number of successful local resident moose hunters from 1969 through 2015 (see also Table 7). The number of local resident moose hunters rose during the 1970s and 1980s, peaking in the mid-1980s when subsistence registration permits were available to residents of GMU 13 communities. From 1992 through 2015, the number of local resident moose hunters was relatively steady, with an annual average of 887 for the period 1992–2008 and 920 for the period 2009–2015. Harvests of moose by local residents also peaked at over 200 annually in the mid-1980s, and averaged 124 moose from 1992 through 2008 (range 97 to 152) and 135 from 2009- 2015 (range 94 to 183) (Table 9).

As shown in Figure 16, nonlocal Alaska resident moose hunters comprised about 75% or more of the moose hunters in GMU 13 from 1969 to 2015 and have taken about 80% or more of the annual harvest.

Figure 17 (see also Table 7) shows hunting success rates for GMU 13 moose for local residents, other Alaska residents, and all Alaska resident hunters from 1967 through 2015. As reported in Table 9, the number of local residents who hunted moose in GMU 13 rose from an annual average of 696 for the 12-year period from 1980 through 1991 (the years upon which the current ANS finding is based) to 887 for the period 1992 through 2008. Conversely, the number of successful hunters dropped from an annual average of 156 for 1980–1991 to 124 from 1992–2008. The annual average moose hunting success rate for local hunters was 22.3% from 1980–1991 and 13.9% from 1992 to 2008. For the period 2009 – 2015, local hunters' success rate was 14.6% with an average annual harvest of 135 moose by 920 hunters.

58. Alaska resident hunters can be separated from nonresident hunters in the database starting in 1967.

59. Because data for 2016 are incomplete, Figures 13 through 17 show trends through 2015 only.

Generally, hunting success rates for nonlocal Alaska hunters were higher than those of local hunters, especially since the early 1990s (Figure 17, Table 7, Table 9).

TRANSPORTATION METHODS

Table 10 reports the annual average number of moose hunters in GMU 13 by area of residence and primary method of transport for the period 2009–2016. Figure 18 illustrates the primary method of transport by percentage of hunters by area of residence, based upon those hunters for whom a transport method is known. As shown in Figure 18, for local resident moose hunters in GMU 13 from 2009–2016, highway vehicle or foot was the primary method of transport for 48%, 3- or 4-wheeler for 32%, off-road vehicle for 9%, boat for 7%, aircraft for 4%, and horse for 1%. The primary method of transport used by nonlocal resident hunters was 3- or 4-wheeler (52%), followed by highway vehicle or foot (21%), off road vehicle (14%), boat (7%), aircraft (5%), and horse (1%). Just over half (52%) of local resident moose hunts in GMU 13 used motorized forms of transportation,[60] while 48% used non-motorized forms. In contrast, 79% of nonlocal resident moose hunters used motorized forms of transportation, and only 21% used non-motorized forms (Table 10).

Table 10 also reports the annual average number of successful moose hunters in GMU 13 by area of residence and primary method of transport for the period 2009–2016. Figure 19 illustrates the primary method of transport by percentage of successful hunters by area of residence, again for those for whom the method is known. As shown in Figure 19, for successful local resident moose hunters in GMU 13 from 2009–2016, 3- or 4-wheeler was the primary method of transport for 40%, followed by highway vehicle for 36%, off-road vehicle for 14%, aircraft for 6%, boat for 3%, and horse for 1%. The primary method of transport used by successful nonlocal resident hunters was 3- or 4-wheeler (56%), followed by off-road vehicle (20%), highway vehicle or foot (10%), aircraft (8%), boat (5%), and horse (1%). Of all local residents who harvested a moose in GMU 13 from 2009–2016, 63% used motorized transportation, while 37% used non-motorized. A much higher percentage (89%) of nonlocal resident successful hunters used motorized transportation, while only 11% used non-motorized forms.

60. Here, "non-motorized transport" refers to the categories of "highway vehicle (foot)" and "horse" in Table 10, Figure 18, and Figure 19.

5. DISCUSSION

Communities and sociocultural groups that have depended upon subsistence harvests of wild resources, including the Ahtna of the Copper River Basin and many others in Alaska, have historically observed a pattern of hunting that emphasizes efficiency and opportunistic harvest of animals whenever viable situations present themselves (Frison 2004; Lee and DeVore 1968; Simeone 2006). As noted by Wolfe (2004:52) in a summary of 25 years of ADF&G research on subsistence:

> Subsistence traditions are localized in Alaska by factors of ecology, community, culture, and economy. What is generally called "subsistence" in law is in fact, on the ground, a myriad of distinct, localized traditions established by identifiable communities of users.

Within these traditions, restrictions on hunting, such as those related to seasons, bag limits, and antler size, are often viewed as arbitrary and inefficient (Nadasdy 2003). Thus, considerations of "reasonable opportunity" should include the different ecological, cultural, economic, and technological conditions of diverse social groups and their histories of dependence on subsistence resources.

As noted in previous ADF&G submissions to the BOG (e.g. ADF&G 1992:6–8; Fall and Simeone 2006:1–10), based on information from the ethnohistorical literature and from studies conducted by the Division of Subsistence (Kelso 1982:13, 15–16; de Laguna and McClellan 1981; Lonner 1980a:12–16, b:6–8; McMillan and Cuccarese 1988; Reckord 1983; Simeone 2006; Stratton and Georgette 1984), there are several factors that inform an evaluation as to whether or not regulations are providing reasonable opportunities for subsistence harvests and supporting customary and traditional patterns of use. Such evaluations may focus on the harvest and use patterns of Alaskans in general, or on those of the people living within the communities and areas that have established the customary and traditional use patterns (Wolfe 2004:52-55). These factors include flexibility and timing of seasons, level of competition, and bag limit requirements.

As described in previous C&T worksheets presented to the BOG (e.g. ADF&G 1992:1–4), traditional seasons for taking moose in the Copper River Basin (fall and winter/spring) were linked to storage and food requirements. As moose or other supplies ran out in winter, more moose were taken to fill family needs. Seasons were tied to accessibility, with moose being accessible in fall from upland hunting camps or along river corridors.

Season length is related to providing flexibility for hunters, given certain variables from year to year, such as weather patterns, the locations of game populations, personal health of hunters and processors, integration with cash-earning jobs, other subsistence activities, and sharing. The open regulatory season is the "window of opportunity" within which hunters can schedule activities. Simply put, the longer the season, the more flexibility and opportunity there is to accommodate traditional hunting practices. Traditional seasons and past season lengths are appropriate guides for assessing reasonable opportunity.

As discussed above, competition has become an important factor for moose hunting success in GMU 13. Local subsistence hunters have reported that it is difficult to obtain moose when there are thousands of hunters participating during the general harvest ticket or subsistence permit seasons (see below). Moose become difficult to find along the road system because the available animals are taken quickly or displaced. One strategy for subsistence hunters during the 1970s and mid-1980s (before separate subsistence seasons were established) was a get a moose early in the general season, or after 1987, in the subsistence season before the general hunting season started.

Bag limits may place restrictions on opportunities to meet traditional subsistence uses and needs. For example, throughout rural Alaska, skilled and well-equipped hunters may take several moose or caribou or other big game for their own use and for sharing with other households (Wolfe et al. 2010). For GMU 13, there is evidence that bag limits above one animal exceed the amount necessary for meeting some

subsistence uses; a number of local user groups have advocated for a more conservative, one bull per household limit. However, in establishing the CSH regulations in 2009, the BOG recognized the well-established pattern of hunters providing moose for multiple households, and therefore authorized designated hunters within permitted communities. However, regulations that place antler size restrictions on mature bulls (e.g. bulls with 50 inch or greater antlers) may reduce the number of available animals for harvest, thereby increasing the time and effort needed to locate a harvestable animal and decreasing the opportunity to take an animal within the open season, given a high level of competition with hunters.

COMMENTS ON HUNTING ISSUES FROM HOUSEHOLD SURVEYS AND KEY RESPONDENT INTERVIEWS

Comments provided by Copper Basin residents during recent research conducted by the Division of Subsistence provide an important perspective on hunting opportunities in GMU 13. These comments reflect notable frustration with what respondents described as intense hunting pressure by nonlocal residents. These comments point to a perception by local residents that nonlocal hunting pressure has created negative effects on local moose harvest opportunities. Many Copper Basin residents who hunt along the roads, or who hike in from the road to hunt and pack out their meat on foot, report that they cannot compete with nonlocal hunters, more of whom utilize expensive vehicles and equipment to travel farther and more quickly into the backcountry, and for an extended duration. Also, as evidenced in the interviews conducted with Copper Basin residents, many local hunters believe that urban hunters are taking advantage of hunting regulations and outcompeting local residents for moose and caribou harvests (Holen et al. 2015:86, 142, 202, 258, 319, 377, 427, 476, 539; Kukkonen and Zimpelman 2012:67; La Vine et al. 2013:170; La Vine and Zimpelman 2014:73, 139, 213, 272). The following is a set of comments on this topic collected in recent interviews that are representative of the views of Copper Basin residents:

> People on ATVs are pushing the game animals further and further back from the road (Holen et al. 2015:258);
>
> ATV use is out of control in the Denali Highway area. There is just too much motorized access. Local subsistence hunters cannot compete with those people that come into this area with lots of equipment like motorhomes and 4-wheelers or 6-wheelers (Holen et al. 2015:258);
>
> Either we need to restrict urban hunters or only allow them to come up every two or three years…It's too damn accessible. They come up here with a $100,000 motor home and six 4-wheelers (Holen et al. 2015:258);
>
> Hundreds if not thousands of hunters come to Unit 13 for the CSH. They come in their $100,000 motorhomes and they bring multiple $10,000 all-terrain vehicles. They spend more per ounce of meat harvested than they spend all year at the grocery store. That is not subsistence. They're competing with the people that actually need the meat and it's wrong (Holen et al. 2015:539);
>
> There are too many people that come from too far away, just because they can ride a 4-wheeler. I don't think 90% of them need the meat in the first place. They just want to kill something (Holen et al. 2015:258);
>
> Most of the meat that comes out of this area [GMU 13] leaves this area. There are lots of caribou and moose killed in this area, but it's not eaten in this area. It is taken somewhere else (Holen et al. 2015:258).

TRANSPORTATION TECHNOLOGY, TECHNO-ECONOMIC DIFFERENTIATION, AND COMPETITION

The situation described in interviews with Copper Basin residents developed in the 1970s, when hunters began using ATVs in the Copper Basin. As hunting pressure increased, the BOG adopted shorter seasons and antler-size requirements for moose hunting in GMU 13, reducing local hunters' opportunities to harvest moose (ADF&G 1987, 1992; Reckord 1983; Simeone 2006). In the early 1980s, Stratton and Georgette (1984:25) noted:

> By the late 1970s mounting hunting pressure in GMU 13 on moose, a highly sought after species, necessitated progressively more restrictive regulations to protect moose populations. Even with a single 20 day season and a required 36 inch antler spread or three brow tines, there were 3,097 moose hunters in GMUs 11 and 13 during the 1982–83 season. Of these, 416 (13 percent) were residents of GMUs 11 and 13.

In 1983, Reckord (1983:66; see also ADF&G 1987) reported that road hunting and walking were the primary moose and caribou hunting strategies used by Ahtna hunters and that, because local hunters could not afford the "increasingly mechanized modes of transportation used off the roads in the region," use of ATVs by Ahtna hunters was very rare. Due to the growing competition from outside hunters occurring at the time, transportation became a primary factor for hunting success for Ahtna and other local resident hunters (ADF&G 1987; Reckord 1983:103; Stratton and Georgette 1984). 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 that road-hunting had become less reliable (Reckord 1983). Faced with this new situation, Reckord (1983:64) reported that Ahtna hunters were beginning to focus their efforts on harvesting moose early in the season before other hunters could get them.

> About a month before the season opens, people start watching for moose. Those who sight a moose during the summer try to keep track of its movements so that on the first day of the season they can locate the animal and take it. There is some emphasis on getting an animal early in the season before many of the more accessible ones have been taken.

Pelto (1973:168–169) labeled the phenomenon in which specific groups of people acquire the means to utilize superior technology as "techno-economic differentiation," a situation where "people who cannot afford full technological inventories constitute a collection of 'have nots'." The doubling of Alaska's urban population since 1980, in addition to higher cash incomes in urban communities[61] have likely increased techno-economic differentiation among groups of hunters using parts of the Copper Basin accessible from the road system. As a result, many rural hunters report they cannot keep up with better equipped urban hunters who travel to rural areas to hunt (ADF&G 1987; Holen et al. 2015; Simeone 2006). The data support these claims. As referenced above, harvest permit data show that while only 21% of nonlocal moose hunters during 2009–2016 primarily employed a road-hunting or foot-hunting strategy for moose hunting, 48% of local Copper Basin moose hunters attempted to harvest moose primarily by either road-hunting or foot-hunting (Figure 18). The contrast was even greater for successful moose hunters: only 11% of successful nonlocal resident moose used highway vehicles and foot access exclusively, while 37% of successful local residents did so (Figure 19).

The impacts of techno-economic differentiation are more pronounced among residents of rural Alaska communities located along the road systems than for residents of non-road system rural communities. In an analysis of subsistence harvest data from over 18,000 Alaska households in 179 communities surveyed from 1983–2013, Magdanz et al (2016) reported that mean harvests per capita in Alaska communities on

61. ADLWD (Alaska Department of Labor and Workforce Development) Research and Analysis Section. "Census and Geographic Information." Accessed February 23, 2017. http://live.laborstats.alaska.gov/cen/dparea.cfm.

the road system are 59% less than mean harvests per capita in communities off the road system. In Alaska Native majority communities on the road system, per capita harvests were 23% lower than per capita harvests in non-road-accessible Alaska Native majority communities. Meanwhile, continuing interest in hunting and fishing among Alaska's growing urban population led to a 27% increase in wild food harvests by urban residents over a twelve-year period. Simultaneously, harvests by rural residents declined by 17% (1990–2012) (Fall 2016b:58).

These studies put the negative impacts of competition in context, and inform much of the above discussion on regulating subsistence hunting in the Copper Basin and the CSH. Since 2011, hunters from urban Alaska have been drawn to the CSH by the "any bull" harvest opportunity, effectively quadrupling CHS participation by 2016 (Table 5). And as nonlocal CSH participation rates increased, so too did their success rates in harvesting bulls that did not conform to the SF/50/4BT bag limit in the general hunt; conversely, success rates for local, rural hunters for taking "any bull" moose simultaneously declined (Table 6). Increased participation and hunting effort have resulted in increasingly rapid achievement of the "any bull" moose quotas, with most of the any bull harvests going to urban hunters and not to GMU 13 residents (Figure 12).

MOOSE SELECTIVITY AND REASONABLE OPPORTUNITY FOR SUBSISTENCE

Maintaining efficient moose harvest activities is a consistent theme in interviews with Copper Basin hunters (Holen et al. 2015:142), and these hunters view the opportunity to harvest "any bull" moose as critical to meeting community subsistence needs in an efficient manner, consistent with the BOG's C&T findings regarding moose in GMU 13. The "any bull" opportunity maximizes their chance for success, since antler-size restrictions reduce the number of animals available for harvest and generally increase the time and effort required for successful harvest (ADF&G 1983, 1992). To support subsistence hunting opportunities, state regulations have maintained an "any bull" harvest opportunity in GMU 13 in most years since 1983 (Figure 5; Appendix A). With two exceptions (TM059 in GMU 1D and, when appropriate based on current harvestable surplus, TM565/567/569 in GMU 16B), non-antler restricted "any bull" opportunities are standard regulatory components of all existing state subsistence moose hunts.

When hunting under the general season SF/50/4BT (GMU 13) or 3BT (GMU 11) regulations, Copper Basin hunters consistently report difficulty in locating antler-legal moose, and report that due to hunting competition with outsiders, there is significantly less opportunity to harvest antler legal moose in the general hunt (Holen et al. 2015:319). Thus hunters take advantage of legal opportunities to harvest "any bull" moose. Some Copper Basin moose hunters prefer the current federal "any bull" opportunity over the CSH opportunity available on state lands (Holen et al. 2015:319). This is because, compared to the CSH opportunity, hunters can participate in the federal opportunity without needing to observe what they see as overtly complex application and reporting requirements. However, Copper Basin hunters also perceive that, due to a lack of access and a more limited scope of geography, the chance for successful harvest in the federal "any bull" opportunity is more limited than are "any bull" opportunities on state-managed lands (Holen et al. 2015). Overall, Copper Basin residents believe that, concurrent with increasing competition with nonlocal hunters for available moose, their opportunity to harvest moose for subsistence has consistently declined over time (Holen et al. 2015; Kukkonen and Zimpelman 2012; La Vine et al. 2013; La Vine and Zimpelman 2014).

6. CONCLUSIONS

The fish and wildlife populations of the Copper River Basin (now GMUs 13 and 11) have sustained many Alaska communities for millennia. Ahtna communities adapted to local ecological conditions to develop a patterned seasonal round of subsistence activities based on the efficient, sustainable use of a range of resources. Caribou and moose, along with salmon, were central components of this way of life. Flexibility was essential as people adapted to annual variations in resource availability. Newcomers to the Copper Basin area adopted and modified these patterns of use.

During the 20th century, growing communities along Alaska's road corridors also began harvesting the fish and wildlife resources of the Copper Basin. This expanding harvest pressure resulted in challenges to management of moose and other wildlife resources. During the 1970s and early 1980s, consequently, regulations established shorter seasons and bag limits linked to antler size. These regulations placed limitations on subsistence hunting, and competition between local and nonlocal hunters continued to grow.

The State of Alaska adopted its first subsistence statute in 1978. In 1980, ANILCA established a subsistence priority in federal law. To provide for subsistence uses in the Copper Basin, the BOG utilized several regulatory tools during the 1980s, including a liberalized bag limit of one bull moose without antler restrictions, longer seasons, and a local, rural preference. However, when the Alaska Supreme Court's *McDowell* decision in 1989 opened subsistence hunting under state law to all Alaska residents, significant challenges arose for identifying subsistence uses and needs of Copper Basin moose and other wildlife and for providing reasonable opportunities for subsistence hunting. Thousands of hunters from Alaska's urban areas were now eligible to participate in subsistence moose hunting in GMU 13.

In response, the BOG adopted a finding that 600 moose were necessary to provide for subsistence uses in GMU 13, based on an estimate of how many Alaskans were likely to hunt in the unit. After several years of changing regulations complicated by litigation, by 1995 the BOG had established two hunts: a general hunt in September with a bag limit of SF/50/3BT (later 4 BT) and a subsistence Tier II permit hunt opening in August with a bag limit of one bull moose per household. In combination, these hunts were intended to provide a reasonable opportunity for Alaska residents to harvest moose for subsistence uses. In addition, the FSB created subsistence regulations for local rural residents, open on federal public lands only, with an open season in August and September and a one bull bag limit.

The state's Tier II permit process became the target of growing criticism in the late 1990s and early 2000s, linked to allegations of false applications and unfair allocation of the available permits. These criticisms were especially focused on the caribou and moose Tier II hunts in GMU 13. As a result, the BOG invested substantial time considering modifications to the Tier II process, as well as developing alternatives. In 2006, the BOG defined a customary and traditional community pattern of use of moose and caribou in the Copper River Basin, which was established by local Ahtna communities and adopted by some other Alaska communities over time, contrasting it with a more individual pattern of use, which was later formally defined in 2011. Additionally, the Alaska Department of Law advised the BOG in 2006 that it could adopt hunt conditions that required participants to follow the C&T patterns of use, such as hunting big game exclusively within the local hunt area and salvaging of most meat and organs. In short, the BOG was advised that not all hunting by Alaskans is subsistence hunting, and hunt conditions were appropriate to help determine how many Alaskans were engaged in subsistence hunting.

Applying these principles and the revised C&T findings, the BOG in 2009 made substantial changes to the regulations governing subsistence hunting of moose and caribou in the Copper River Basin. To replace the existing Tier II hunts, the BOG created a community subsistence permit hunt for GMU 13, GMU 11, and a portion of GMU 12. The community permit allowed members of the community to designate hunters, with a moose season in August and September. The opportunity to take "any bull

moose," in these GMUs, formerly allocated to Tier II permit holders, was limited to the community subsistence hunt, with a 100 "any bull" limit. The regulations adopted in 2009 limited enrollment in the community hunts to members of the eight Ahtna villages that had developed the C&T community pattern of use. However, a court ruled that the regulation illegally excluded hunters based on place of residence. Therefore, when the community hunts resumed in 2011, any group of 25 or more Alaskans could apply for a community hunt permit. By regulation, permit holders were required to make efforts to follow the community C&T pattern of use defined in 2006.

Since 2011, the number of participants in the community subsistence hunts in the Copper Basin has grown rapidly, due especially to the opportunity to take "any bull" moose and the August season opening. The vast majority of participants in the community subsistence hunts are now residents of nonlocal areas, such as Anchorage, the Matanuska-Susitna Valley, and Fairbanks. Nonlocal residents now also harvest most of the allocation of "any bull" moose. Consequently, the BOG has received comments that allege overcrowding and increased competition among hunters in GMU 13 as a result of the CSH. Local residents, especially, have noted decreased success in moose hunting, alleging that the purposes of the CSH, to support local patterns of use, are not being met. Local residents also observe that they are disadvantaged in competing with nonlocal hunters due to the latter's use of expensive transportation technology. A range of modifications to the subsistence hunting regulations continues to be offered, including eliminating the CSHs entirely, reducing the attractiveness of the CSH by shortening the season or eliminating the opportunity to harvest "any bull,' returning to a Tier II hunt for "any bull," or allocating the "any bull" opportunity within the CSH through the Tier II process.

In summary, this report has provided details about the series of proposals, deliberations, regulatory actions, and lawsuits that have shaped the BOG's efforts to provide for subsistence uses of moose in the Copper River Basin. Key elements of these efforts have included identifying C&T patterns of use (including a local, community-based pattern of use), allowing the harvest of bull moose without antler restrictions, a season spanning several weeks in August and September, and establishing hunt conditions that reflect the C&T pattern of use (such as hunting focused in the local area and thorough salvage of the harvested animals). The board, the public, and resource managers have developed alternatives and taken actions after giving consideration to many factors, including competition, accessibility, hunt administration, eligibility, and traditionally-observed patterns.

A key theme over the several decades of efforts to provide for opportunities for subsistence uses of moose in the Copper River Basin has been to recognize the local patterns of use while acknowledging, since 1989, that all Alaska residents must have opportunity to participate in moose hunting in the area. Regulatory actions reflect the recognition of growing harvest demand from Alaska's urban centers. The BOG's actions also reflect the goal of providing flexibility and efficiency for subsistence uses, through adequate seasons (such as August openings) and appropriate bag limits (such as the taking of a bull moose without antler restrictions).

In conclusion, as further refinements to the regulations that govern subsistence hunting opportunities in the Copper River basin are considered, it is instructive to keep in mind that

> Alaska is distinguished by its diversity of small, rural communities that are economically and culturally dependent on fish and game. Multiple ways of living have developed with these communities of users that include the traditional harvest and use of wild resources, adapted to local ecological and economic circumstances. A myriad of local subsistence traditions have developed within this diversity of peoples, ecologies, and economies. The wisdom of the State and federal subsistence statues was to recognize the important roles of fishing and hunting within Alaska's communities. The ongoing challenge of the subsistence laws is how to apply them in ways that allow for localized traditions to be sustainable. In this way, diversity at the local level can continue to enrich the lives of all Alaskans (Wolfe 2004:55).

As discussed in this report, the Copper Basin is a prime example of an area with long established local traditions of subsistence uses that are challenged by the area's accessibility to population centers. Knowledge of these use patterns and of past efforts to craft regulations that support them are key to meeting the goals of Alaska's subsistence law and sustainable resource management.

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Table 1.–Population of areas connected by road to GMU 13, 1960–2015.

	1960	1970	1980	1990	2000	2010	2015
Anchorage Muncipality	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 2.–Timeline of selected key events, GMU 13 moose, 1960–2017

1960–1972	August/September and November moose hunting seasons in place; one moose or one bull bag limit[1]
1973	November season eliminated
1975–1979	September 1–20 moose hunting season in place; 1 bull bag limit
1978	Alaska Legislature adopts first state subsistence law
1980	Congress adopts ANILCA, including Title VIII granting a rural subsistence preference on federal public lands
1980–1982	Antler restrictions added to bag limit
1980	The Ewan decision in state court directs the BOG to adopt subsistence hunting regulations in GMU 13
1983	The BOG adopts its first positive C&T finding for moose and caribou in GMU 13
1983	The BOG establishes the first subsistence regulations for GMU 13 moose separate from general hunting: 1 bull bag limit by drawing permit with only local rural residents eligible
1985	Madison Case invalidates regulations establishing a rural subsistence preference; first Tier II hunts occur in GMU 13
1986	The Alaska Legislature adopts the second state subsistence law, with a rural preference
1986–1989	A subsistence registration hunt occurs in GMU 13 for any bull moose; August season restored 1988; 1 bull (per household bag limit (1987–1989)
1989	In December, the Alaska Supreme Court issues McDowell decision; rural preference in state law invalidated; places state out of compliance with ANILCA
1990	Federal Subsistence Board established; beginning of dual management; federal subsistence hunting regulations adopted for GMU 13 similar to those in place under state management in 1989
1990–1994	Annual changes to state regulations occur; antler restrictions fully in place, 1991–1994
1991	Kluti Kaah I case challenges state's regulations for subsistence moose hunting in GMU 13; Superior Court order prohibiting the state from enforcing the 7-day season against Kluti Kaah is stayed by the Supreme Court
1992	The Alaska Legislature adopts a new (the third) state subsistence law
1992, May 8	Supreme Court remands Kluti Kaah case back to Superior Court
1992, June 11	In Kluti Kaah I, Superior Court orders BOG to revise moose regulations in GMU 13
1992, June 23	In an emergency meeting, the BOG sets the ANS for GMU 13 at 600 moose; establishes a 14- day season with a one bull with 36 inch or greater antlers bag limit

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1. For more detail on the regulatory history for GMU 13 moose, see Appendix A.

Table 2.–Page 2 of 3.

1992, July 9	Superior Court finds BOG out of compliance with previous directive from the court and orders revisions to the regulations adopted in June
1992, July 10	In the Morry decision, the Alaska Supreme Court establishes the "all Alaskans policy," that all Alaskans are eligible to participate in subsistence hunting and fishing
1992, July 20	Superior Court, responding to Morry, reiterates order for a September 1–14 Tier II hunt
1992, July 29	Another BOG emergency meeting takes place, beginning the process to hold a Tier II hunt; appeal of Superior Court's order to Supreme Count
1992, Aug. 5	Supreme Court stays Superior Court's order; GMU 13 moose hunt proceeds in accordance with regulations adopted on June 23.
1993, July 8	Following Supreme Court's ruling in Kluti Kaah I in favor of the BOG's regulations, the Superior Court's July 29 order is vacated and the case is dismissed
1994	The Kluti Kaah II case challenges bag limits with antler size requirements in the GMU 13 moose hunt
1995, March	BOG establishes a subsistence Tier II hunt in GMU 13 for any bull moose with an August season; 150 permits available; consequently, plaintiff's drop their Kluti Kaah II case, and the case is dismissed on September 20, 1995.
2002, March	BOG modifies Tier II permit hunt application questions and points allocation
2004	BOG establishes the Subsistence Implementation Committee to address subsistence hunting regulations for moose and caribou in GMU 13.
2006, Oct.	BOG develops finding #2006-170-BOG describing the customary and traditional community pattern of harvesting and using moose and caribou in the Copper River Basin
2006, Oct	BOG establishes a community hunt area in GMU 13, GMU 11, and a portion of GMU 12, later named the "Gulkana, Cantwell, Chistochina, Gakona, Mentasta, Tazlina, Chitina, and Kluti Kaah Community Harvest Area."
2009, March	BOG modifies the GMU 13 ANS to 300–600 moose and develops regulations for a community subsistence hunt for moose and caribou in GMU 13
2009, June 29	A preliminary ruling in the Manning case changes opened the CSH to all Alaska residents
2009, August	The first community subsistence hunt for moose and caribou opens in GMU 13, GMU 11, and a portion of GMU 12.
2010, July 9	Superior Court invalidates provisions of community hunt regulations in Manning et al. vs. state; finds the regulations to be residence based
2010, July 28	In response to the Manning decision, the BOG establishes general season moose hunt from 8/15–8/25, with bag limit of one bull with spike fork or 50" antlers or antlers with 3 or more brow tines, to accompany a 9/1–9/20 season also with antler size requirements

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Table 2.–Page 3 of 3.

2010, October	BOG adopted modified regulations reestablishing the community hunt for moose and caribou in GMU 13. GMU 11, and a portion of GMU 12; any group with 25 or more members may apply for and receive a permit, subject to certain hunting conditions
2011, March 7	BOG adopts Finding 2011-184-BOG regarding a second, more individual pattern of C&T use of moose and caribou in GMU 13
2011, Aug. 5	Superior court grants summary judgement to the state in AFWCF v State, upholding community subsistence hunt regulations adopted in October 2010
2011, August	Community subsistence hunts in the Copper Basin resume under the new regulations
2013, October	The BOG forms the "Committee on Copper Basin Area Subsistence Hunting Regulations"; the committee meets three times and develops a set of proposals for BOG consideration at its February 2015 meeting in Wasilla
2015, Mar. 18	In response to the rapid increase in participation in the community hunt, the BOG adopts Finding 2015-209-BOG that directs the department to establish any bull quotas by subarea
2015, Mar. 27	In AFWCT v. State, the Alaska Supreme Court rules in favor of the October 2010 community hunt regulations as well as the two BOG findings regarding C&T patterns
2015, Aug. 30	The BOG received a request from Ahtna Tene Nene' to review and modify CSH regulations in response to the increase in participation in these hunts and rapid harvest of the "any bull moose" allocation
2016, Oct. 23	A special BOG teleconference meeting to discuss community subsistence hunt regulations occurs; additional discussions scheduled for a special meeting in Glennallen March 18–21, 2017

Table 3.–Comparison of harvests and uses of moose, Copper Basin communities, 1982, 1987, and 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 4.–Number of Tier II hunt applications, permits awarded, hunters, and harvest by area of residence, GMU 13 moose (TM300) 1990– 2007

		Total applications	Permits awarded	Permit hunted	Permit resulted in harvest
1995/1996	Copper Basin	623	124	97	18
	Other	1,219	26	22	8
	Total	**1,842**	**150**	**119**	**26**
1996/1997	Copper Basin	436	115	100	22
	Other	1,183	35	31	11
	Total	**1,619**	**150**	**131**	**33**
1997/1998	Copper Basin	498	135	99	21
	Other	1,279	15	11	4
	Total	**1,777**	**150**	**110**	**25**
1998/1999	Copper Basin	433	129	106	29
	Other	1,444	24	23	8
	Total	**1,877**	**153**	**129**	**37**
1999/2000	Copper Basin	520	124	94	25
	Other	1,376	26	23	9
	Total	**1,896**	**150**	**117**	**34**
2000/2001	Copper Basin	423	137	114	34
	Other	1,061	12	12	6
	Total	**1,484**	**149**	**126**	**40**
2001/2002	Copper Basin	412	138	116	31
	Other	1,072	12	10	4
	Total	**1,484**	**150**	**126**	**35**
2002/2003	Copper Basin	340	96	80	23
	Other	1,019	54	48	31
	Total	**1,359**	**150**	**128**	**54**
2003/2004	Copper Basin	312	68	56	22
	Other	1,170	82	74	40
	Total	**1,482**	**150**	**130**	**62**
2004/2005	Copper Basin	297	84	67	28
	Other	1,168	66	48	28
	Total	**1,465**	**150**	**115**	**56**
2005/2006	Copper Basin	288	90	72	19
	Other	946	60	55	22
	Total	**1,234**	**150**	**127**	**41**
2006/2007	Copper Basin	270	68	62	23
	Other	1,113	82	67	28
	Total	**1,383**	**150**	**129**	**51**
2007/2008	Copper Basin	228	75	67	24
	Other	1,005	75	61	23
	Total	**1,233**	**150**	**128**	**47**
2008/2009	Copper Basin	464	115	99	46
	Other	1,330	35	32	16
	Total	**1,794**	**150**	**131**	**62**
Average	Copper Basin	396	107	88	26
	Other	1,170	43	37	17
	Total	**1,566**	**150**	**125**	**43**

Source ADF&G Division of Wildlife Conservation

Table 5.–Participation and harvest in the CSH hunt in Units 11, 13, and a portion of 12, regulatory years 2009–2016.

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	73	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 6.–CM300 "any-bull" harvests by hunter residency, 2009–2016.

	Residency of hunter				
	GMU 13		Other Alaska		
Year	Number	Percent	Number	Percent	Total any-bull harvest
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 7.–Number of moose hunters, harvests, and success rates by area of Alaska residence, GMU 13, 1963–2016.

	Number of hunters			Number of moose harvested			Success rate		
	Local	Nonlocal	Total	Local	Nonlocal	Total[d]	Local	Nonlocal	All
1963[a]						1,735			
1964[a]						1,607			
1965[a]						1,331			
1966[a]			4,163			1,553			37.3%
1967			3,578			1,243			34.7%
1968			4,035			1,210			30.0%
1969	296	2,544	2,840	94	815	909	31.8%	32.0%	32.0%
1970			2,622			852			32.5%
1971	343	3,965	4,308	122	1,281	1,403	35.6%	32.3%	32.6%
1972	196	2,448	2,644	34	398	432	17.3%	16.3%	16.3%
1973	157	2,029	2,186	39	410	449	24.8%	20.2%	20.5%
1974	200	2,240	2,440	43	576	619	21.5%	25.7%	25.4%
1975	210	2,486	2,696	45	536	581	21.4%	21.6%	21.6%
1976	286	2,648	2,934	58	570	628	20.3%	21.5%	21.4%
1977	241	1,922	2,163	64	548	612	26.6%	28.5%	28.3%
1978	382	2,338	2,720	99	614	713	25.9%	26.3%	26.2%
1979	301	2,004	2,305	101	734	835	33.6%	36.6%	36.2%
1980	366	2,249	2,615	76	374	450	20.8%	16.6%	17.2%
1981	437	2,473	2,910	106	581	687	24.3%	23.5%	23.6%
1982	437	2,329	2,766	74	484	558	16.9%	20.8%	20.2%
1983	584	2,510	3,094	147	666	813	25.2%	26.5%	26.3%
1984	576	2,722	3,298	131	640	771	22.7%	23.5%	23.4%
1985	650	2,715	3,365	135	598	733	20.8%	22.0%	21.8%
1986[b]	1,166	3,112	4,278	230	813	1,043	19.7%	26.1%	24.4%
1987[b]	850	2,956	3,806	199	633	832	23.4%	21.4%	21.9%
1988[b]	928	2,959	3,887	263	821	1,084	28.3%	27.7%	27.9%
1989[b]	755	3,416	4,171	249	818	1,067	33.0%	23.9%	25.6%
1990	741	1,878	2,619	102	346	448	13.8%	18.4%	17.1%
1991	865	2,132	2,997	155	531	686	17.9%	24.9%	22.9%
1992	825	2,307	3,132	101	518	619	12.2%	22.5%	19.8%
1993	912	4,524	5,436	138	1,020	1,158	15.1%	22.5%	21.3%
1994	924	4,784	5,708	113	745	858	12.2%	15.6%	15.0%
1995	961	4,847	5,808	152	724	876	15.8%	14.9%	15.1%
1996	937	4,897	5,834	150	776	926	16.0%	15.8%	15.9%
1997	865	4,815	5,680	130	713	843	15.0%	14.8%	14.8%
1998	943	4,246	5,189	136	706	842	14.4%	16.6%	16.2%
1999	943	3,834	4,777	151	577	728	16.0%	15.0%	15.2%
2000	870	3,072	3,942	98	413	511	11.3%	13.4%	13.0%
2001	898	2,531	3,429	97	332	429	10.8%	13.1%	12.5%
2002	924	2,507	3,431	109	460	569	11.8%	18.3%	16.6%
2003	875	2,599	3,474	135	477	612	15.4%	18.4%	17.6%
2004	826	2,743	3,569	104	508	612	12.6%	18.5%	17.1%
2005	864	2,904	3,768	103	463	566	11.9%	15.9%	15.0%
2006	855	3,227	4,082	110	574	684	12.9%	17.8%	16.8%
2007	743	2,950	3,693	134	506	640	18.0%	17.2%	17.3%
2008	909	3,427	4,336	140	599	739	15.4%	17.5%	17.0%
2009	1,001	3,384	4,385	183	671	856	18.3%	19.8%	19.5%
2010	952	4,079	5,031	127	806	933	13.3%	19.8%	18.5%
2011	952	3,944	4,896	156	776	935	16.4%	19.7%	19.1%
2012	912	4,614	5,526	114	598	713	12.5%	13.0%	12.9%
2013	864	4,820	5,684	94	607	701	10.9%	12.6%	12.3%
2014	907	4,459	5,366	130	785	916	14.3%	17.6%	17.1%
2015	853	4,738	5,591	138	885	1,024	16.2%	18.7%	18.3%
2016[c]	400	4,218	4,618	69	841	1,013			

Sources ADF&G, Division of Wildlife Conservation, 1963–2007; WINFONET 2008–2016

a. For 1963 through 1966, includes all hunters, including nonresidents. Nonresidents and unknown residence not included in totals from 1967 to present.

b. From 1986 through 1989, residents of GMU 13 communities qualified for registration subsistence permits.

c. For 2016, data on number of hunters for the federal hunt not available. Also, residence of successful hunters in the federal hunt not available. Total column includes 100 moose harvested in the federal hunt.

d. Totals include harvests by hunters of unknown residency in the community hunt, 2009–2016. See also Table 8.

Table 8.–Moose harvests in GMU 13 by area of Alaska residence and hunt type, 1990–2016.

	Harvests by residents of GMU 11 and 13						Harvests by other Alaska residents						Total harvests by all Alaskans					
Year	State harvest ticket	State drawing hunts	State Tier II hunt	State community hunt	Federal permit	Subtotal	State harvest ticket	State drawing hunts	State Tier II hunt	State community hunt	Federal permit	Subtotal	State harvest ticket	State drawing hunts	State Tier II hunt	State community hunt[c]	Federal permit	Total
1990	28		a		74	102	341		a			341	369		65		74	508
1991	52				102	154	529					529	581		0		102	683
1992	42				56	98	516					516	558		0		56	614
1993	89				49	138	992					992	1,081		0		49	1,130
1994	83				30	113	707					707	790		0		30	820
1995	90		18		44	152	716		8			724	806		26		44	876
1996	85		22		43	150	765		11			776	850		33		43	926
1997	66		21		43	130	709		4			713	775		25		43	843
1998	66		29		41	136	697		8			705	763		37		41	841
1999	77		25		50	152	551		9			560	628		34		50	712
2000	39		34		32	105	386		6		14	406	425		40		46	511
2001	44		31		29	104	312		4		8	324	356		35		37	428
2002	54		23		37	114	407		31		17	455	461		54		54	569
2003	64		22		50	136	432		40		11	483	496		62		61	619
2004	48		28		36	112	458		28		14	500	506		56		50	612
2005	44		19		40	103	430		22		11	463	474		41		51	566
2006	53		23		34	110	533		28		13	574	586		51		47	684
2007	72		24		38	134	468		23		14	505	540		47		52	639
2008	51		46		43	140	569		16		14	599	620		62		57	739
2009	40	5		95	43	183	590	60		3	18	671	630	65		100	61	856
2010	67	7			53	127	697	85			24	806	764	92			77	933
2011	51	3		54	48	156	669	46		29	32	776	720	49		86	80	935
2012	40	2		36	36	114	478	36		61	23	598	518	38		98	59	713
2013	29	1		28	36	94	417	48		128	14	607	446	49		156	50	701
2014	40	1		32	57	130	629	11		117	28	785	669	12		150	85	916
2015	42	0		36	60	138	719	7		134	25	885	761	7		171	85	1,024
2016[b]	41			28	NA	69	667	4		170	NA	841	708	4		201	100	1,013
Recent 5-Year Average[d]	40	1		37	47	126	582	30		94	24	730	623	31		132	72	858
Recent 10-Year Average[d]	49	3	31	47	45	133	577	42	22	79	21	681	625	45	53	127	65	814
Average, 1990–2015	56	3	26	47	46	128	566	42	17	79	18	615	622	45	35	127	57	746

Source Division of Wildlife Conservation, ADF&G through 2007; WINFONET 2008–2016

a. Hunt residency data not available for the 1990 Tier II hunt. *Source* Tobey 1993

b. Hunt residency data not available for federal hunt for 2016. Subtotals therefore incomplete and do not equal state total.

c. Totals include following for unknown residence: 2009: 2; 2011: 3; 2012: 1; 2014: 1; 2015: 1. 2016: 3.

d. Averages do not include 2016.

NA: not available

Table 9.–Mean annual number of hunters and successful hunters, and success rates, GMU 13 moose, 1980–1991 and 1992–2008, and 2009–2015.

	1980 to 1991[a]		1992 to 2008[b]		2009–2015[c]	
	Annual Mean	Range	Annual Mean	Range	Annual Mean	Range
GMU 13 residents only:						
Number of hunters	696	366–1,166	887	743–961	920	853–1.001
Number of successful hunters	156	74–263	124	97–152	135	94–183
Success rate	22.3%	16.9%–33.0%	13.9%	10.8%–18.0%	14.6%	10.9%–18.3%
Other Alaska residents:						
Number of hunters	2,621	1,878–3,416	3,542	2,307–4,897	4,291	3,384–4,820
Number of successful hunters	609	346–821	595	332–1,020	733	598–885
Success rate	23.2%	16.6%–27.7%	16.8%	13.1%–22.5%	17.1%	12.6%–19.8%
All Alaska residents:						
Number of hunters	3,317	2,615–4,278	4,429	3,132–5,834	5,211	4,385–5,684
Number of successful hunters	764	448–1,084	718	429–1,158	868	701–1,024
Success rate	23.0%	17.1%–27.9%	16.2%	12.5%–21.3%	16.7%	12.3%–19.5%

a. This is the 12-year period upon which the original ANS of 600 moose (1992) was based.
b. Years from original ANS until ANS revision and establishing of community subsistence hunts
c. Years since establishment of community subsistence hunt

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Table 10.–Mean annual number of all hunters and successful hunters by transport type, GMU 13 moose, 2009–2016.

	Local Residents		Non-local/non-resident	
Transport means	Number	Percentage	Number	Percentage
All Hunters				
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**	
Successful hunters				
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**	

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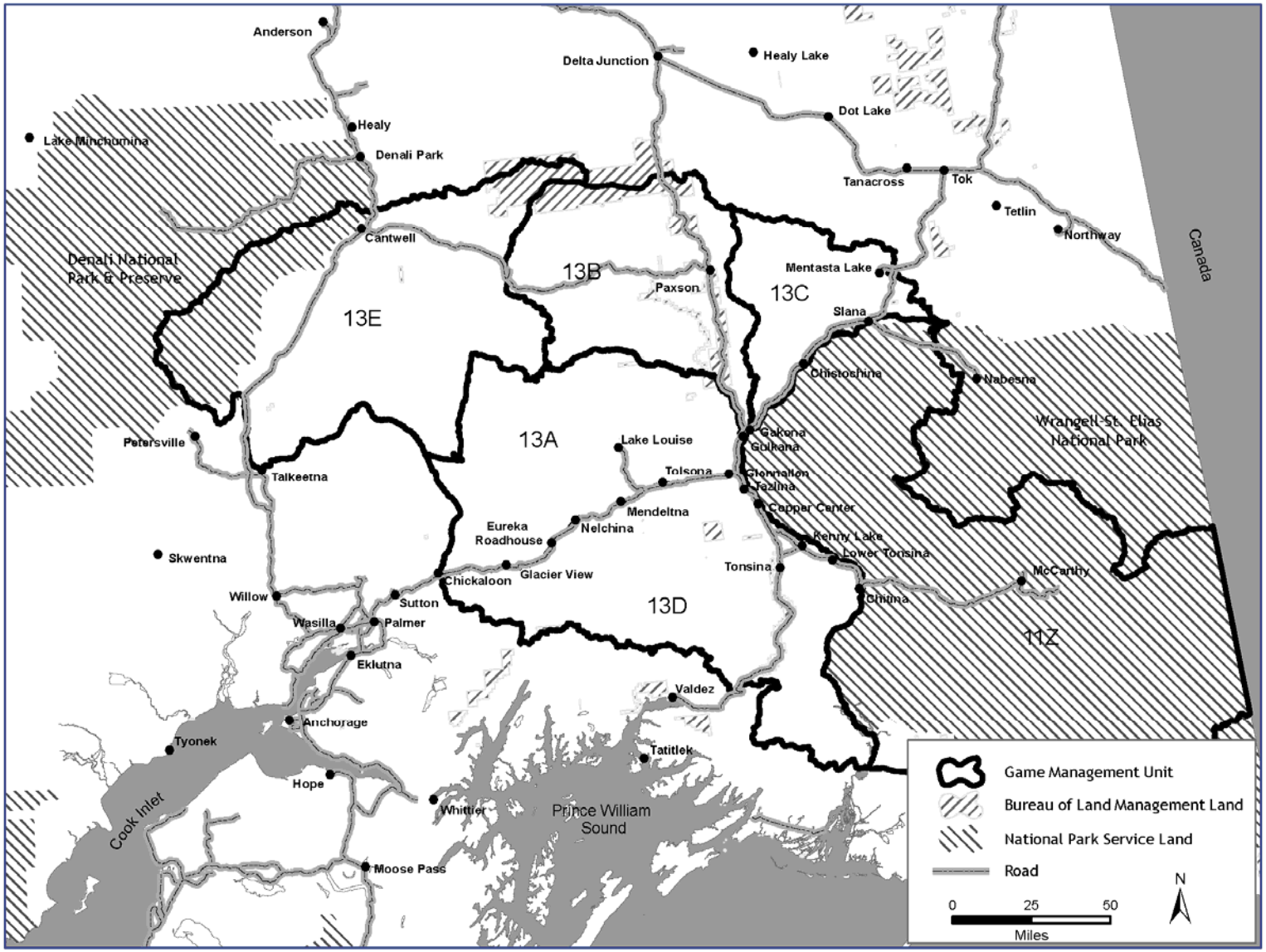

Figure 1.–Game management units (GMU) 13 and 11.

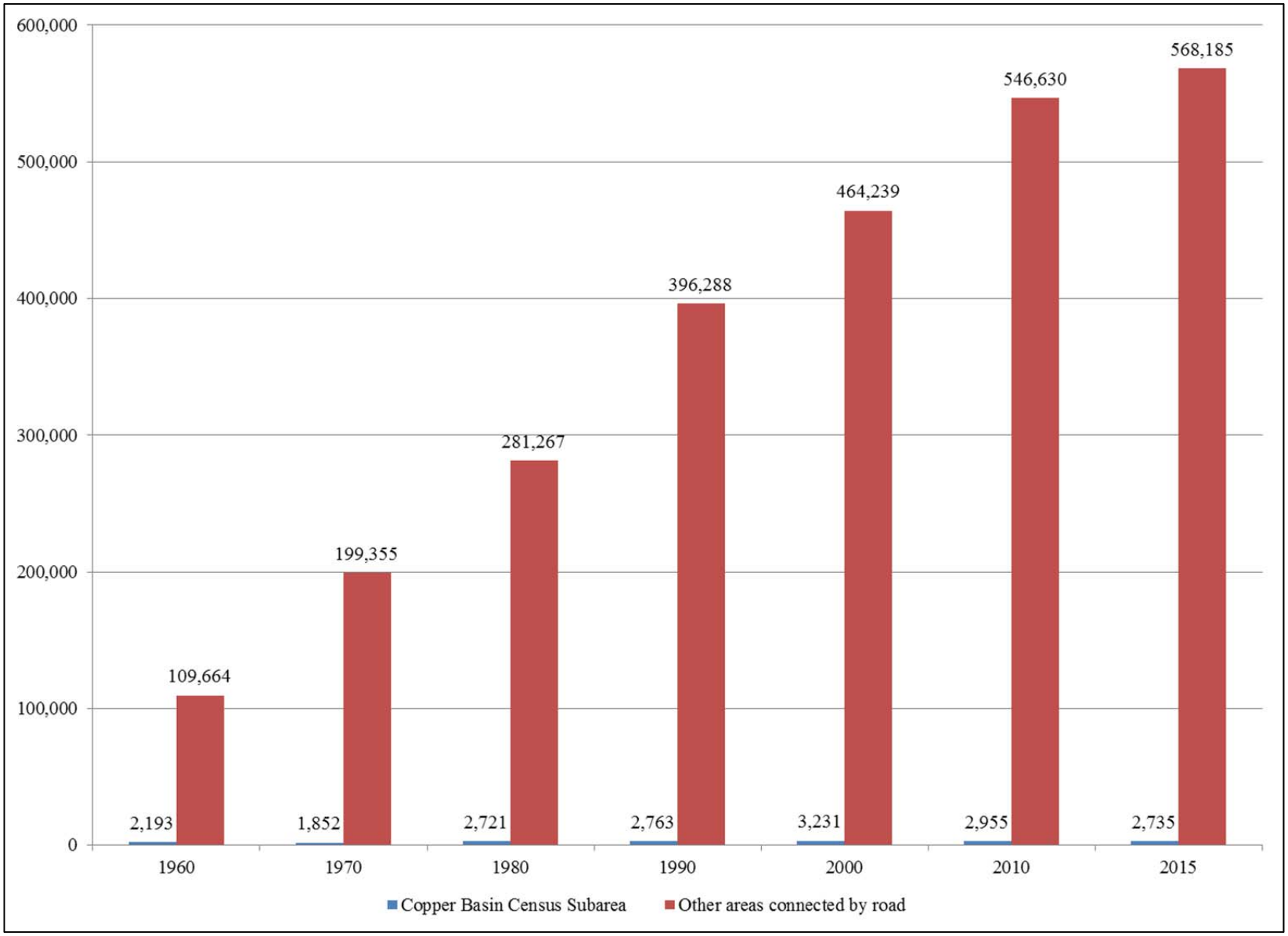

Figure 2.–Population of Copper Basin Census Subarea and other areas connected by road to GMU 13, 1960–2015.

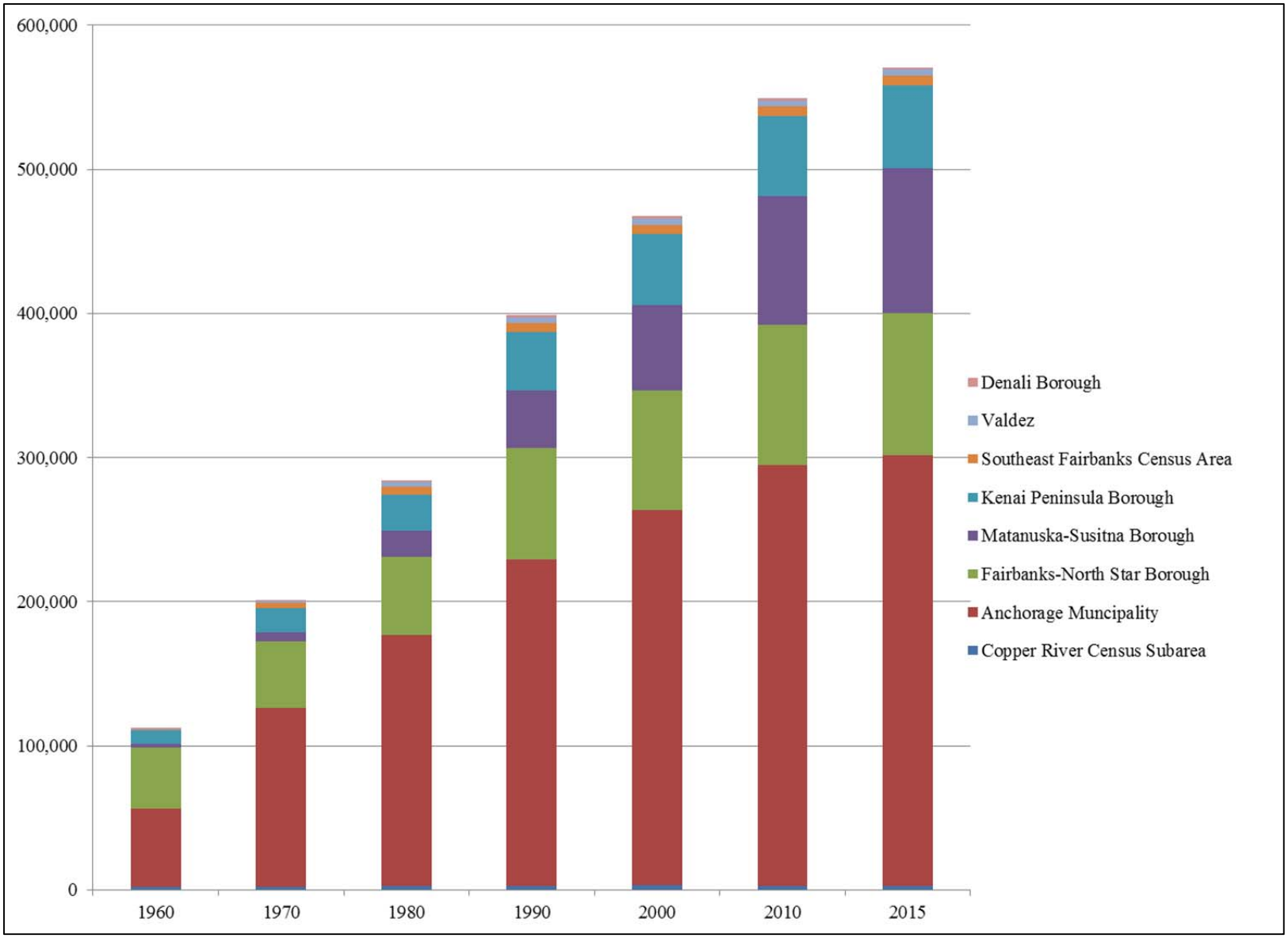

Figure 3.–Populations of areas of Alaska connected by road to GMU 13, 1960–2015.

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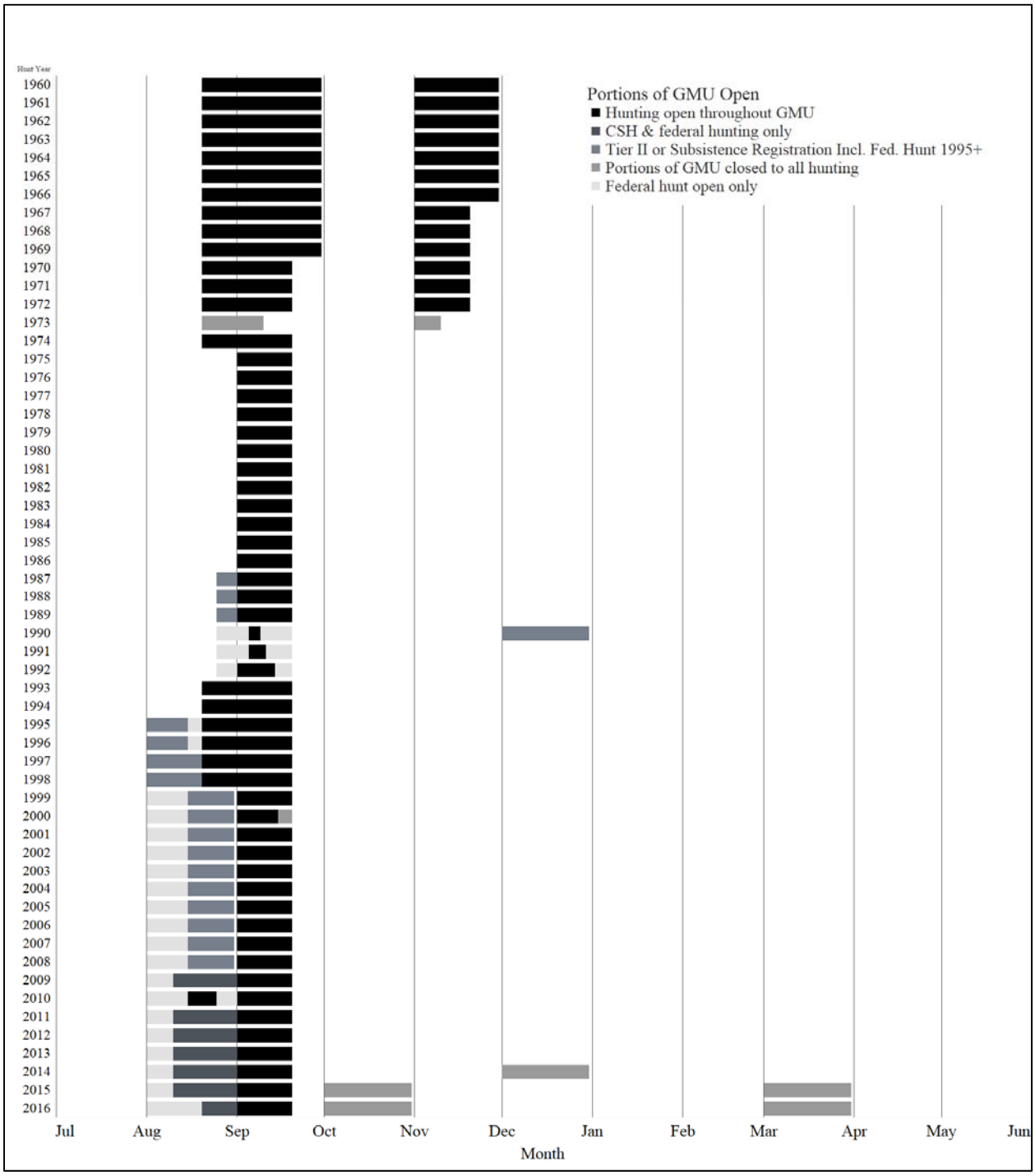

Figure 4.–GMU 13 moose harvest seasons, 1960–2016.

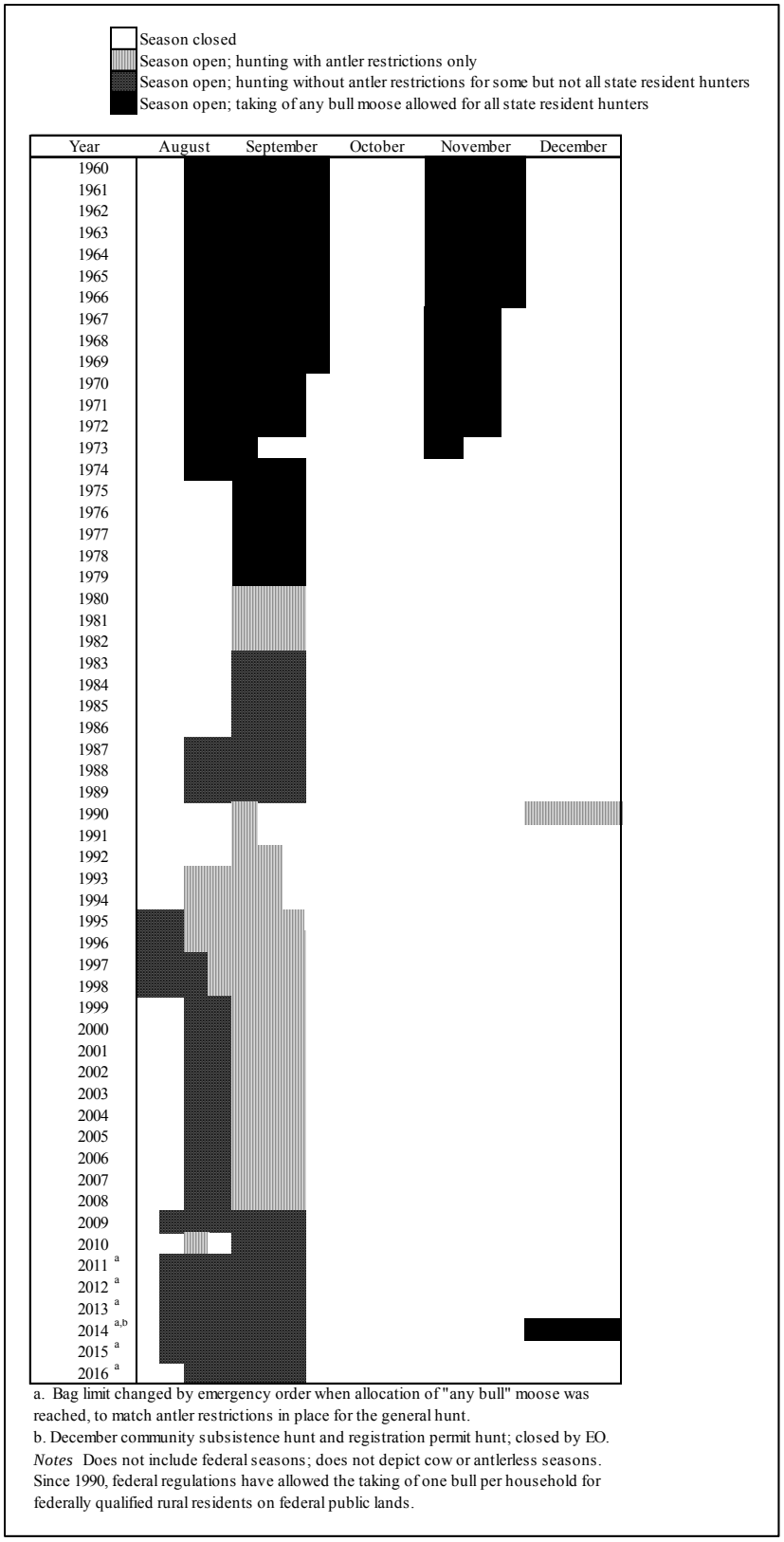

Figure 5.–Antler size requirements for taking bull moose in state-managed hunts in GMU 13, 1960–2016.

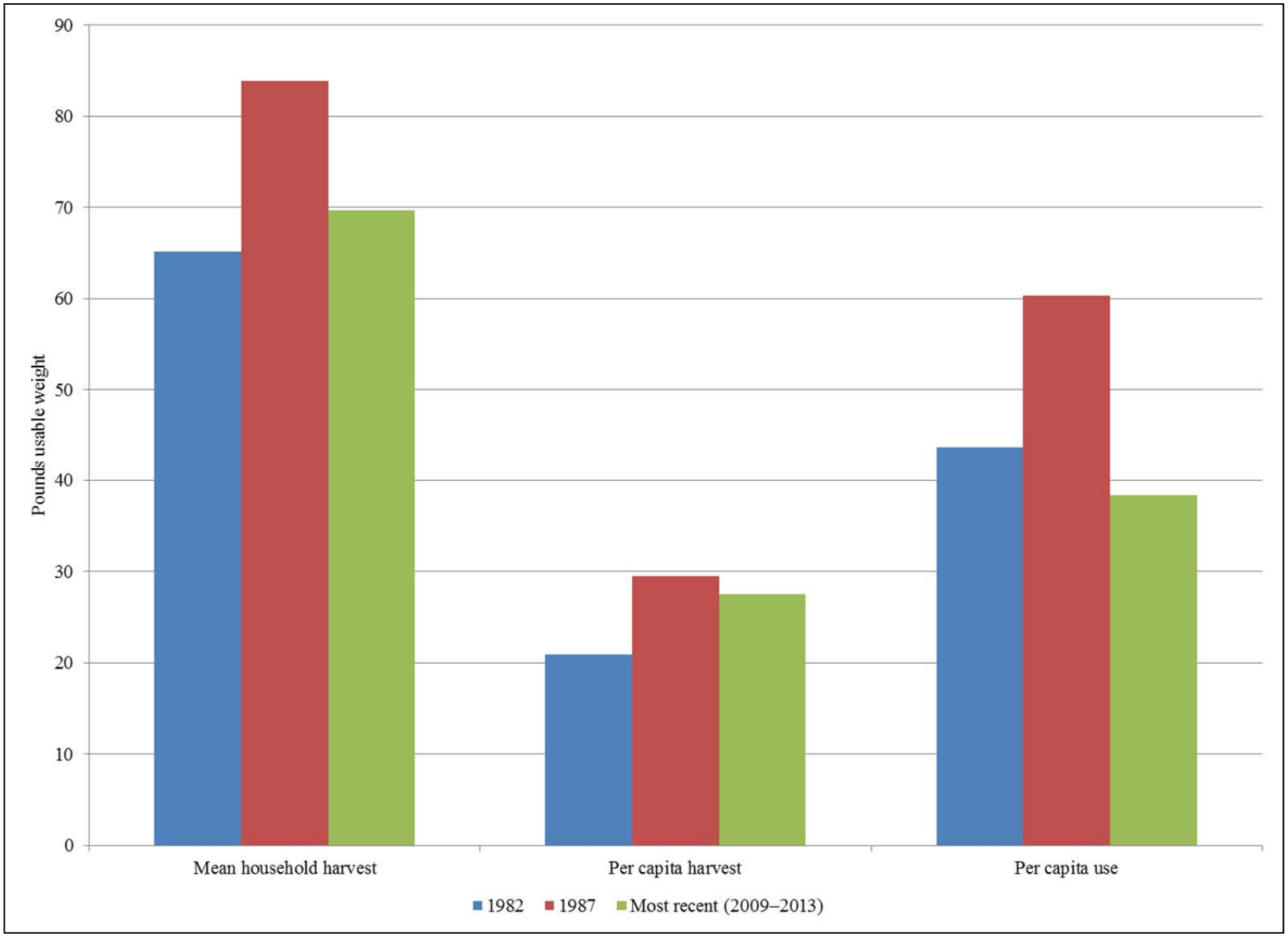

Figure 6.–Moose harvest data in pounds usable weight, Copper Basin communities, based on comprehensive household surveys.

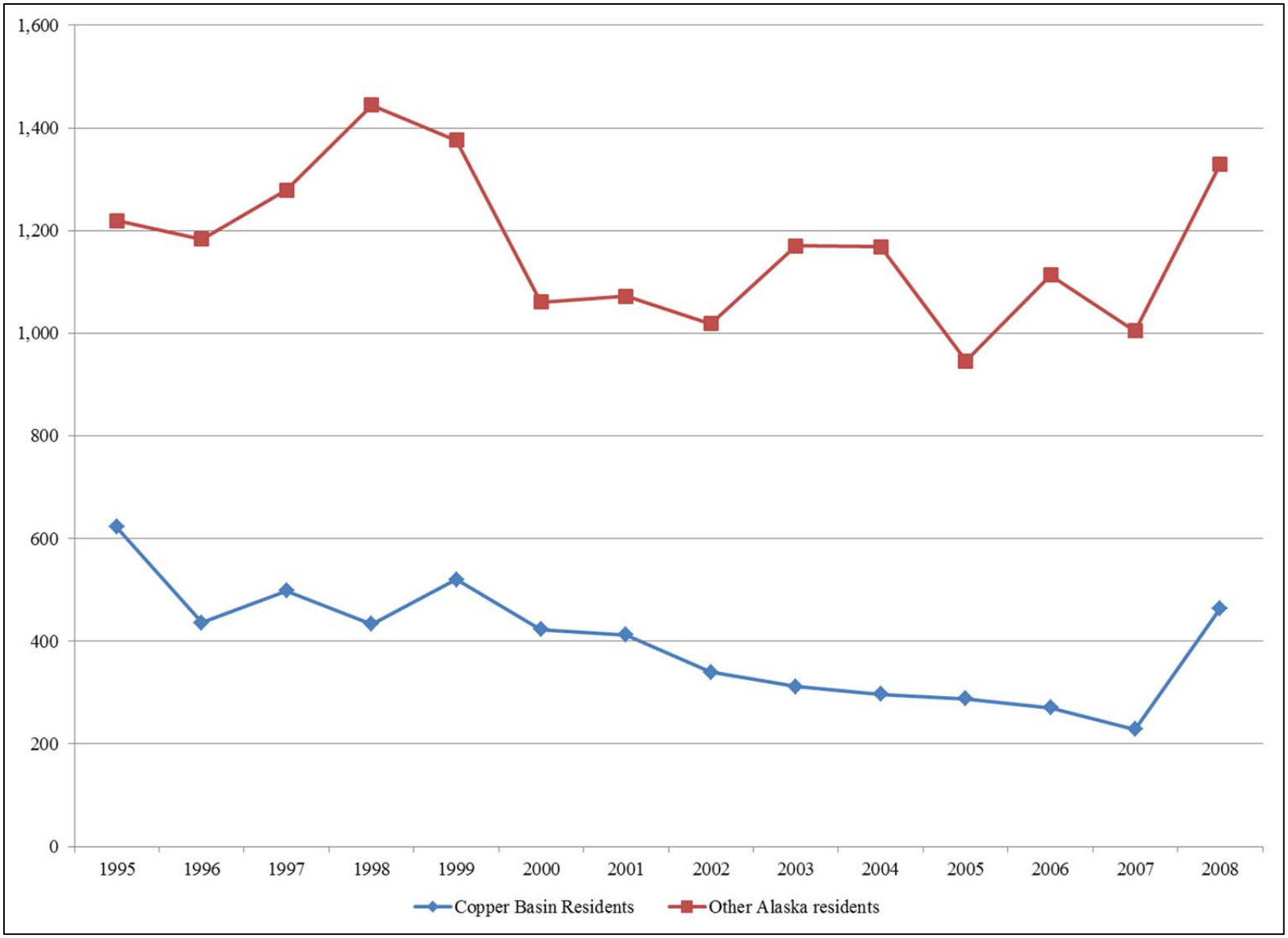

Figure 7.–Number of applications, Tier II moose hunt in GMU 13, 1995–2008.

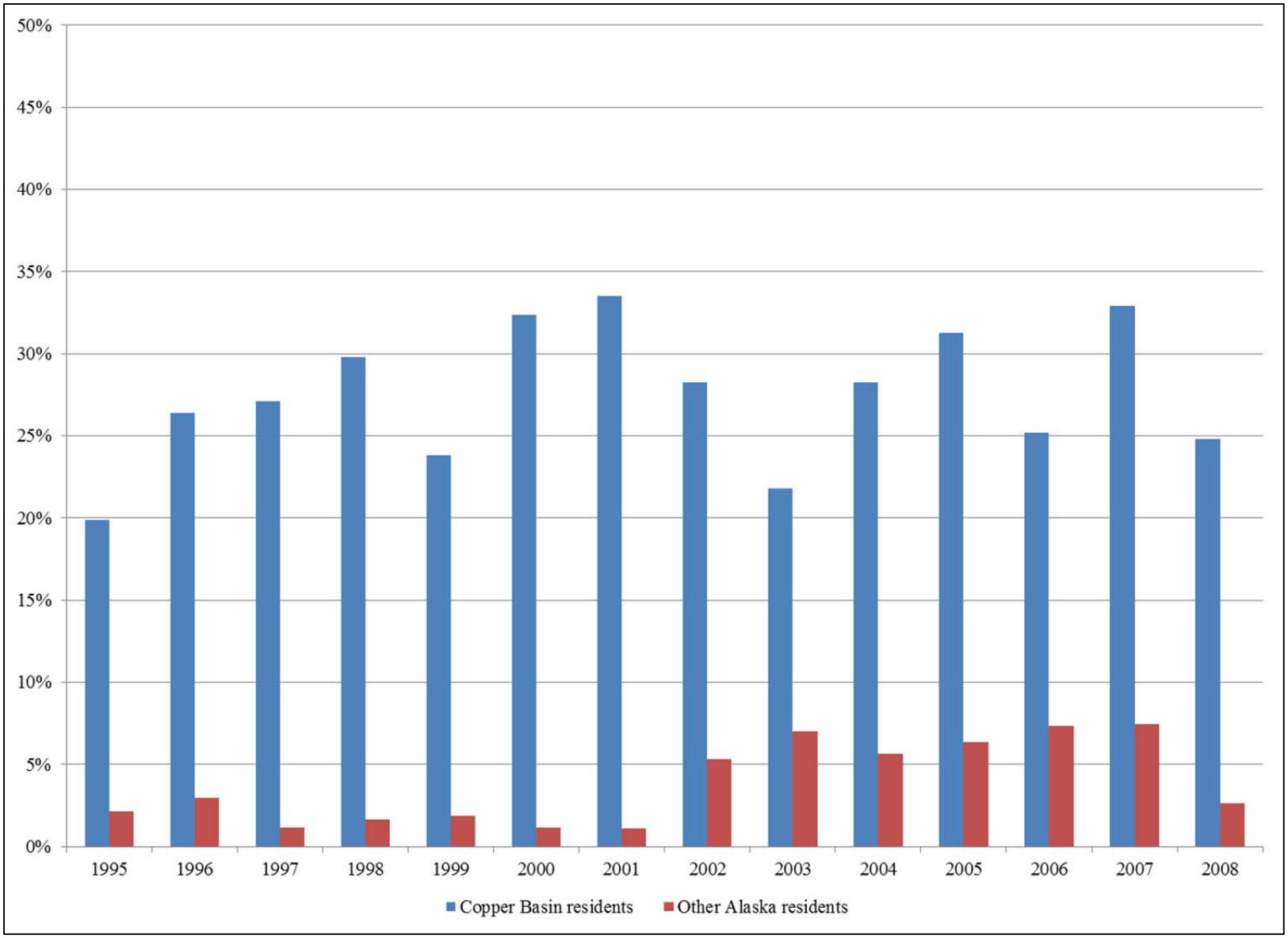

Figure 8.–Percentage of applicants for Tier II moose hunt in GMU 13 (TM 300) receiving permits, by area of residence, 1995–2008.

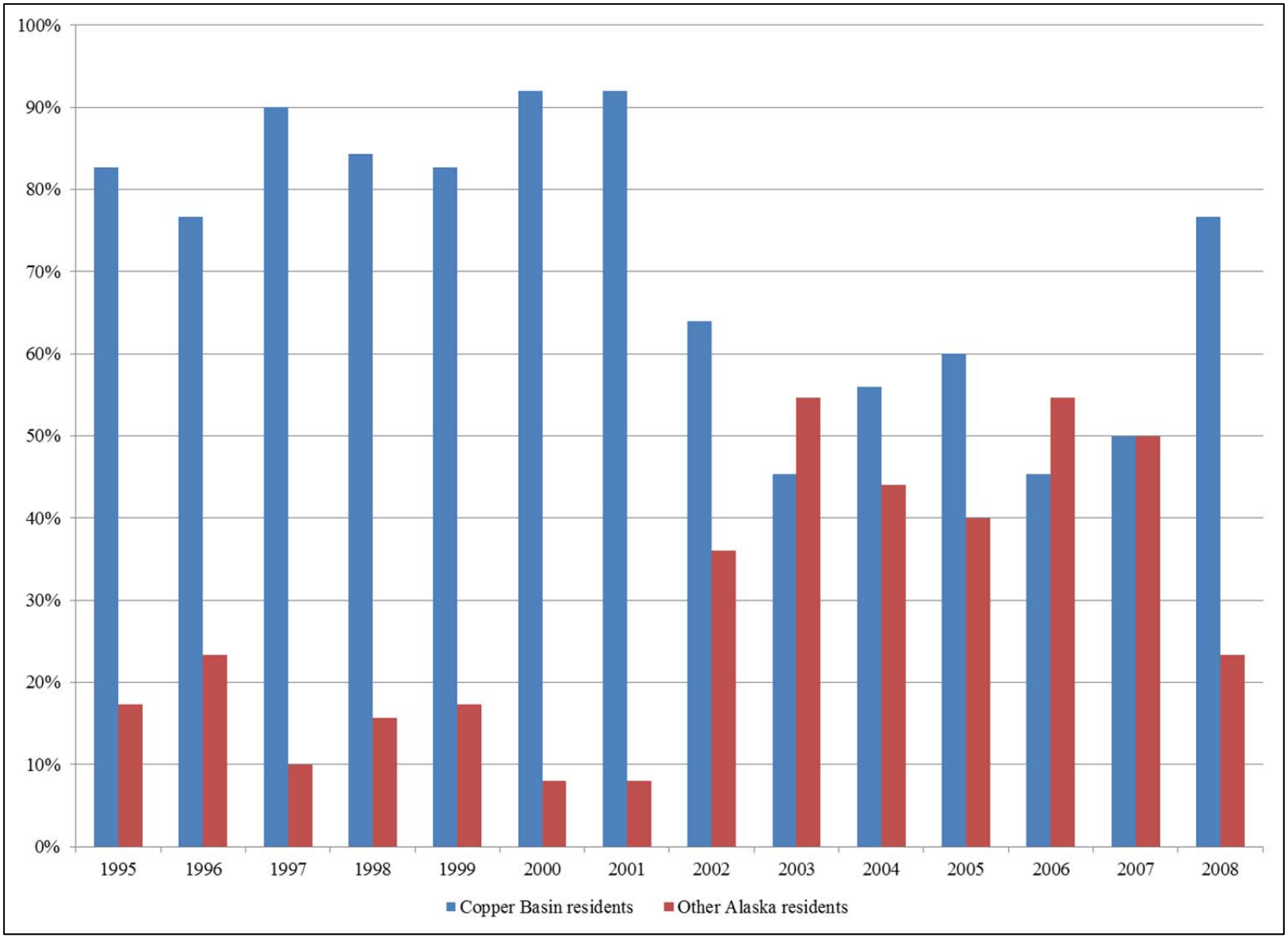

Figure 9.–Percentage of permits awarded, Tier II moose hunt in GMU 13 (TM300), by area of residence, 1995–2008.

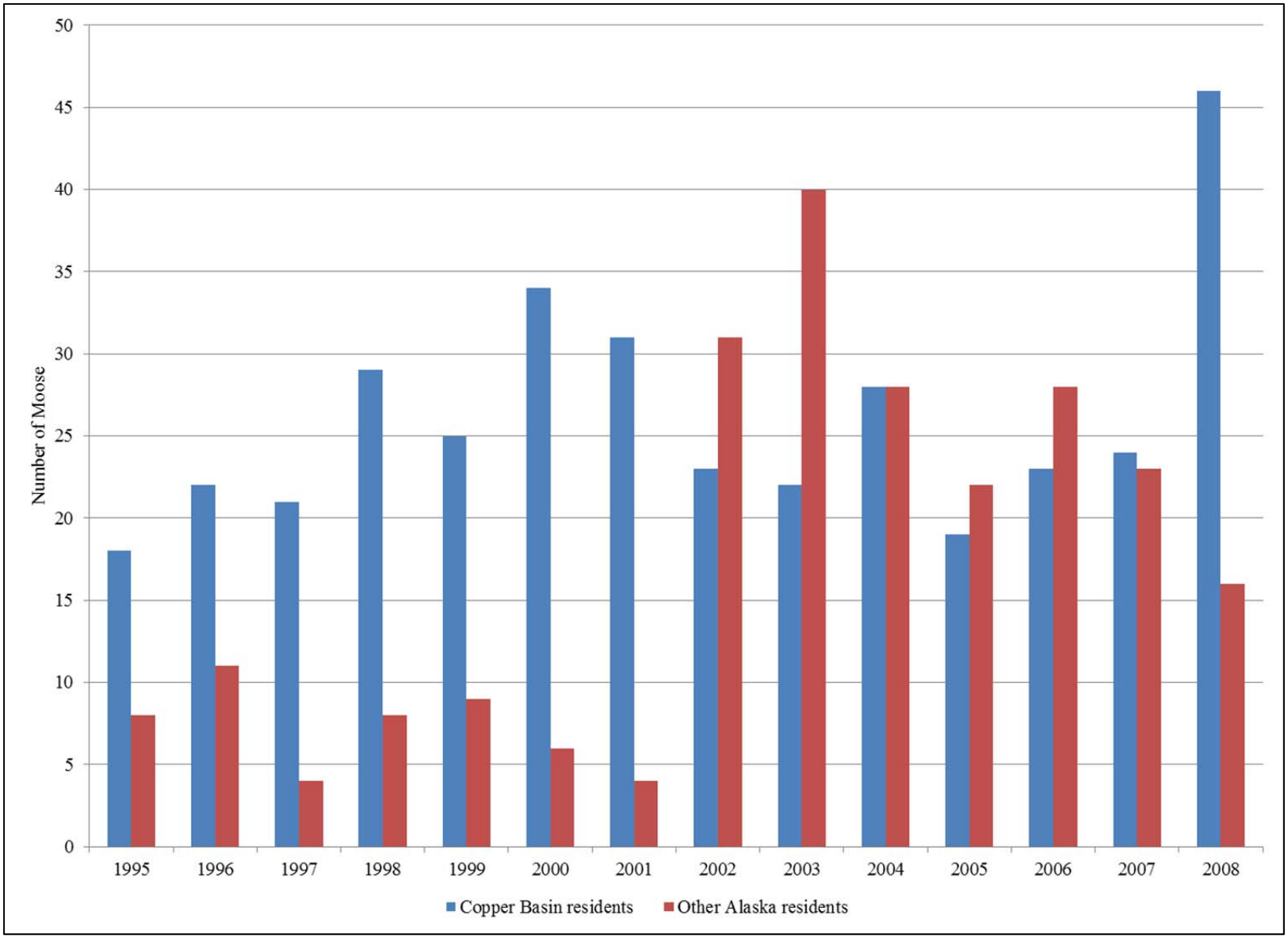

Figure 10.–Number of moose harvested, Tier II moose hunt in GMU 13 (TM 300), by area of residence, 1995–2008.

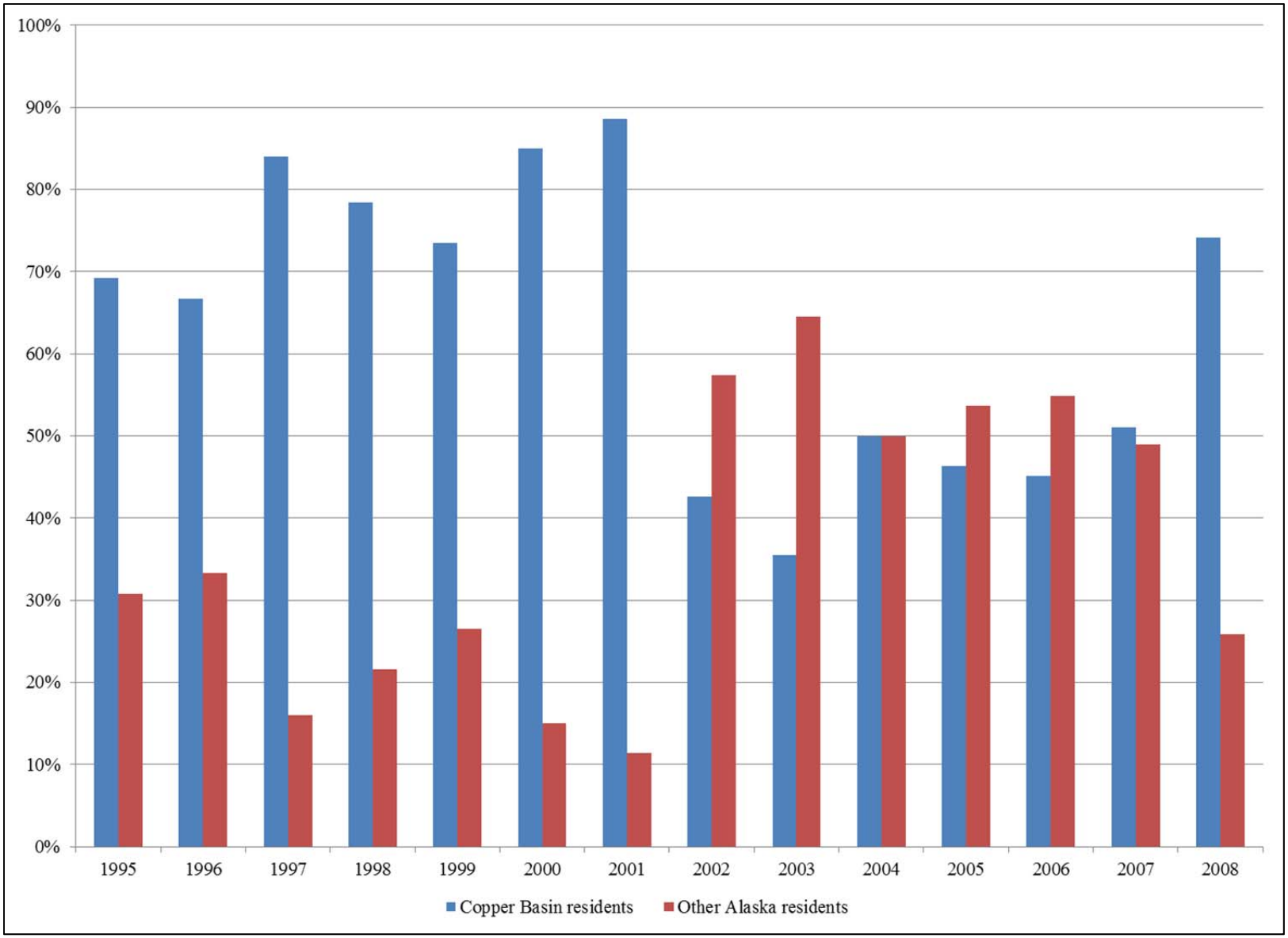

Figure 11.–Percentage of moose harvest, Tier II moose hunt in GMU 13 (TM 300), by area of residence, 1995–2008.

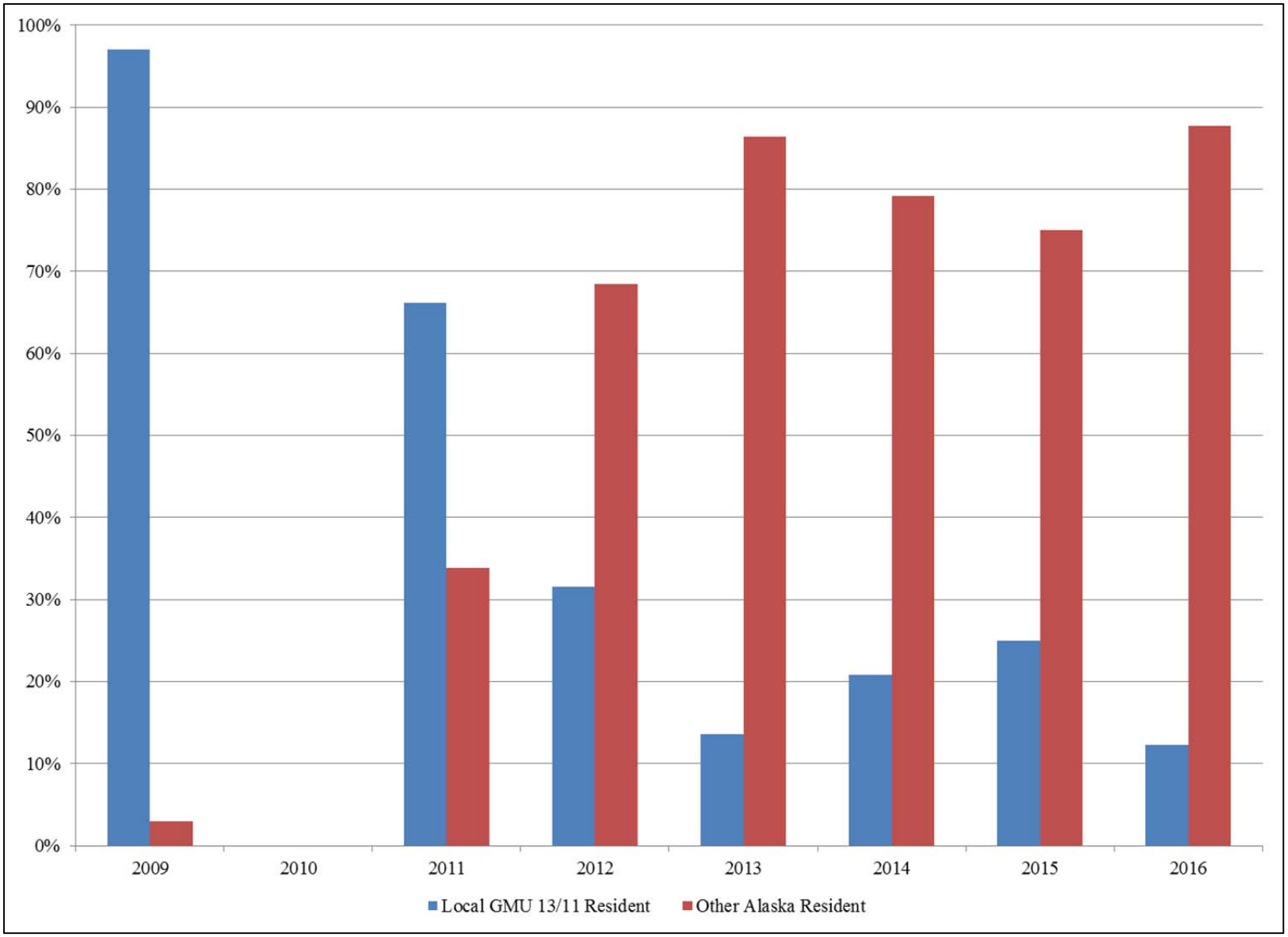

Figure 12.–Percentage of "any bull" moose harvest in CSH hunt by area of residence, 2009–2016.

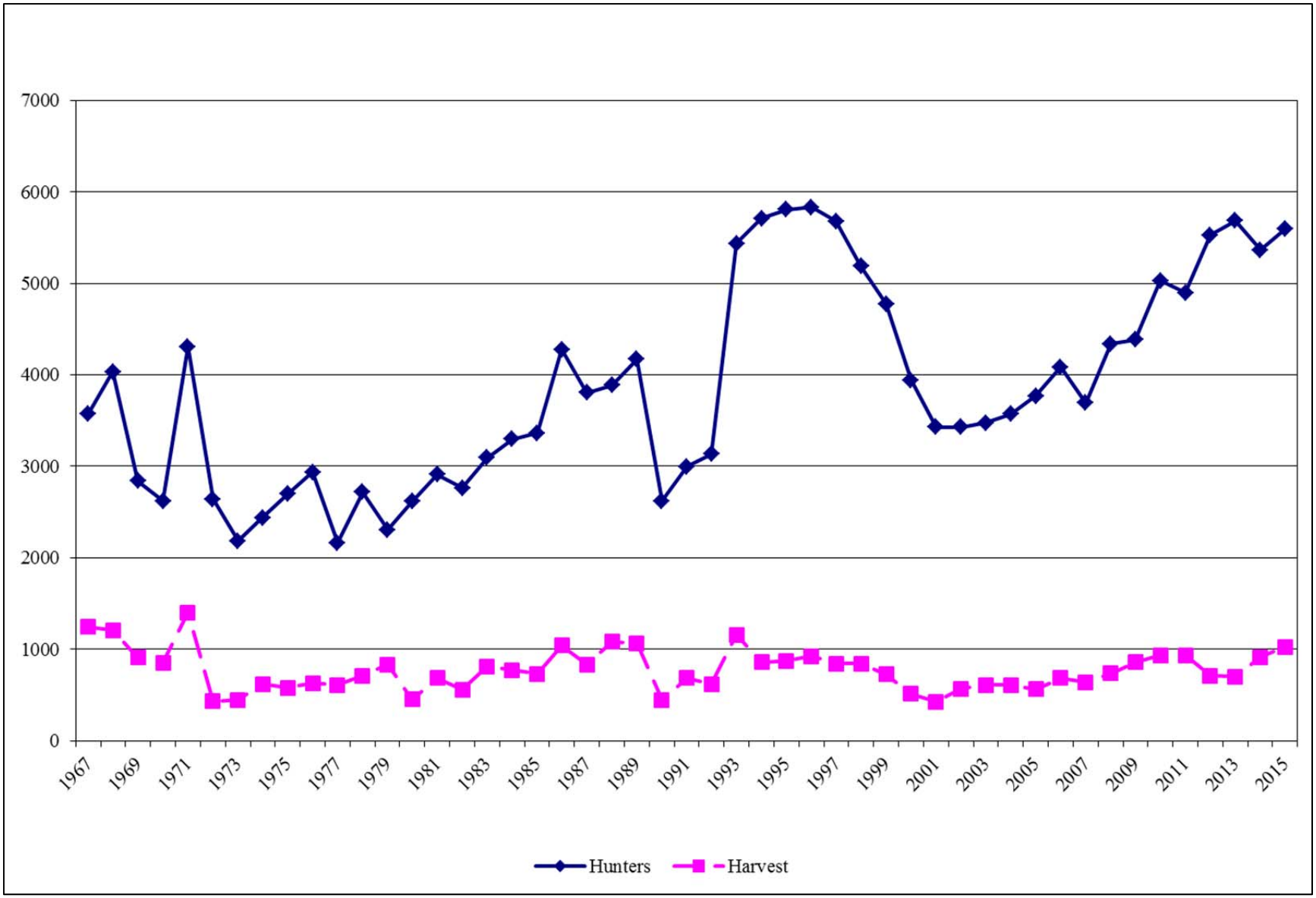

Figure 13.–Number of Alaska resident hunters of moose in GMU 13 and number of moose harvested, all hunts, 1967–2015.

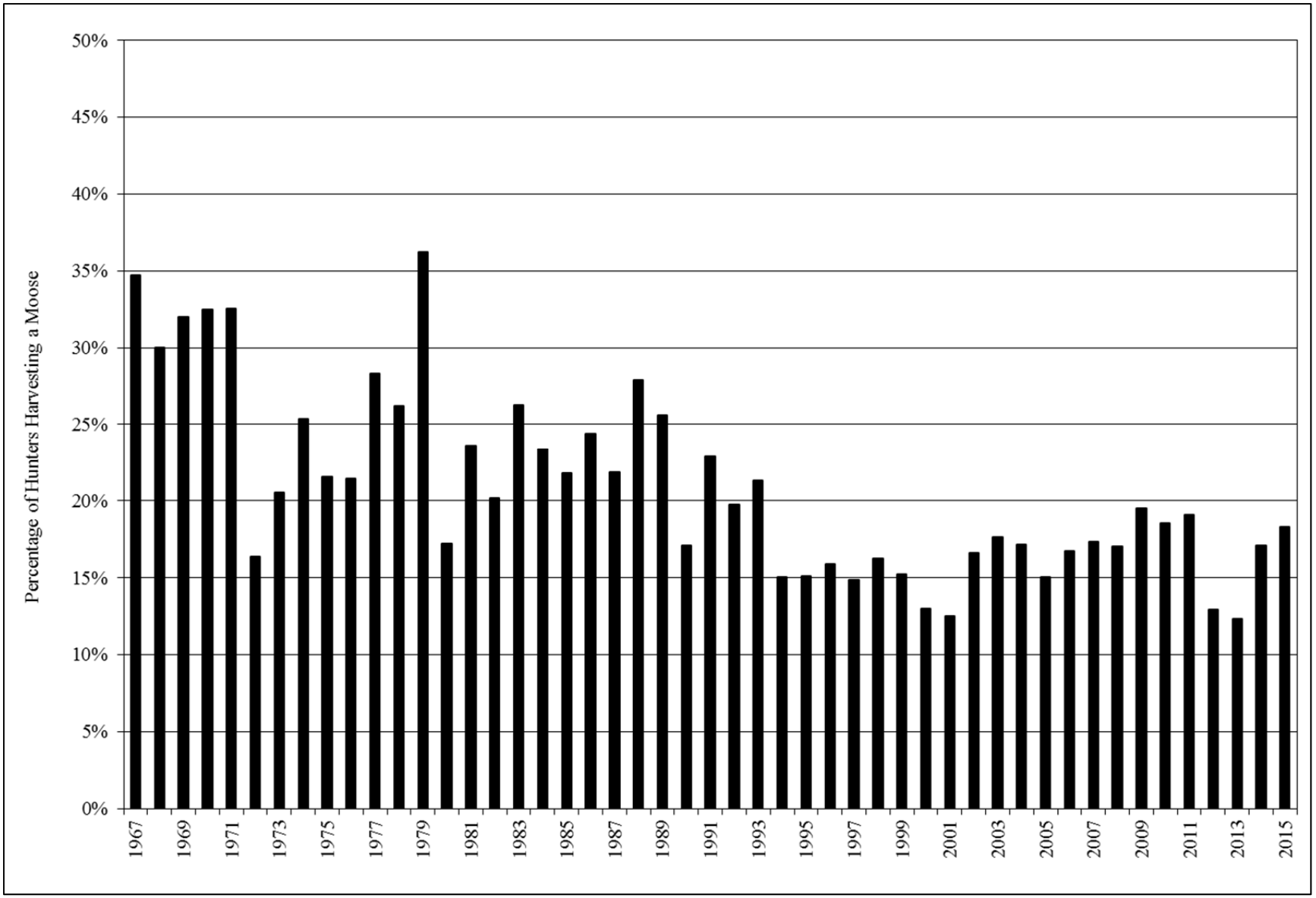

Figure 14.–Hunter success rates, Alaska resident hunters, GMU 13 moose, 1967–2015.

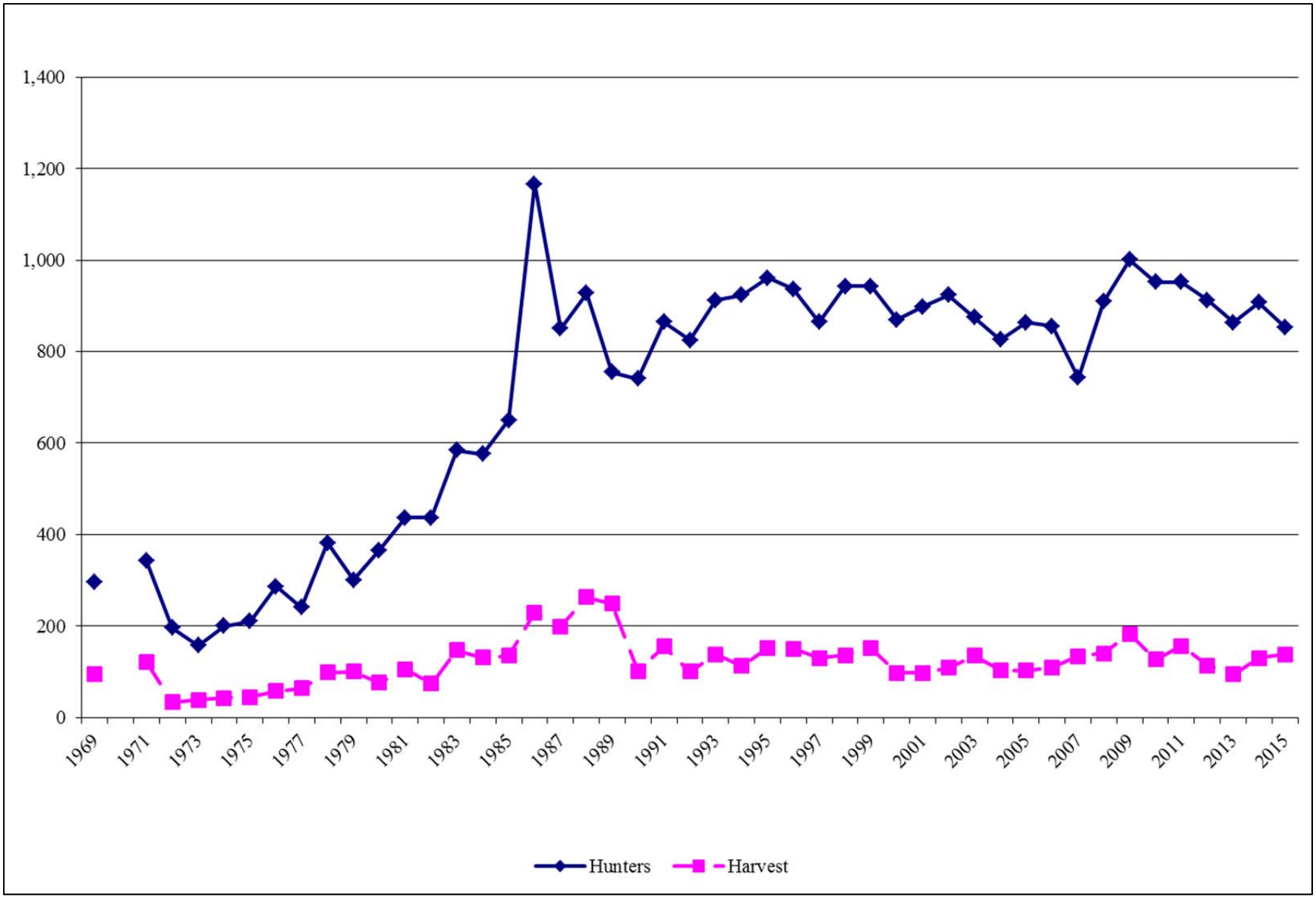

Figure 15.–Number of local resident hunters of moose in GMU 13 and number of moose harvested, all hunts, 1969–2015.

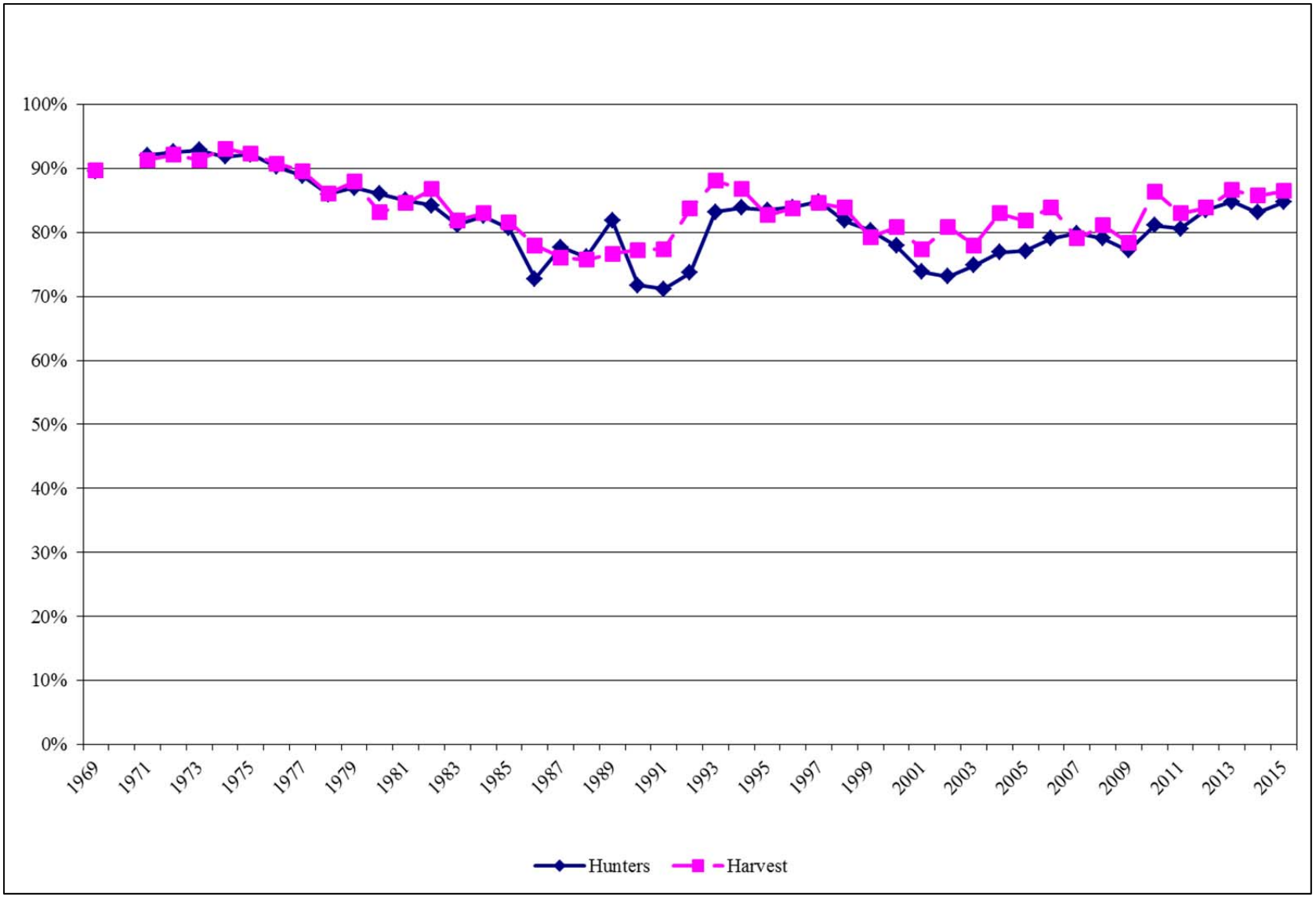

Figure 16.–Percentage of moose hunters in GMU 13 who are nonlocal residents and percentage of total moose harvested by nonlocal hunters, all hunts, 1969–2015.

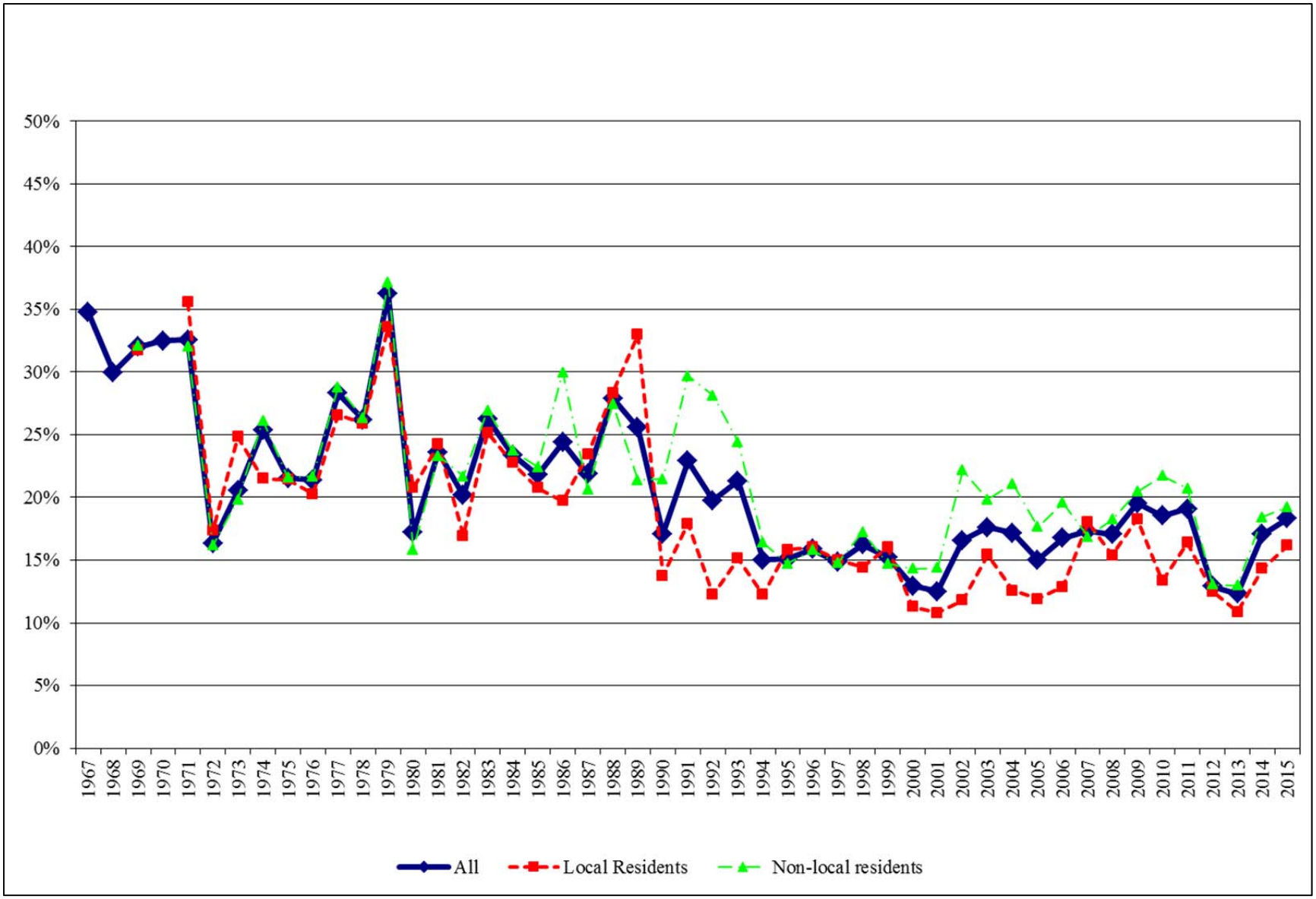

Figure 17.–Success rates, GMU 13 moose hunters, by area of residence, 1967–2015.

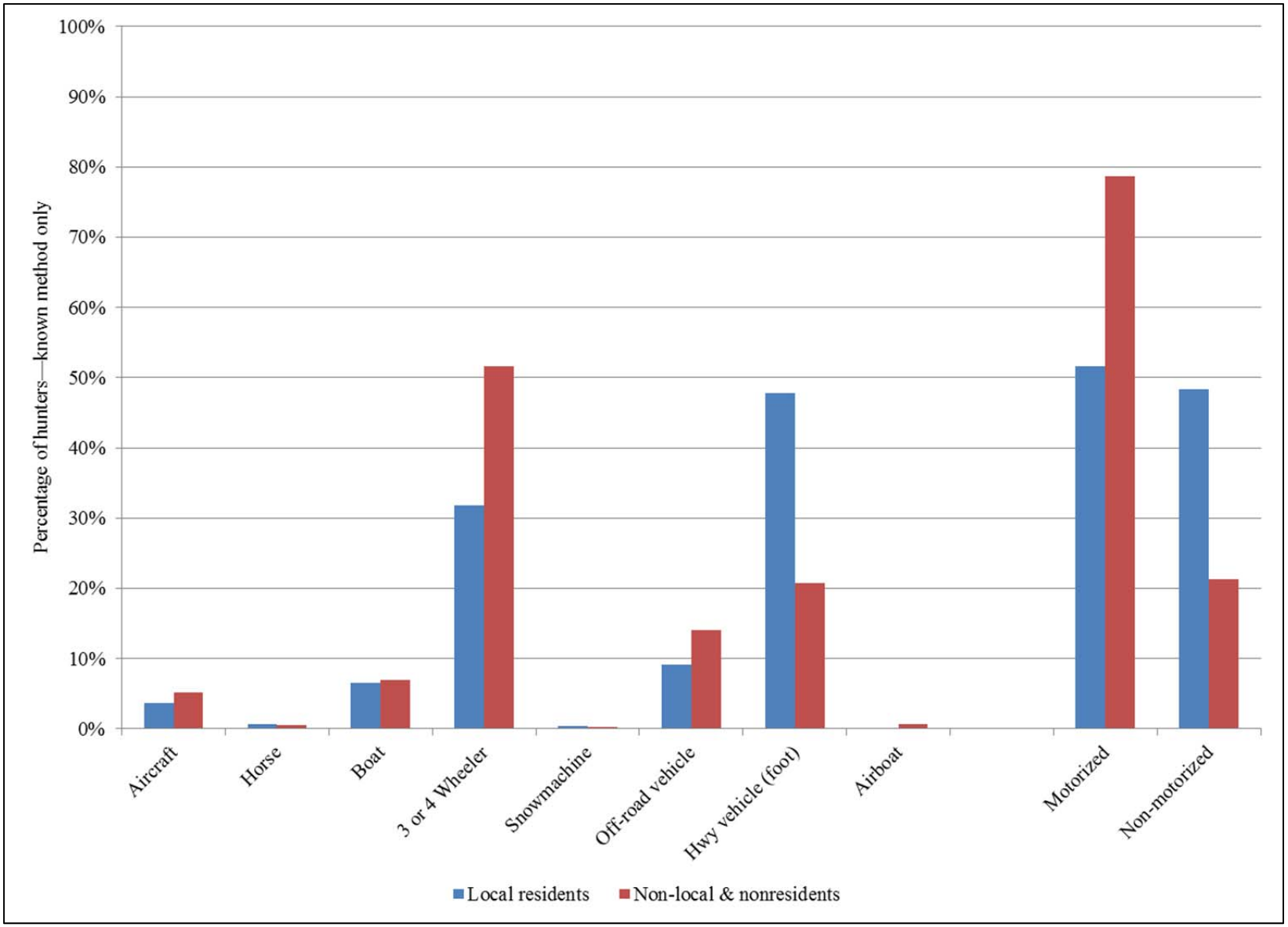

Figure 18.–Percentage of hunters by transport type, GMU 13 moose, 2009–2016 (known method only).

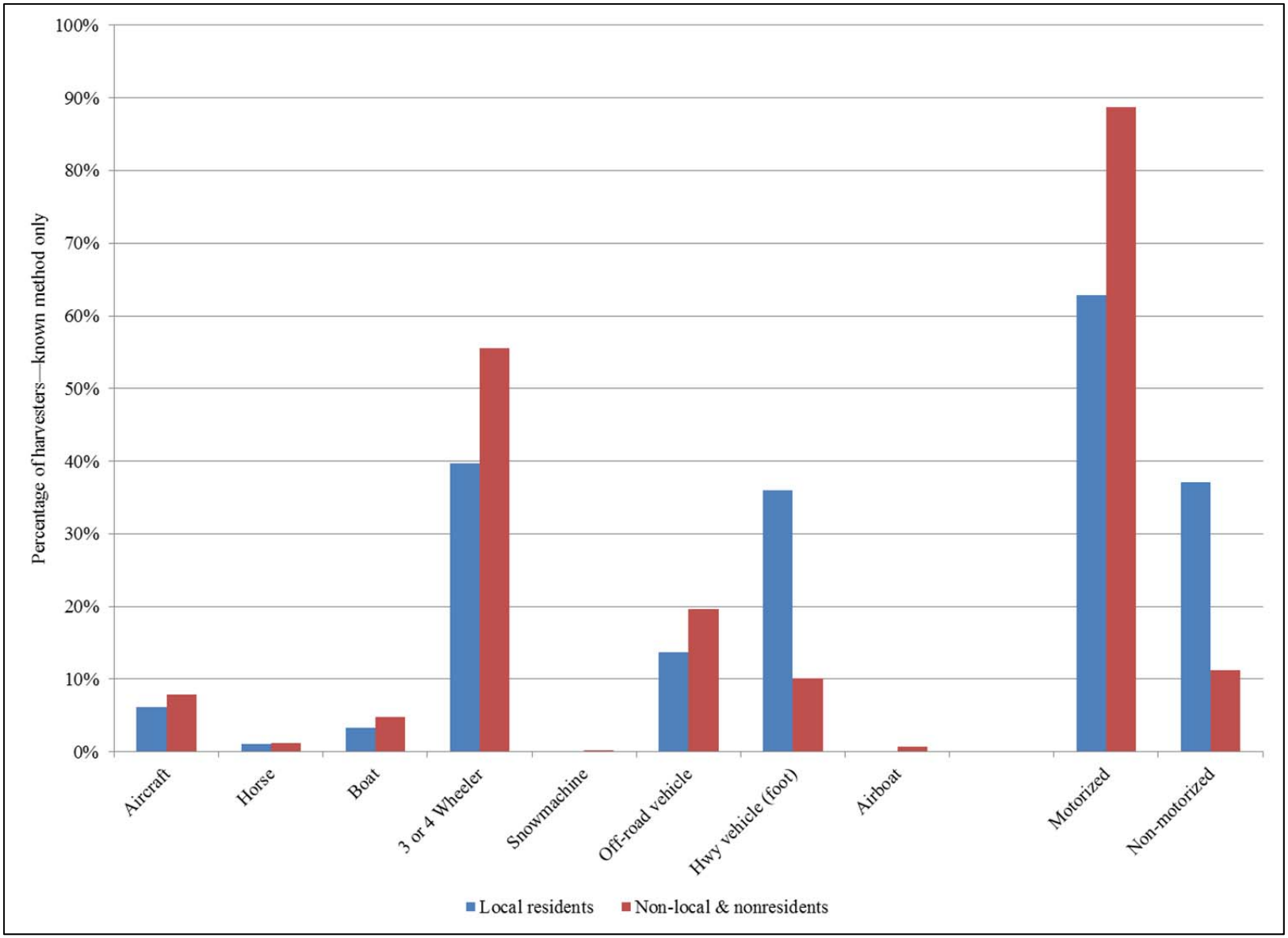

Figure 19.–Percentage of successful hunters by transport type, GMU 13 moose, 2009–2016 (known method only).

APPENDIX A:
MOOSE SEASONS AND BAG LIMITS IN GMU 13, SOUTHCENTRAL ALASKA

Appendix A.–Moose Seasons and Bag Limits in GMU 13, Southcentral Alaska.

Year	Subunit	Season dates	Bag limit
1960–64	Unit 13	Aug. 20–Sept. 30 Nov. 1–Nov. 30	1 moose; antlerless moose may be taken only from Sept. 24–Sept. 30.
1965	Unit 13	Aug. 20–Sept. 30 Nov. 1–Nov. 30	1 bull.
1966	Unit 13	Aug. 20–Sept. 30 Nov. 1–Nov. 30	1 moose: antlerless moose may be taken only from Sept. 29–Sept. 30.
1967, 68	Unit 13	Aug. 20–Sept. 30 Nov. 1–Nov. 20	1 moose; antlerless moose by be taken only from Sept. 28–Sept. 30 except Unit 13A East was closed to antlerless harvests.
1969	Unit 13	Aug. 20–Sept. 30 Nov. 1–Nov. 20	1 bull.
1970, 71	Unit 13A,D	Aug. 20–Sept. 20 Nov. 1–Nov. 20	1 bull.
	Unit 13B,C	Aug. 20–Sept. 20 Nov. 1–Nov. 20	1 moose. 400 antlerless permits for Unit 13B. 300 antlerless permits for Unit 13C.
1972	Unit 13A	Aug. 20–Sept. 20 Nov. 1–Nov. 20	1 bull.
	Unit 13B,C,D,E	Aug. 20–Sept. 20 Nov. 1–Nov. 20	1 bull.
1973	Unit 13A,B,D,E	Aug. 20–Sept. 10 Nov. 1–Nov. 10	1 bull.
	Unit 13C	No open season.	
1974	Unit 13	Aug. 20–Sept. 20	1 bull.
1975–79	Unit 13	Sept. 1–Sept. 20	1 bull.
1980–82	Unit 13	Sept. 1–Sept. 20	1 bull having antler spread of at least 36" or 3 brow tines on at least one side.
1983	Unit 13	Sept. 1–Sept. 20	*Sport hunters:* 1 bull having antler spread of at least 36" or 3 brow tines on at least one side. *Subsistence hunters:* 1 bull by drawing permit only. 100 permits will be issued.

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Year	Subunit	Season dates	Bag limit
1984	Unit 13 except portions of Unit 13B & E	Sept. 1–Sept. 20	*Sport hunters:* 1 bull having antler spread of at least 36" or 3 brow tines on at least one side. *Subsistence hunters:* 1 bull by drawing permit only. 100 permits will be issued.
	Unit 13B & E from Maclaren River to Nenana River	Sept. 1–Sept. 20	*Sport hunters:* 1 bull having a spiked or forked antler on at least one side.
	Unit 13A West	Sept. 1–Sept. 20	*Sport hunters:* 1 bull having a spiked or forked antler on at least one side.
1985	Unit 13A West	Sept. 1–Sept 20	*All hunters:* 1 bull with a spike or forked spike or forked antler on at least one side.
	Remainder of Unit 13	Sept. 1–Sept. 20	*Subsistence hunters:* 1 bull by Tier II permit; 200 permits will be issued. *Other hunters:* 1 bull with antler spread of at least 36" or with at least 3 brow tines on at least one of the antlers.
1986	Unit 13 except Unit 13A West	Sept. 1–Sept. 20	*Sport hunters:* 1 bull having antler spread of at least 36" or 3 brow tines on at least one side. *Subsistence hunters:* 1 bull by registration permit only. Unlimited numbers of permits will be issued.
	Unit 13A West	Sept. 1–Sept. 20	*Sport hunters:* 1 bull having a spiked or forked antler on at least one side.
1987	Unit 13 except Unit 13A West	Sept. 1–Sept. 20	*Sport hunters:* 1 bull having a spiked or forked antler on at least one side.
		Aug. 25–Sept. 20	*Subsistence hunters:* 1 bull by registration permit only. Only one permit will be issued per household.
	Unit 13A West	Sept. 1–Sept. 20	*Sport hunters:* 1 bull having a spiked or forked antler on at least one side. However, 1 bull with any size antlers may be taken by drawing permit only; 100 permits will be issued.
1988	Unit 13 except Unit 13A West	Aug. 25–Sept. 20	*Subsistence hunters:* One moose; however bulls may be taken by registration permit only; only one permit will be issued per household. Cows may be taken in Unit 13E by drawing permit only. Unit 13 permits will be issued. The taking of cows accompanied by calves is prohibited.

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Year	Subunit	Season dates	Bag limit
1988 (cont.)		Sept. 1–Sept. 20	*Resident and nonresident hunters:* One bull with 36 inch antlers; however, in Unit 13E, one cow may be taken by drawing permit only; 12 permits will be issued to Alaskan residents only. The taking of cows accompanied by calves is prohibited.
	Unit 13A West	Sept. 1–Sept. 20	*Subsistence hunters:* one moose; however bulls must have a spike fork antler, cows may be taken by drawing permit only; 25 permits will be issued. The taking of cows accompanied by calves is prohibited.
		Sept. 1–Sept. 20	*Resident and nonresident hunters:* One moose; bulls must have a spike-fork antler, cows may be taken by drawing permit only, 25 permits will be issued. The taking of cows accompanied by calves is prohibited.
1989	Unit 13 except Unit 13A West	Aug. 25–Sept. 20	*Subsistence hunters:* One moose; however bulls may be taken by registration permit only; only one permit will be issued per household. Antlerless moose hunts were canceled by E.O.
		Sept. 1–Sept. 20	*Resident and nonresident hunters:* One moose; bulls must have 36" antlers.
	Unit 13A West	Aug. 25–Sept. 20	*Subsistence hunters:* One moose; however bulls may be taken by registration permit only; only one permit will be issued per household. Antlerless moose hunts were canceled by E.O.
		Sept. 1–Sept. 20	*Resident and nonresident hunters:* One moose; bulls must have a spike-fork antler; however, up to 300 drawing permits will be issued for bull moose with any size antlers. Antlerless moose hunts were cancelled by E.O.
1990	Unit 13 except Unit 13A West	Sept. 5–Sept. 9 Dec. 1–Dec. 31	*Alaskan residents:* One bull with 36" antlers; the allowable harvest for all of Unit 13 is 800 bulls; up to 400 may be taken byTier II permit only during the winter hunt. The winter allocation was reduced from 400 to 75 by subsequent emergency order. *Nonresidents:* No open season.
	Unit 13A West	Sept. 5–Sept. 9 Dec. 1–Dec. 31	*Alaskan residents:* One bull with spike or fork antlers;during the winter hunt bulls may be taken byTier II permit only. *Nonresidents:* No open season.
	Unit 13	Aug. 25–Sept. 20	*Federal:* 1 bull moose by Federal registration permit only; Only 1 permit will be issued per household.

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Appendix A.–Page 4 of 11.

Year	Subunit	Season dates	Bag limit
1991	Unit 13 except Unit 13A West	Sept. 5–Sept. 11	*Alaskan residents:* One bull with 36" antlers. *Nonresidents:* No open season.
	Unit 13A, that portion northwest of the Black River	Sept. 5–Sept. 11	*Alaskan residents:* One bull with spike-fork or 50" antlers. *Nonresidents:* No open season.
	Unit 13A, that portion west of the Lake Louise Road, Lake. Louise, Lake Susitna, Tyone River, and southeast of the Black River	Sept. 5–Sept. 11	*Alaskan residents:* One bull with spike-fork antlers. *Nonresidents:* No open season.
	Unit 13	Aug. 25–Sept. 20	*Federal:* 1 bull moose by federal registration permit only; Only 1 permit will be issued per household.
1992	Unit 13A, that portion northwest of the Black River.	Sept. 1–Sept. 14	*Alaskan residents:* One bull with spike-fork or 50"antlers per household. The use of any motorized vehicle, including aircraft but excepting boats, for hunting moose or for access to hunt moose from Aug. 26–Sept. 7 is prohibited, including transportation of moose hunters or parts of moose; however, this does not apply to a motorized vehicle on a State or borough–maintained highway/railroad. *Nonresidents:* No open season.
	Unit 13A, that portion west of the Lake Louise Road, Lake Susitna, Tyone River, and southeast of Black River.	Sept. 1–Sept. 14	*Alaskan residents:* One bull with spike-fork antlers per household. The use of any motorized vehicle, including aircraft, but excepting boats, for hunting moose or for access to hunt moose from Aug. 26–Sept. 7 is prohibited, including transportation of moose hunters or parts of moose; however this does not apply to a motorized vehicle on a State or borough maintained highway/railroad. *Nonresidents:* No open season.
	Remainder of Unit 13	Sept. 1–Sept. 14	*Alaskan residents:* One bull with 36" antlers per household. The use of any motorized vehicle, including aircraft but excepting boats, for hunting moose or for access to hunt moose from Aug. 25–Sept.7 is prohibited, including transportation of moose hunters or parts of moose; however, this does not apply to a motorized vehicle on a State or borough- maintained highway/road. *Nonresidents:* No open season.

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Appendix A.–Page 4 of 11.

Year	Subunit	Season dates	Bag limit
1992 (cont.)	Unit 13	Aug. 25–Sept. 20	*Federal:* 1 bull moose by Federal registration permit only; Only 1 permit will be issued per household.
1993	Unit 13A, that portion between Kosina Creek and the Oshetna River	Aug. 20–Sept. 20 Sept. 1–Sept. 15	*Alaskan residents and nonresidents:* One bull with spike-fork or 50" antlers or antlers with 3 or more brow tines on one side; however, one cow moose may be taken by drawing permit only during Sept. 1–Sept. 15; up to 25 permits will be issued.
	Unit 13A, that portion between the Oshetna River, and the Little Nelchina River, and west of the Lake Louise Road, Lake Susitna, and Tyone River	Aug. 20–Sept. 20 Sept. 1–Sept. 15	*Alaskan residents and nonresidents:* One bull with spike-fork or 50" antlers or antlers with 3 or more brow tines on one side; however, one cow moose may be taken by drawing permit only during Sept. 1–Sept. 15; up to 25 permits will be issued.
	Unit 13A, that portion between the Little Nelchina River,and the Chickaloon River, and that portion within the Talkeetna River drainage south of Aspen Cr.	Aug. 20–Sept. 20 Sept. 1–Sept. 15	*Alaskan residents and nonresidents:* One bull with spike-fork or 50" antlers or antlers with 3 or more brow tines on one side; however, one cow moose may be taken by drawing permit only during Sept. 1–Sept. 15; up to 25 permits will be issued.
	Remainder of Unit 13	Aug. 20–Sept. 20	*Alaskan residents and nonresidents:* One bull with spike-fork antlers or 50" antlers or antlers with 3 or more brow tines on one side.
	Unit 13	Aug. 25–Sept. 20	*Federal:* 1 bull moose by Federal registration permit only; Only 1 permit will be issued per household.
1994	Unit 13A, that portion between Kosina Creek and the Oshetna River	Aug. 20–Sept. 20 Sept. 1–Sept. 15	*Alaskan residents and nonresidents:* One bull with spike-fork or 50" antlers or antlers with 3 or more brow tines on one side; however, one cow moose may be taken by drawing permit only during Sept. 1–Sept. 15; up to 25 permits will be issued.
	Unit 13A, that portion between the Oshetna River, and the Little Nelchina River, and west of the Lake Louise Road, Lake Susitna, and Tyone River	Aug. 20–Sept. 20 Sept. 1–Sept. 15	*Alaskan residents and nonresidents:* One bull with spike-fork or 50" antlers or antlers with 3 or more brow tines on one side; however, one cow moose may be taken by drawing permit only during Sept. 1–Sept. 15; up to 25 permits will be issued.

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Year	Subunit	Season dates	Bag limit
1994 (cont.)	Unit 13A, that portion between the Little Nelchina River,and the Chickaloon River, and that portion within the Talkeetna River drainage south of Aspen Cr.	Aug. 20–Sept. 20	*Alaskan residents and nonresidents:* One bull with spike-fork or 50" antlers or antlers with 3 or more brow tines on one side; however, one cow moose may be taken by drawing permit only during Sept. 1–Sept. 15; up to 25 permits will be issued.
	Remainder of Unit 13	Aug. 20–Sept. 20	*Alaskan residents and nonresidents:* One bull with spike-fork antlers or 50" antlers or antlers with 3 or more brow tines on one side.
	Unit 13	Aug. 25–Sept. 20	*Federal:* 1 bull moose by Federal registration permit only; Only 1 permit will be issued per household.
1995	Unit 13	Aug. 1–Aug. 15	*Alaskan residents:* One bull by Tier II permit only (150 permits).
		Aug. 20–Sept. 20	*Alaskan residents and nonresidents:* One bull with spike-fork or 50" antlers or antlers with 3 or more brow tines on at least one side.
	Unit 13	Aug. 1–Sept. 20	*Federal:* 1 bull moose by Federal registration permit only; Only 1 permit will be issued per household.
1996	Unit 13	Aug. 1–Aug. 15	*Alaskan residents:* One bull by Tier II permit only (150 permits).
		Aug. 20–Sept. 20	*Alaskan residents and nonresidents:* One bull with spike-fork or 50" antlers or antlers with 3 or more brow tines on at least one side.
	Unit 13	Aug. 1–Sept. 20	*Federal:* One bull moose by Federal registration permit only; Only 1 permit will be issued per household.
1997	Unit 13	Aug. 1–Aug. 19	*Alaskan residents:* One bull by Tier II permit only (150 permits).
		Aug. 20–Sept. 20	*Alaskan residents and nonresidents:* One bull with spike-fork or 50" antlers or antlers with 3 or more brow tines on at least one side.
	Unit 13	Aug. 1–Sept. 20	*Federal:* One bull moose by Federal registration permit only; Only 1 permit will be issued per household.
1998	Unit 13	Aug. 1–Aug. 19	*Alaskan residents:* One bull by Tier II permit only

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Year	Subunit	Season dates	Bag limit
1998 (cont.)		Aug. 20–Sept. 20	*Alaskan residents and nonresidents:* One bull with spike-fork or 50" antlers or antlers with 3 or more brow tines on at least one side.
	Unit 13	Aug. 1–Sept. 20	*Federal:* One bull moose by Federal registration permit only; Only 1 permit will be issued per household.
1999	Unit 13	Aug. 15–Aug. 31	*Alaskan residents:* One bull by Tier II permit only (150 permits)
		Sept.1–Sept. 20	*Alaskan residents and nonresidents:* One bull with spike-fork or 50" antlers or antlers with 3 or more brow tines on at least one side.
	Unit 13	Aug. 1–Sept. 20	*Federal:* One bull moose by Federal registration permit only; Only 1 permit will be issued per household.
2000	Unit 13A, 13B, and 13E	Aug. 15–Aug. 31	*Alaskan residents:* One bull by Tier II permit only (150 permits).
		Sept. 1–Sept.15	*Alaskan residents and nonresidents:* One bull with spike-fork or 50" antlers or antlers with 3 or more brow tines on at least one side.
	Unit 13C and 13D	Aug. 15–Aug. 31	*Alaskan residents:* One bull by Tier II permit only (150 permits).
	Unit 13C and 13D	Sept. 1–Sept.20	*Alaskan residents and nonresidents:* One bull with spike-fork or 50" antlers or antlers with 3 or more brow tines on at least one side.
	Unit 13	Aug. 1–Sept. 20	*Federal:* One bull moose by Federal registration permit only; Only 1 permit will be issued per household.
2001	Unit 13	Aug. 15–Aug. 31	*Alaskan residents:* One bull by Tier II permit only (150 permits)
		Sept. 1–Sept.20	*Alaskan residents and nonresidents:* One bull with spike-fork or 50" antlers or antlers with 4 or more brow tines on at least one side.
	Unit 13	Aug. 1–Sept. 20	*Federal:* One bull moose by Federal registration permit only; Only 1 permit will be issued per household.
2002	Unit 13	Aug. 15–Aug. 31	*Alaskan residents:* One bull by Tier II permit only (150 permits).

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Year	Subunit	Season dates	Bag limit
2002 (cont.)		Sept. 1–Sept.20	*Alaskan residents:* One bull with spike-fork or 50" antlers or antlers with 4 or more brow tines on at least one side. *Nonresidents:* No open season.
	Unit 13	Aug. 1–Sept. 20	*Federal:* One bull moose by Federal registration permit only; Only 1 permit will be issued per household.
2003	Unit 13	Aug. 15–Aug. 31	*Alaskan residents:* One bull by Tier II permit only (150 permits).
		Sept. 1–Sept.20	*Alaskan residents:* One bull with spike-fork or 50" antlers or antlers with 4 or more brow tines on at least one side. *Nonresidents:* No open season.
	Unit 13	Aug. 1–Sept. 20	*Federal:* One bull moose by Federal registration permit only; Only 1 permit will be issued per household.
2004	Unit 13	Aug. 15–Aug. 31	*Alaskan residents:* One bull by Tier II permit only (150 permits).
		Sept. 1–Sept.20	*Alaskan residents:* One bull with spike-fork or 50" antlers or antlers with 4 or more brow tines on at least one side. *Nonresidents:* No open season.
	Unit 13	Aug. 1–Sept. 20	*Federal:* One bull moose by Federal registration permit only.
2005	Unit 13	Aug. 15–Aug. 31	*Alaskan residents:* One bull by Tier II permit only (150 permits).
		Sept. 1–Sept.20	*Alaskan residents:* One bull with spike-fork or 50" antlers or antlers with 4 or more brow tines on at least one side. *Nonresidents:* No open season.
	Unit 13	Aug. 1–Sept. 20	*Federal:* One bull moose by Federal registration permit only.
2006	Unit 13	Aug. 15–Aug. 31	*Alaskan residents:* One bull by Tier II permit only (150 permits).
		Sept. 1–Sept.20	*Alaskan residents:* One bull with spike-fork or 50" antlers or antlers with 4 or more brow tines on at least one side. *Nonresidents:* No open season.

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Year	Subunit	Season dates	Bag limit
2006 (cont.)	Unit 13	Aug. 1–Sept. 20	*Federal:* One bull moose by Federal registration permit only.
2007	Unit 13	Aug. 15–Aug. 31	*Alaskan residents:* One bull by Tier II permit only (150 permits).
		Sept. 1–Sept.20	*Alaskan residents:* One bull with spike-fork or 50" antlers or antlers with 4 or more brow tines on at least one side. *Nonresidents:* No open season.
	Unit 13	Aug. 1–Sept. 20	*Federal:* One bull moose by Federal registration permit only.
2008	Unit 13	Aug. 15–Aug. 31	*Alaskan residents:* One bull by Tier II permit only (150 permits).
		Sept. 1–Sept.20	*Alaskan residents:* One bull with spike-fork or 50" antlers or antlers with 4 or more brow tines on at least one side. *Nonresidents:* No open season.
	Unit 13	Aug. 1–Sept. 20	*Federal:* One bull moose by Federal registration permit only.
2009	Unit 13	Aug. 10– Sept. 20	*Alaskan residents:* One bull by Ahtna Community Harvest Hunt.
		Sept. 1–Sept.20	*Alaskan residents:* One bull with spike-fork or 50" antlers or antlers with 4 or more brow tines on at least one side.
	Unit 13A, B & C	Sept. 1–Sept.20	*Alaskan residents:* One bull by 5 Drawing Hunts—160 total permits
	Unit 13	Sept. 1–Sept.20	*Nonresidents:* One bull with 50" antlers or antlers with 4 or more brow tines on at least one side. 5 Drawing Hunts—50 total permits.
	Unit 13	Aug. 1–Sept. 20	*Federal:* One bull moose by Federal registration permit only
2010	Unit 13	Aug. 15–Aug. 25	*Alaskan residents:* One bull with spike-fork or 50" antlers or antlers with 3 or more brow tines on at least one side.
		Sept. 1–Sept.20	*Alaskan residents:* One bull with spike-fork or 50" antlers or antlers with 4 or more brow tines on at least one side.

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Year	Subunit	Season dates	Bag limit
2010 (cont.)	Unit 13A, B & C	Sept. 1–Sept.20	*Alaskan residents:* One bull by 5 Drawing Hunts—325 total permits.
	Unit 13	Sept. 1–Sept.20	*Nonresidents:* One bull with 50" antlers or antlers with 4 or more brow tines on at least one side. 5 Drawing Hunts—110 total permits.
	Unit 13	Aug. 1–Sept. 20	*Federal:* One bull moose by Federal registration permit only.
2011	Unit 13	Aug. 10– Sept. 20	*Alaskan residents:* One bull by Community Subsistence Harvest Hunt.
		Sept. 1–Sept.20	*Alaska residents:* One bull with spike-fork or 50" antlers or antlers with 4 or more brow tines on at least one side.
	Unit 13A, B & C	Sept. 1–Sept.20	*Alaska residents:* One bull by 5 Drawing Hunts—225 total permits.
	Unit 13	Sept. 1–Sept.20	*Nonresidents:* One bull with 50" antlers or antlers with 4 or more brow tines on at least one side. 5 Drawing Hunts—65 total permits.
	Unit 13	Aug. 1–Sept. 20	*Federal:* One bull moose by Federal registration permit only.
2012	Unit 13	Aug. 10– Sept. 20	*Alaskan residents:* One bull by Community Subsistence Harvest Hunt.
		Sept. 1–Sept.20	*Alaskan residents:* One bull with spike-fork or 50" antlers or antlers with 4 or more brow tines on at least one side.
	Unit 13A	Sept. 1–Sept.20	*Alaskan residents:* One antlerless moose by Drawing—10 total permits.
	Unit 13A, B & C	Sept. 1–Sept.20	*Alaskan residents:* One bull by 5 Drawing Hunts—104 total permits.
	Unit 13	Sept. 1–Sept.20	*Nonresidents:* One bull with 50" antlers or antlers with 4 or more brow tines on at least one side. 5 Drawing Hunts—105 total permits.
	Unit 13	Aug. 1–Sept. 20	*Federal:* One bull moose by Federal registration permit only.
2013	Unit 13	Aug. 10– Sept. 20	*Alaskan residents:* One bull by Community Subsistence Harvest Hunt.

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Year	Subunit	Season dates	Bag limit
		Sept. 1–Sept.20	*Alaskan residents:* One bull with spike-fork or 50" antlers or antlers with 4 or more brow tines on at least one side.
	Unit 13A	Sept. 1–Sept.20	*Alaskan residents:* One antlerless moose by Drawing—10 total permits.
	Unit 13A, B & C	Sept. 1–Sept.20	*Alaskan residents:* One bull by 5 Drawing Hunts—225 total permits.
	Unit 13	Sept. 1–Sept.20	*Nonresidents:* One bull with 50" antlers or antlers with 4 or more brow tines on at least one side. 5 Drawing Hunts—105 total permits.
	Unit 13	Aug. 1–Sept. 20	*Federal:* One bull moose by Federal registration permit only.
2014	Unit 13	Aug. 10– Sept. 20	*Alaskan residents:* One bull by Community Subsistence Harvest Hunt.
	Unit 13B,C	Dec. 1– Dec. 31	*Alaskan residents:* One bull by Community Subsistence Harvest Hunt.
		Sept. 1–Sept.20	*Alaskan residents:* One bull with spike-fork or 50" antlers or antlers with 4 or more brow tines on at least one side.
	Unit 13A	Sept. 1–Sept.20	*Alaskan residents:* One antlerless moose by Drawing—10 total permits.
	Unit 13B,C	Dec. 1– Dec. 31	*Alaskan residents:* One bull by Registration permit.
	Unit 13	Sept. 1–Sept.20	*Nonresidents:* One bull with 50" antlers or antlers with 4 or more brow tines on at least one side. 5 Drawing Hunts—115 total permits
	Unit 13	Aug. 1–Sept. 20	*Federal:* One bull moose by Federal registration permit only.
2015	Unit 13	Aug. 10– Sept. 20	*Alaskan residents:* One bull by Community Subsistence Harvest Hunt.
		Sept. 1–Sept.20	*Alaskan residents:* One bull with spike-fork or 50" antlers or antlers with 4 or more brow tines on at least one side.
	Unit 13A	Oct. 1–Oct.31 Mar. 1–Mar. 31	*Alaskan residents:* One antlerless moose by Drawing—10 total permits.
	Unit 13	Sept. 1–Sept.20	*Nonresidents:* One bull with 50" antlers or antlers with 4 or more brow tines on at least one side. 5 Drawing Hunts—115 total permits.

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Year	Subunit	Season dates	Bag limit
2015 (cont.)	Unit 13	Aug. 1–Sept. 20	*Federal:* One bull moose by Federal registration permit only.
2016	Unit 13	Aug. 20– Sept. 20	*Alaskan residents:* One bull by Community Subsistence Harvest Hunt.
		Sept. 1–Sept. 20	*Alaska residents:* One bull with spike-fork or 50" antlers or antlers with 4 or more brow tines on at least one side.
	Unit 13A	Oct. 1–Oct.31 Mar. 1–Mar. 31	*Alaska residents:* One antlerless moose by Drawing—10 total permits.
	Unit 13	Sept. 1–Sept.20	*Alaska residents:* One bull by Drawing—5 total permits.
	Unit 13	Sept. 1–Sept.20	*Nonresidents:* One bull with 50" antlers or antlers with 4 or more brow tines on at least one side. 5 Drawing Hunts—115 total permits.
	Unit 13	Aug. 1–Sept. 20	*Federal:* One bull moose by Federal registration permit only.

APPENDIX B:
TIER II CHRONOLOGY

TIER II CHRONOLOGY

With addenda concerning community subsistence hunts in GMU 13, 2009–2016

Alaska Department of Fish and Game,

Division of Subsistence, February 2017 (updated)

1978

The Alaska legislature passed the first state subsistence law, which, among other provisions, listed three Tier II criteria for allocating harvest opportunity if there is not sufficient fish or game for subsistence.

June 1985

The Alaska Board of Game developed the first Tier II system, in response to *Gene Madison et al. v. Alaska Department of Fish and Game et al*. (1985) which opened subsistence hunting to all state residents. The board authorized 54 new Tier II hunts. The board developed a permit and scoring system for ranking applicants and awarding permits. The system was used for a single season (1985–86).

1986

The board repealed the Tier II regulations created in 1985, after the Alaska legislature passed subsistence legislation limiting subsistence hunting to rural residents.

July 1990

The board held an emergency session because of *McDowell et al. v. State of Alaska Department of Fish and Game et al.* (1989) ("rural" subsistence eligibility ruled to be unconstitutional; all state residents become subsistence users). The board authorized 15 Tier II hunts for 1990–91. The board developed a Tier II permit scoring system for the 1990–91 season.

October 1990

A report on the implementation of the 1990–91 Tier II system was presented to the Joint Boards of Fisheries and Game at their regular fall meeting (October 1990). No actions were taken.

March 1991

The board reviewed the Tier II system created the previous year. The board revised the Tier II questions and point scoring system. The board replaced the "long form" (used in 1990–91) with a "short form" (used from 1991–92 until 1995–96, with a few modifications).

November 1991

A report on the implementation of the 1991–92 Tier II system was presented to the Board of Game at their regular fall meeting (November 1991). No actions were taken.

March 1992

The board reviewed the Tier II system. The board changed the way that the proximity question is scored, creating an "absolute distance" scoring procedure to replace the "relative distance" scoring procedure. This was done to address a State of Alaska Department of Law concern that relative distance procedures may nullify the points for the proximity criterion if there is any far-distant Tier II applicant (*Sorenson vs. State*).

April 1993

A report on the Tier II system was presented to the board. The board reviewed the Tier II system and made the following changes: 1) slight wording changes to make regulations consistent with state subsistence law revisions made in spring 1993; 2) minor wording changes on question 1, "How many years have you or the longest hunting member of your household hunted or eaten meat from the game population for the hunt you have applied for..."; 3) minor wording changes on question 3, "How much time do you usually spend hunting, fishing, and gathering wild foods in the hunt area boundary during the year..."; 4) ADF&G is authorized to calculate the straight-line distance from a person's domicile to the hunt area boundary, rather than have the respondent estimate the distance; 5) the number of Tier II caribou permits are limited to three permits per household.

May 1995

In *Kenaitze Indian Tribe v. State of Alaska et al*. (1995), the Alaska Supreme Court ruled that proximity of an individual's domicile cannot be used as a Tier II criterion. This reduced the number of Tier II criteria from three to two. The board instructed ADF&G to prepare options for revising the Tier II scoring system in October.

June 1995

The Tier II regulations were repealed June 30, 1995, by a sunset provision requiring the board to revisit the Tier II system.

October 1995

The board had a work session in Anchorage. The Tier II scoring system was discussed.

January 1996

The board adopted regulations that substantially revised the Tier II point scoring system, replacing "subjective" questions with more "objective" questions and more scoring measures using verifiable data sources. The new point system had five questions:

Criterion One:

1. Number of years of use of the game population by the applicant (measuring the length of dependency of applicant on the game population – up to 50 points);
2. Number of years of use of the game population by a household member (measuring length of dependency of an applicant's household member on the game population – up to 10 points);

Criterion Two:

3. Percent of an applicant's game harvests from the Tier II population (measuring the relative availability of alternative sources of game to the applicant – up to 20 points);
4. Relative cost of purchased food to applicant (measuring the availability of food for purchase to the applicant – up to 10 points); and
5. Relative cost of gasoline to applicant (measuring the ability of a subsistence user to obtain food if subsistence use is restricted or eliminated – up to 10 points).

The revised Tier II system was used for the 1996–97 hunting season.

March 1996

The board heard an update on the Tier II scoring system at its Fairbanks meeting. A Tier II appeals process was established in regulation.

March 1997

The board heard a report from ADF&G on the implementation and performance of the Tier II points scoring system adopted in January 1996. No changes were made in the system.

March 2001

The board heard an updated report from ADF&G on the implementation and performance of the Tier II process. The board decided to request public proposals concerning the scoring system for consideration at the January 2002 statewide meeting.

January 2002

The board heard reports from ADF&G on the Tier II process and deliberated on public proposals and staff recommendations concerning the Tier II point system. The following changes were made:

1. Changed from 30 to 50 the maximum number of years of use of the Tier II population used to award points for the two questions on customary and direct dependence; one point per year (up to 50 points) is awarded for Question 14 and 0.2 point (one-fifth of a point) is awarded for Question 15 (up to 10 points).
2. Removed the 150-mile radius cap on household harvests to account for harvests over a wider area (Question 16, alternative sources of food) but retained the 150-mile radius cap for the calculation of the community cap for this question.
3. Modified Question 16 to ask applicants to report the number of big game animals by species harvested over the past 5 years, rather than ask the applicant to calculate the percentage of their total big game harvest that is from the Tier II population. ADF&G now makes this calculation, removing a source of inadvertent errors by applicants and requiring more verifiable information.
4. Adjusted the Tier II scoring system for muskoxen hunts on the Seward Peninsula; suspended for 10 years in inclusion of hunt history in the scoring formula for GMUs 22 and 23 muskoxen hunts.

June 17, 2003

In an emergency teleconference meeting, the board adopted an emergency regulation in response to an opinion issued by the Supreme Court of Alaska in *Manning v. State of Alaska* (2007) that 5 AAC 92.070(b)(1) (Question 16 on the Tier II application that measures the availability of alternative sources of food) violated equal protection standards. The emergency regulation (in effect for 120 days) repealed 5 AAC 92.070(b) (1) but kept all other scoring factors the same. This meant that the maximum possible score for Tier II applicants for the 2003–04 regulatory year was 80 points.

June 11, 2004

At an emergency teleconference meeting, the board adopted an emergency regulation identical to that adopted in June 2003 to again respond to the *Manning* ruling. Again, the emergency

regulation (in effect for 120 days) repealed 5 AAC 92.070(b) (1) but kept all other scoring factors the same. This meant that the maximum possible score for Tier II applicants for the 2004–05 regulatory year was 80 points.

June 5, 2005

At a special meeting in Anchorage, the board again adopted an emergency regulation identical to those of the past two years to respond to the *Manning* ruling. Again, the emergency regulation (in effect for 120 days) repealed 5 AAC 92.070(b) (1) but kept all other scoring factors the same. This meant that the maximum possible score for Tier II applicants for the 2005–06 regulatory year was 80 points.

May 14, 2006

At a special meeting in Anchorage, the board again adopted an emergency regulation identical to those of the past three years to respond to the *Manning* ruling. Again, the emergency regulation (in effect for 120 days) repealed 5 AAC 92.070(b) (1) but kept all other scoring factors the same. This meant that the maximum possible score for Tier II applicants for the 2006–07 regulatory year was 80 points.

October 7–9, 2006

At a special meeting addressing Tier II hunt topics in Anchorage, the board adopted a limit of 2 Tier II caribou permits per household for the Nelchina caribou hunt (TC566) only; the household limit remained 3 for any other Tier II caribou hunts.

At the same meeting, the board did not adopt two other proposals to modify the Tier II hunt point system. The board directed ADF&G to prepare two proposals for public review and board consideration at the March 2007 meeting, one to add a question to the Tier II hunt application regarding household monetary income and another to add a question on the Tier II hunt application to award points based upon the number of days the applicant spent hunting and fishing in the Tier II hunt area.

March 2007

During a regularly scheduled meeting to address wildlife topics in the Southcentral and Southwest regions, the board made substantial changes to the Tier II scoring system, acting upon two proposals ADF&G had submitted at the request of the board. It repealed 5 AAC 92.070(b) (1), the question concerning alternative sources of game invalidated by the *Manning* ruling. For all hunts, the maximum number of points was increased to 140, with 85 points (approximately 61%) allocated to questions measuring Factor A (customary and direct dependence) and 55 points (approximately 39%) to questions measuring Factor B (ability to obtain food). For all hunts, a question, allocating up to 25 points, was added to measure Factor A that asked the number of days the applicant had spent hunting and fishing in the Tier II hunt area during the past year. (A similar question had been asked from 1991–92 through 1995–96.)

For all Tier II hunts except TC566 Nelchina caribou and TM300 GMU 13 moose, the board increased the number of points awarded based on the location of food purchases to 25 points, and increased the number of points awarded based on the location of gasoline purchases to 30 points.

For Tier II hunts TC566 Nelchina caribou and TM300 GMU 13 moose, the board increased the number of points awarded based on the location of food purchases to 15 points, and increased the number of points awarded based on the location of gasoline purchases to 20 points. It added a

question, allocating up to 20 points, to measure Factor A based upon the adjusted gross monetary income of the applicant's household in the previous calendar year. Also added was a question on the number of people living in the household. Households with total incomes at or below the federal poverty guidelines based on household size received the full 20 points. Households with higher incomes, up to twice the federal poverty guidelines, received a proportional number of points. Households with incomes twice or more above the federal poverty guidelines received zero points. Additionally, applicants who scored no points on the three questions measuring Factor A received no points for their entire application. Applicants who received no points for the question concerning income received no points for their entire application.

July 6, 2007

The Alaska Supreme Court affirmed the *Manning* ruling that invalidated 5 AAC 92.070(b) (1), the question concerning alternative sources of game. The court also provided guidance on how to construct a regulation to measure access to alternative game resources that would pass constitutional scrutiny. No other changes to the Tier II point system were made.

July 2007

On July 20, 2007, the Superior Court in Anchorage heard oral arguments concerning a motion for a preliminary injunction in the *Ahtna Tene Nené* case. In an oral ruling the same day, the court granted a preliminary injunction and ordered ADF&G to re-score applications for Tier II hunt TC566 Nelchina caribou and TM300 GMU 13 moose to not automatically assign a score of zero to applicants who had exceeded the income cap (twice the federal poverty limit based on household size).

On July 27, ADF&G re-issued 3,000 Tier II TC566 Nelchina caribou permits and 150 Tier II TM300 GMU 13 moose permits to comply with the court order.

January 2008

The board acted on an amended version of Proposal 33. The action modified 5 AAC 92.070(b)(4), to cap points for household income on GMU 13 Tier II applications at 130% above the federal poverty guideline for Alaska, taking into account household size.

June 2008

The Superior Court ruled in the *Ahtna Tene Nené* case. Among other things, the court ruled that the board could use income to score Tier II applications, but if income is used, applicants' scores must be adjusted to account for cost of living differences. The court also ruled that the board may use income or other measures to "zero out" scores for Factor A or Factor B, but may not use any single measure to zero out an entire application.

July 2008

In an emergency meeting in response to the court ruling, the department advised the board that up-to-date data on cost of living differences throughout the state were not available to adjust applicants' scores for GMU 13 Tier II hunt applications. Consequently, the board adopted an emergency regulation that directed the department to score GMU 13 Tier II hunt applications with the same procedures as were used for other Tier II hunts for the 2008/2009 regulatory year only, with the intention to revisit the Tier II scoring system during its spring 2009 regulatory meeting.

At its previously regularly scheduled meeting, the Board modified the income question for moose and caribou Tier II hunts in Unit 13 by increasing the income level allowed and scored the participants depending on the number of people in the household and their total taxable income for the past year. Families of four or fewer members received zero points on the question if the taxable income exceeded $60,950, and the cutoff for the zero score was adjusted upward for larger households. The Board also required antler destruction for all moose taken in the Unit 13 Tier II hunt and for caribou in the Unit 13 Tier II hunt that had 8 or more points.

March 2009

During its regularly scheduled meeting, the Board revised the amount reasonably necessary for subsistence (ANS) findings for moose and caribou in GMU 13 and eliminated the Tier II hunts for both populations and created the Community Subsistence Hunts (CSH). The CSH included an allocation of 100 bulls moose that do not meet antler restrictions. The Board also repealed the Tier II questions and scoring procedures specific to GMU 13 hunts. At the same time the Board created antlerless moose drawing hunts for residents and antlered bull moose hunts for nonresidents.

July 2010

In response to a ruling in *Manning v. State of Alaska*), the Board reestablished the Tier II hunt for GMU 13 caribou (Nelchina Herd) and eliminated the CSH hunt in an emergency meeting. Applications were scored using the existing system for other Tier II hunts.

October 2010

In a special meeting, the Board adopted modified regulations for and reestablished CSH hunts in GMU 13, and again eliminated the Tier II hunt for Nelchina caribou, beginning in the 2011/12 regulatory year. The new version of the CSH hunt now allowed participation in the hunt by any group of 25 people or more. Following this change, the number of participants in the CSH hunts has increased substantially.

March 2011

The Board modified the bag limit to one caribou per household for CSH and Tier I caribou and no longer required trophy destruction. The Board also decreased the number of bulls that do not meet antler restrictions from 100 to 70 for the CSH moose hunt. Also at the meeting the Board created a bull caribou drawing hunt for residents, and allowed up to 3,000 permits to be issued.

March 2013

The Board changed the bag limit for the caribou drawing hunt from bull to any caribou, gave the department the ability to restrict the bag limit to one sex if biologically necessary and increased the amount of permits available to 5,000. At the same meeting the Board increased the number of bulls that do not meet antler restrictions from 70 back to 100 in response to increased participation in the CSH hunt. Effective in 2014 the Board added a Dec. 1 – Dec. 31 season to the CSH hunt and allocated the 100 bulls that do not meet antler restrictions to one per every three households in each group. To provide additional opportunity for the harvest of bulls that do not meet antler restrictions, the board added a winter registration hunt for bulls only from Dec. 1–Dec. 31. Permits for the registration hunt were available in Glennallen only and two weeks before the season (not during the season). Due to very high levels of participation, the hunt was closed after one day and never resumed.

February 2015

The Board required participants in CSH to commit to participation in the hunt for two consecutive years. The Board also required a group report, and in the event the group does not report, the entire group will be ineligible to receive any permit hunt for the next regulatory year, including CSH. The Board also defined the terms community and group as "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." At the same time the Board created an any bull moose drawing hunt for residents and effective in 2016 shortened the season for CSH by ten days.

March 2016

The Board rejected Proposal 105, which would have modified Tier II questions and scoring.

Addendum: Details of Copper Basin hunt litigation as of October 4, 2016[63]

I. Tier II hunt scoring:

Ahtna v. State, 3AN-07-08072CI

At this time, caribou and an early moose season were managed as a Tier II hunt in GMU 13. The Superior Court enjoined the Tier II hunt scoring and ordered applications to be reevaluated. The court held that the income factor used to score Tier II applicants was invalid because it nullified all other factors and could be used to zero out an application.

State v. Manning, 161 P.3d 1215 (Alaska 2007)

Manning challenged the regulatory scoring of applicants for Tier II Nelchina caribou hunts, arguing that caps on scores for game ratio, food, and fuel costs based on community of residence were unconstitutional residency-based criteria. The plurality opinion in *McDowell*, and this decision, leaves uncertain the proper equal protection analysis. It held that the caps on scores for costs of food and gas based on the costs in the applicant's place of residence met the more stringent test of being narrowly tailored and designed for the least possible infringement. But it agreed with Manning that the game ratio scoring system was not an accurate method of measuring an applicant's access to other game and did not meet even the lower "close scrutiny" test.

II. Tier I community subsistence permits:

Ahtna Tene Nené v. State & Manning, 288 P.3d 452 (Alaska 2012)

AFWCF and Manning's appeals were consolidated. Both had challenged the community subsistence hunt regulations granting a CHP to Ahtna's tribe. In June 2009 the court severed and struck the village residency requirements. The Superior Court found it was impermissibly a residence-based permit and an impermissible delegation of authority under the public trust doctrine. In July 2010 the hunt was enjoined as unconstitutional: "[T]he Board is enjoined from proceeding with a Tier I hunt for caribou in Unit 13 this year, is enjoined from delegating CHP

[63]. Updates provided by the Department of Law and the Division of Wildlife Conservation

hunt administration authority to private entities or individuals, and is enjoined from authorizing an Ahtna CHP that is fundamentally residency-based." The Board of Game amended the regulations in 2010 so the court held the appeals are now moot. The new regulations open the CHP hunt to any group of 25 or more Alaskans, regardless of residency. A permit would be issued every year instead of every 4 years. Manning is not entitled to attorney fees as a pro se plaintiff because he is not a member of the Bar.

Alaska Fish & Wildlife Conservation Fund v. State & Ahtna Tene Nené, 347 P.3d 97, *rehearing denied* (Alaska 2015)

AFWCF brought a challenge to the Copper Basin CHP under equal access and equal protection clauses of the Alaska Constitution. The court upheld the Board of Game's 2006 findings regarding customary and traditional subsistence use of moose and caribou, originating with the Ahtna Athabascan communities in the region and later adopted by other Alaska residents. The pattern of use includes use of the whole animal, and community sharing. The court upheld the 2011 Board of Game findings that amended the Board's 2006 findings, recognizing two types of subsistence, individual and group. Individuals travel much farther, do not use organ meat, sharing is less formal and there is less pressure to share. The community hunt has a longer

season, covers a larger area, and is allocated 70 "any bulls" [now 100]. The Alaska Supreme Court agreed with the Superior Court that any Alaskan is eligible to participate in either hunt opportunity, so it does not create classifications that result in disparate treatment of Alaskans similarly situated. Community hunt regulations apply to all Alaska residents. User groups are not defined by means or methods of access to the resource. Inconvenience is not a bar to eligibility for participating in subsistence. (citing *Interior Alaska Airboat Ass'n*). The "user group" is subsistence hunters, which means all Alaskans, urban or rural (citing *McDowell*). AS 16.05.330(c) authorizes community permits. (Note 37: AFWCF does not contend individuals lack a reasonable opportunity, only that CHP opportunities are better.) The group size of 25 is not arbitrary. Community hunters hunt in close proximity (GMU 11, 12, 13), compared to individual hunters who go where the game is (GMU 13). CHP hunters need a longer season and no moose antler restrictions, so they can hunt closer to home. Allocation of up to 300 caribou to CHP is not unreasonable. The public meeting notice was proper under the APA.

Manning v. State, 355 P.3d 530 (Alaska 2015), *cert denied*

In 2011, Manning challenged the Copper Basin community subsistence permit hunt for caribou and moose. The court referenced its decision in *Alaska Fish and Wildlife Conservation Fund* as both cases questioned the validity of the community subsistence hunts. The Board of Game amended the community subsistence hunts after *Manning I* to allow any group with 25 or more members to participate in the CSH hunt in the Nelchina basin. The board in 2009 had also amended the ANS for caribou, and the result is that the individual and community caribou hunts can be managed as Tier I instead of Tier II, and non-subsistence drawing hunts were authorized. The court upheld the revised ANS calculation, finding it was based on considerable evidence in the record and not on information manipulated to achieve a predetermined outcome. The Department had the authority to close hunts by Emergency Order, and the court upheld the authority to close each hunt independently. Manning's argument that Tier I community hunt eligibility based on "community criteria" was previously decided in *AFWCF*. Manning's public trust argument is the same as article VIII, § 3, so was decided in *AFWCF*. Other arguments were "conclusory and inadequately developed" so were waived. The case was remanded for

recalculation of attorney fees owed to the State and Ahtna because many claims were related to constitutional rights. On rehearing, the court corrected statements suggesting there might be a constitutional subsistence hunting right and clarified there is a constitutional right to "equal access" for subsistence hunting opportunities. Eleven counts do not concern constitutional rights so Rule 82 fees could be awarded for those claims.

ON REMAND: The superior court awarded costs of $581 to Ahtna and attorney fees of $3,816 to the State. On August 22, 2016 Manning appealed these orders to the Alaska Supreme Court.

Manning v. Alaska Dept. of Fish & Game and Ahtna Tene Nene, Case No. 3KN-13-00708CI

In 2013 Manning filed another lawsuit opposing the Copper Basin community subsistence hunt, and this case was stayed pending the outcome of his appeal in his 2011 lawsuit. The 2011 decision was decided in 2015 (appealed again to the Alaska Supreme Court on the awards of attorneys' fees and costs, see above). Manning then moved to amend his complaint and add Ted Spraker as a defendant. On August 1, 2016 the court issued an order denying his motion and explaining that his original and amended complaint alleged claims that have all been resolved by the Alaska Supreme Court in prior cases. Final judgment was issued in favor of the State and Ahtna, allowing each to pursue attorney fees. The State and Ahtna moved for attorney fees in September. On September 29, 2016, Manning filed a Motion for New Trial. His request for reconsideration was denied by the court in an Order dated October 4, 2016.

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