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RC 2 Tab E

Customary and Traditional Use Worksheet, Black Bears, Game Management Units 12, 19, 20, 21, and 24 (Interior Alaska)

Prepared by

James J. Simon

for the November 2008 Juneau Board of Game meeting

November 2008

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

Alaska Department of Fish and Game	ADF&G
Alaska Administrative Code	AAC
all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.
all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.
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	HA
base of natural logarithm	e
catch per unit effort	CPUE
coefficient of variation	CV
common test statistics	(F, t, $\chi 2$,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)	log2, etc.
minute (angular)	'
not significant	NS
null hypothesis	HO
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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CUSTOMARY AND TRADITIONAL USE WORKSHEET, BLACK BEARS, GAME MANAGEMENT UNITS 12, 19, 20, 21, AND 24 (INTERIOR ALASKA)

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INTRODUCTION

BACKGROUND

Pursuant to Alaska Statute 16.05.258 (Subsistence use and allocation of fish and game) and 5 AAC 99.010 (Boards of fisheries and game subsistence procedures), the Alaska Board of Game made a positive customary and traditional use finding for black bears *Ursus americanus* in Game Management units (GMUs) 12, 19, 20, 21, and 24 at its March 2008 regulatory meeting (ADF&G 2008a; ADF&G 2008b; ADF&G 2008c). At that time the board established an amount reasonably necessary for subsistence (ANS) of 30 to 50 black bears for Game Management Unit 19, and concluded that the lack of information on harvest levels precluded making ANS findings for the customary and traditional harvest and use of black bears in units 12, 20, 21, and 24.[1]

At its March 2008 Interior Region regulatory meeting, the Alaska Board of Game requested that the ADF&G Division of Subsistence provide more detail on the customary and traditional uses of black bears in Interior Alaska, specifically with reference to methods and means of black bear harvests in units 12, 19, 20, 21, and 24 (Criterion 3, 5 AAC 99.010(b)(3)). The additional information was requested so as to better evaluate a number of deferred proposals to recognize in regulation customary and traditional harvest practices of black bears.

The revised customary and traditional use summary for black bears in units 12, 19, 20, 21, and 24 found below provides an expanded description of customary and traditional harvest and use practices for black bears from the ethnographic and ethnohistorical literature of this region of Interior Alaska. Appendix A is included at the end of this report to provide pertinent quotations related to customary and traditional uses of black bears from the literature.

THE EIGHT CRITERIA

CRITERION 1: LENGTH AND CONSISTENCY OF USE

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

Historically, black bears have been harvested by residents of the Interior of Alaska as an important source of meat, fat, and fur. Today, black bears remain an important subsistence resource (e.g., Andersen et al. 1998; Andersen et al. 2001; Case and Halpin 1990; McKennan 1959; Mishler and Simeone 2004; Nelson 1973; Nelson et al. 1982; Osgood 1959; Osgood 1971; VanStone 1979). In several communities, over 1/3 of the households successfully harvested black bears (Table 1), according to recent Division of Subsistence surveys.

In communities within or near spruce woodlands, such as Lime Village, Stony River, Sleetmute, Chuathbaluk, Hughes, Huslia, Galena, Minto, and Tanacross to name a few, hunting and use of black bears is a well-established pattern. In other communities, black bears are most often taken

[1] In 2008, the Alaska Board of Game established an amount reasonably necessary for subsistence uses of black bears in Unit 19 based upon Division of Wildlife harvest ticket reports and Division of Subsistence household surveys. According to the ADF&G harvest database, an annual average of 29 black bears was reported harvested in Unit 19 since 1986. Division of Subsistence household surveys documented an average of 32 black bears annually by Unit 19A residents alone from 2003 to 2006 (ADF&G 2008b).

opportunistically when targeting other animals, such as moose *Alces alces* or small game; however, their use is common. Most residents familiar with the use of black bears report that they have harvested black bears in regularly-hunted areas as long as elders in their communities can recall, and can recount stories of uses by previous generations (e.g., Charnley 1984; Kari 1983, Kari 1985). Historical sources from the 19th century mention use of bears by residents of this region.

CRITERION 2: SEASONALITY

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

Black bears are hunted primarily in the spring, fall, and throughout the winter (e.g., Andersen et al. 1998:25; Andersen et al. 2001:5; Case and Halpin 1990:88; McKennan 1959:49; Mishler and Simeone 2004:100; Nelson 1973:115-121). In areas within or near black bear habitat, black bear hunting continues after bears begin venturing from their dens in April and extends through May; or when the salmon fishing season starts. Black bears are a notable resource in these areas, often being the only large animal reasonably available during late winter when food stores are depleted.

In the fall, from late August through October, black bears are hunted in conjunction with or incidental to moose and caribou *Rangifer tarandus*. Snaring of black bears was a particularly useful and efficient method of harvest during the fall (Nelson et al. 1982:44). The quality of black bear flesh is often mentioned as a factor in the timing of targeted hunting. Black bears "retire to their dens by late September, but remain fat and tasty through the winter" (Nelson 1973:116). Den hunting ("denning") of black bears is still practiced throughout the winter (e.g., Andersen et al. 1998; Andersen et al. 2001; Nelson 1973:115-116; Nelson et al. 1982:48). The flesh of black bears is considered best, fat and palatable, in the fall and early winter, when the bears have been feeding primarily on berries. However, food stores are often diminished in the spring, and any fresh meat is welcome. Also, immediately after coming out of hibernation in the spring, black bears have some fat for a short period of time.

CRITERION 3: MEANS AND METHODS OF HARVEST

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

Traditional and historical methods of taking black bears include the use of spears, lances, bow and arrows, clubs, deadfalls, snares along trails, snares in trees, rifles, and the use of nooses to take swimming bears from boats (McKennan 1959:49; Nelson 1973:116-117,120-121,122; Nelson et al. 1982:44; Osgood 1958; Osgood 1971; VanStone 1974). Dogs were sometimes used to track bears or locate dens (McKennan 1959:49). Today, black bears are commonly taken with large caliber rifles or sometimes with snares (Nelson 1973:116-117,118; Nelson et al. 1982).

Black bears are either specifically sought after or harvested incidental to other activities, such as fishing, berry-picking, or hunting for moose or waterfowl. Hunters typically access hunting areas by boat in the summer and fall and by snowmachine in the winter. Near some communities, walking to harvest areas is common, such as in the Kuskokwim area where residents hike to the mountains for bear hunting. All-terrain vehicles (ATVs) are also used occasionally. Formerly, snowshoes and dog teams were a common means of access. Black bears are often attracted to fish camps during the summer months, when fish are processed and stored. In the upper

Kuskokwim (GMU 19D) area, fish scraps are sometimes placed on distant sand bars in an effort to divert bears from the fish processing area. Occasionally, these bears are intentionally taken, although such bears are considered less desirable for human consumption because of the flavor of their meat during that time of year.

Taking black bears from their dens, or "denning," is still commonly practiced today (Andersen et al. 1998:25; Andersen et al. 2001:5; Case and Halpin 1990:21, 88; Nelson 1973:115-116, 118)[2]. Known "denning" sites are checked for signs of occupancy in the late fall and early winter.

> Once they have discovered a den they check it each fall. The Koyukon usually consider each den a sort of property, 'owned' by the man who discovered it or learned of it from his father. (Nelson et al. 1982:118)

Hunters take note of grass piles and other likely denning sites in the fall. In the winter, the dens are located by examining the areas for scratch marks and bits of fur on trees (e.g., Nelson 1973:118-121; Nelson et al. 1982:45-47). Many hunters know from the size of the den and signs around it if a single animal or a female with cubs occupies it, but "to find a den obligates the hunter to harvest its occupants" (Nelson et al. 1982:48).

> From time to time, one may discover a den occupied by a sow bear and one or two yearling cubs. These cubs are often two-thirds the size of a full adult. It is the obligation of the hunter to take all occupants of a den. If the bears did not wish to be taken they would not have revealed themselves, and to not take them would be an act of disrespect. (Nelson et al. 1982:47)

Once an occupied den is located, the bear is either shot through a hole in the top of the den or through the entrance. Sometimes the bear is disturbed and shot upon its exit from the den.

> Often bears can be hunted in their dens by a much simpler method. The hunter simply disturbs the animal until it comes up into the den tunnel or pokes its head out the entrance, and then he shoots it. Or in many cases a hunter looks into the den tunnel, using a flashlight or torch to locate the animal inside. If he can see it clearly, he is able to aim and shoot effectively from the den entrance. (Nelson et al. 1982:47)

Occasionally the entrance is blocked to slow exiting bears (e.g., McKennan 1959:49). Bears taken in dens are typically butchered away from the den site to maintain the productivity of the den and to ensure its use by bears the following year (Nelson 1973; Sumida 1988:141-142, Sumida 1989).

Black bears are also harvested by using snares, which is typically done during the fall "when they are fat and seem to wander along well-defined trails" (Nelson 1973:116-117). In Chuathbaluk, Sleetmute, Lime Village, and Stony River, wire snares have been set in or near smokehouses in recent years to capture troublesome bears. Specific bear snaring techniques are discussed at length in Nelson (1973:116-117) and Nelson et al. (1982:44). For example, one technique involved placing the snare in a tall straight spruce tree near a well-traveled black bear trail. The tree is stripped of branches on one side up to a height of approximately 12 feet. A basket of fish is hung on a branch just above the trimmed area and the rawhide line of the snare forms a noose approximately 18 inches in diameter and approximately 9 feet above the ground.

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[2] Brown bears *U. arctos* were also harvested from dens in times past (Case and Halpin 1990:84,87; Hadleigh-West 1963:140-141,343; McKennan 1965:144-145).

> A bear smelling the fish and seeing the basket hung in the tree would climb up the trimmed area, pushing his head through the willow loop and its supported rawhide noose. As it descended, the noose, tied with a special non-slip knot, would tighten and kill it. Bear snares were set in the latter part of August and were checked each day by the owner. (Nelson et al. 1982:44)

People in the Anvik area (GMU 21) set snares along a tree that was felled at an incline. Fish entrails and eggs, used as bait to attract the bears, were placed in a birch bark basket tied to the upper end of the tree. The name of this snaring method, *deoako'n,* literally means "fish guts up in the air." Kuskokwim (GMU 19D) hunters report dragging bear carcasses away from dens before butchering in an effort to maintain the productivity of the dens. Stevens Village residents (GMU 25) report that they thoroughly clean dens to help ensure their use the following year.

The harvest of bears found swimming in the water is described in the Kuskokwim area (GMU 19) and other parts of Interior Alaska (e.g., Nelson et al. 1982:48). A noose is looped around its neck and the animal pulled to shore. This method was reportedly used in the Lime Village area as late as the 1950s. It is also reported that bears in the water are taken by spear in the Upper Tanana area (GMU 12).

> Bears are also hunted from boats during the open-water season. A number are usually taken during the fall moose hunt, when the Indians see them along the river. Some bears are wary enough to run when they see a boat coming, but others are unafraid. Bears are also shot by hunters traveling on the river in spring, often by duck hunters in their little canoes. (Nelson 1973:123)

Hunters in Tok use bait stations to attract and harvest black bears.

CRITERION 4: GEOGRAPHIC AREAS

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

Each community typically hunts black bears in areas known to be productive. In many cases, areas used to hunt black bears are similar to those used to hunt moose and both activities often occur together. Information specific to black bear hunting areas does not exist for most communities; depiction of black bear hunting areas is often combined with brown bear or moose hunting areas. However, Figures 1 through 12 provide maps representing some of the documented areas used for black bear hunting in Interior Alaska.

Lime Village residents hunt moose, caribou, and black bears in river flats throughout their land use area. They hunt moose intensively along the Stony River and its side streams, including the Stink River and Hungry Creek. They also use Caribou Snare Creek and other streams that drain into Tundra Lake. Can Creek is an important hunting ground for both moose and black bears (Kari 1983).

Stony River residents hunt black bears along the Kuskokwim River about 70 miles upstream and 20 miles downstream of the village; as well as along the Swift and Stony rivers and their tributaries; and along the Tatlawiksuk, Holitna, and Big rivers (Kari 1985). Chuathbaluk residents have hunted black bears along the Kuskokwim River from just downstream of their community, to upstream of McGrath. Areas along the Aniak, Holokuk, and Oskawalik rivers, as well as the lower tributaries of the Holitna River have also been hunted (Charnley 1984).

Sleetmute hunters primarily use the Holitna drainage, along with the lower reaches of the George River, to hunt black bears (Charnley 1984).

Kwethluk hunters (from GMU 18) have used the Holokuk River drainage, especially since the 1940s, to hunt black bears. Areas of use include the Kuskokwim River as far upstream as McGrath, and the Holitna River upstream to its headwaters (Coffing 1991).

Tuluksak residents (from GMU 18) have hunted bears along the Kuskokwim River from the village upriver to the mouth of the Holitna River, as well as in a few areas near the Johnson River, between the Yukon and Kuskokwim rivers. Tributaries of the Kuskokwim River between the village and the Holitna River have also been hunted for bears. These include the Tuluksak River drainage upstream to the Risher Dome area; Bogus and Ophir creeks and the area around Whitefish Lake; the Aniak River approximately 10 miles upstream of the Kolmakof and Holokuk rivers; the Holitna River upstream as far as Kashegelok; and the first 10 river miles of the Hoholitna River (Andrews and Peterson 1983).

Nunapitchuk residents (from GMU 18) hunt black bears at the same time as moose. They hunt north and east of their village, upstream to the headwaters of the Pikmiktalik, Kvichavak, and Johnson rivers, including adjacent lakes and tributaries. They sometimes portage from the Johnson River to the Yukon River and hunt along the Yukon River as far upstream as Paimiut Slough. They also hunt along the Kuskokwim River as far upriver as the Stony River, 320 miles distant (Andrews 1989).

Black bear hunting areas used by Russian Mission residents (from GMU 18) include the Yukon River corridor from Ohogamiut upstream to the outlet of the Bonasila River; the lower reaches of the Bonasila River; and the Innoko River upstream to its confluence with the Shageluk River. Northern and eastern hills along the north bank of the Yukon River were hunted as well. Areas along the lower Atchuelinguk River are recent additions to regular black bear hunting areas, with hunting in that area occurring while residents are at their fish camps.

CRITERION 5: MEANS OF HANDLING, PREPARING, PRESERVING, AND STORING

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

Black bears provide an important source of meat, fat, and fur. Depending on the particular custom, bear meat is eaten in the household in the context of community celebrations or during feasts for special occasions, such as the “bear party” practiced along the Koyukuk River. Valuable parts, such as the ribs and hind quarters, are saved for potlatches.

Butchering practices follow culturally-established beliefs and values. In many communities, the skull is left in the field; either buried, as is the practice along the Kuskokwim River; hung upon a small tree near the kill; or burned in a clean fire, as is the practice along the Koyukuk River. In any case, it is not brought back to the village so as to show proper respect toward the animal. The hunter cuts the eyes of the bear so that its spirit cannot see a possible violation of butchering taboos.

Black bears are butchered in the field and processed like other large game. The meat is shared with relatives, especially if fresh meat has been scarce. Some sources report patterns of

butchering and sharing that are dependent upon the number in the hunting party, the hunter who made the kill, and the age of the hunters. The meat is prepared in many ways: frozen, dried, smoked, canned for later use, or cooked by boiling, frying, broiling, barbecuing, or roasting. In some communities, the fat is rendered for use in cooking, and for making "Native ice cream." The choicest parts, such as the hindquarters or organs (heart, kidneys, and intestines), are often given to elders. If the meat has to be transported some distance, or if return to the village is not imminent, the meat may be dried in the field in order to decrease its weight and prevent spoilage.

Bear skins are used in the Tanana area (GMU 20) for ruffs, mukluks, and cabin bedding. Their use to insulate doors is described in the Yukon Flats area (GMU 25). In Koyukuk River communities, precautions are taken to ensure that bear hides do not come in contact with young women.

CRITERION 6: INTERGENERATIONAL TRANSMISSION OF KNOWLEDGE, SKILLS, VALUES, AND LORE

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

Athabascan tradition attributes great spiritual power to the bear. Bears feature prominently in Interior Athabascan oral traditions and mythology (e.g., Osgood 1959:146). There is an elaborate set of beliefs and values surrounding their harvest and use, and bear meat is often taboo for women. For example, residents in Koyukuk River villages (GMU 24) follow proscriptions on who may eat bears, what portions may be eaten, how they are prepared, uses of the inedible parts, such as claws and skulls, and the ways to refer to bears.

> Bear hunting among the Koyukuk Athabaskans is an activity that far transcends the meeting of simple biological needs. To these people the [black] bear is invested with particularly powerful spiritual powers and, when carried out by culturally prescribed methods, the killing, treatment, and consumption of a bear is literally a religious act. (Nelson et al. 1982:45)

An example is the "bear party" practiced along the Koyukuk River (GMU 24). It is held in the forest, away from the village, and may be attended only by men as a way of showing proper respect to the animal after its death. In Allakaket, bear parties include cooking meat from the head, neck, feet, and backbone; dancing; and singing special bear songs.

The knowledge of the medicinal uses of bear "grease" and other bear parts has been handed down, but is generally not in use today.

As with many subsistence activities, teaching young men how to track, hunt, and butcher black bears, and young women how to process and preserve bear meat and other products, is through participant observation. Children are included in many activities, and are expected to show interest and eventually participate in the activities, depending upon their age and acquired skills. Most hunting is done in family-based groups, so that the learning and proficiency of younger participants is monitored.

CRITERION 7: DISTRIBUTION AND EXCHANGE

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

Black bear meat is widely shared within and between communities, particularly when it is the only fresh meat available during lean times, such as late winter. Certain parts, such as the hindquarters, heart, and kidneys, are normally given to elders.

Bear meat is often considered a specialty food and served at funeral and memorial potlatches (e.g., Minto, where the backbone, ribs and brisket are served). The fat and meat from fall hunts is served at community-wide meals, often held on Christmas Day and New Year's Eve (e.g., Minto).

The common pattern in the Native use of black bear meat is that only the men and the elder women should eat it. This pattern is perhaps less observed in the Kuskokwim area. In Minto, the limbs of harvested black bears apparently merit special attention as they are reportedly cut into three pieces and each piece given to a different household.

CRITERION 8: DIVERSITY OF RESOURCES IN AN AREA; ECONOMIC, CULTURAL, SOCIAL, AND NUTRITIONAL ELEMENTS

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

Black bears are one of several large game species used for food by residents of these GMUs. Although the numbers harvested annually are fewer than those of moose or caribou, black bears are an important food source, particularly in late spring and early summer.

In some parts of these GMUs, nonlocal foods and equipment are often very costly, and the means of generating cash are not widely available. Residents of these communities harvest a large variety and considerable amounts of fish and game resources, including:

1. the 5 species of Pacific salmon *Oncorhynchus* found in Alaska
2. whitefishes *Prosopium* or *Coregonus*
3. northern pike *Esox lucius*
4. burbot *Lota lota*
5. Alaska blackfish *Dallia pectoralis*
6. smelt *Thaleichthys pacificus*
7. trout *O. mykiss* and *Salvelinus*
8. Arctic lampreys *Lampetra japonica*
9. moose
10. caribou
11. black bears
12. brown bears
13. hares *Lepus*
14. ptarmigan *Lagopus*
15. porcupines *Erethizon dorsatum*

16. grouse *Bonasa, Dendragapus, Tympanuchus*
17. numerous species of waterfowl
18. furbearers, including:
    a. beavers *Castor canadensis*
    b. mink *Mustela vison*
    c. river otters *Lutra canadensis*
    d. muskrats *Ondatra zibethicus*
    e. wolverines *Gulo gulo*
    f. wolves *Canus lupus*
    g. red foxes *Vulpes vulpes*
    h. lynx *Lynx canadensis*
    i. martens *Martes americana*

Residents also harvest many varieties of plants and berries.

Much of the wild resources harvested are salmon and freshwater fishes. However, communities further inland depend more heavily on land mammals, such as black bears. Kari (1983) reported that Lime Village residents prefer fresh animal meat as a staple over fish and birds. Caribou, moose, and beavers provided the most meat for Lime Village residents; in some years, black bears may have equaled beavers in pounds consumed.

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TABLES AND FIGURES

Table 1.–Black bear harvests, Interior Region, 1982-1987.

Community	Year	Percentage of households harvesting	Estimated total number harvested	Lbs per capita harvest
Allakaket	1982	37	23	9
Anderson	1987	7	10	4
Beaver	1985	10	10	4
Bettles	1982	25	3	5
Dot Lake	1987	8	1	1
Fort Yukon	1987	31	150	7
Galena	1985	18	36	5
Healy	1987	2	7	1
Hughes	1982	53	17	11
Huslia	1983	37	41	32
McGrath	1984	n/a	15	2
McKinley Park	1987	2	1	0.8
Minto	1984	20	16	16
Nikolai	1984	n/a	6	3
Northway	1987	9	10	2
Stevens Village	1984	40	17	19
Tanacross	1987	4	3	1
Tanana	1987	14	38	28
Tok	1987	8	40	2

Source ADF&G Division of Subsistence survey data.

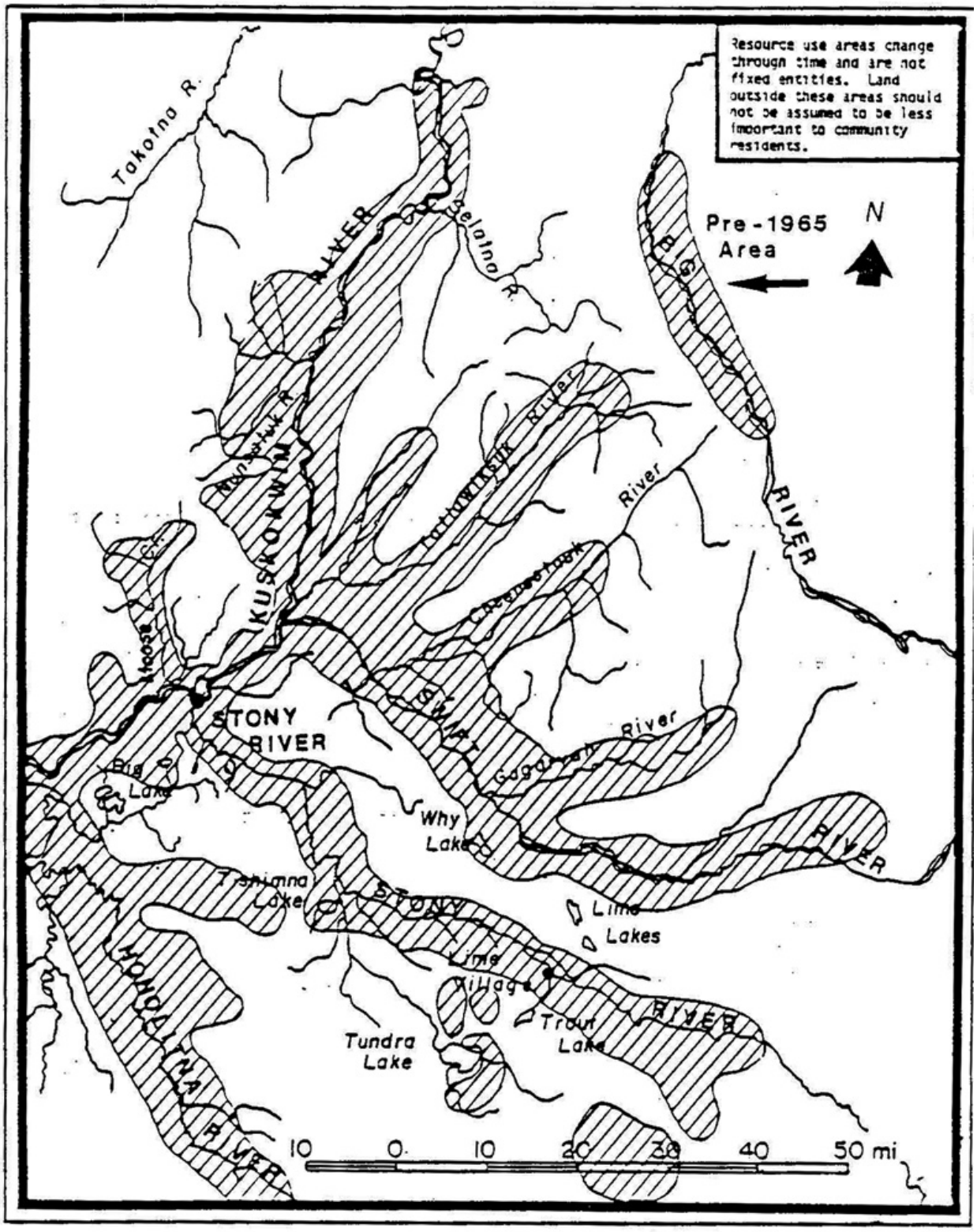

Figure 1.–Areas used for black bear hunting during the lifetimes of Stony River residents as reported in 1983-1984.

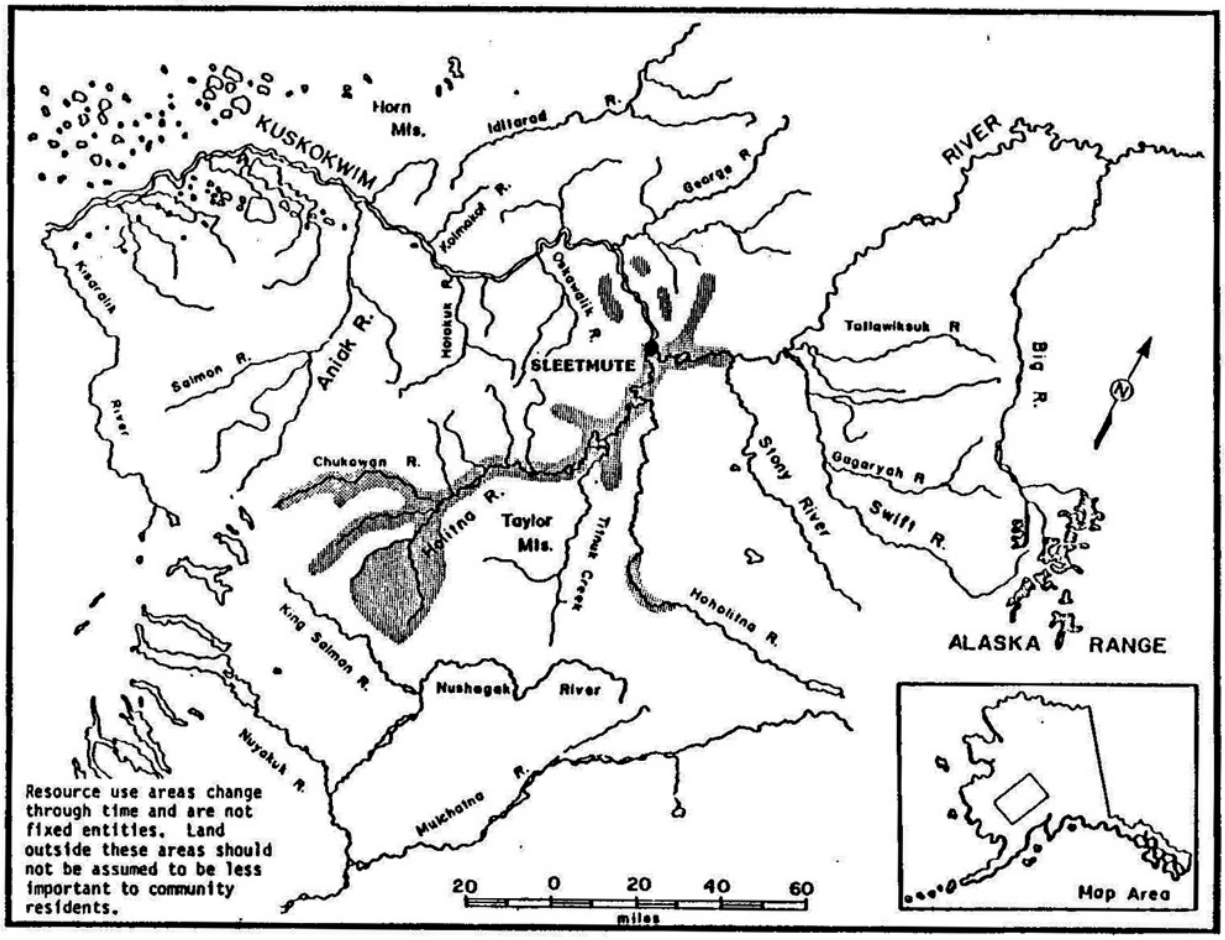

Figure 2.–Areas used by Sleetmute residents for hunting bears prior to the use of snowmachines.

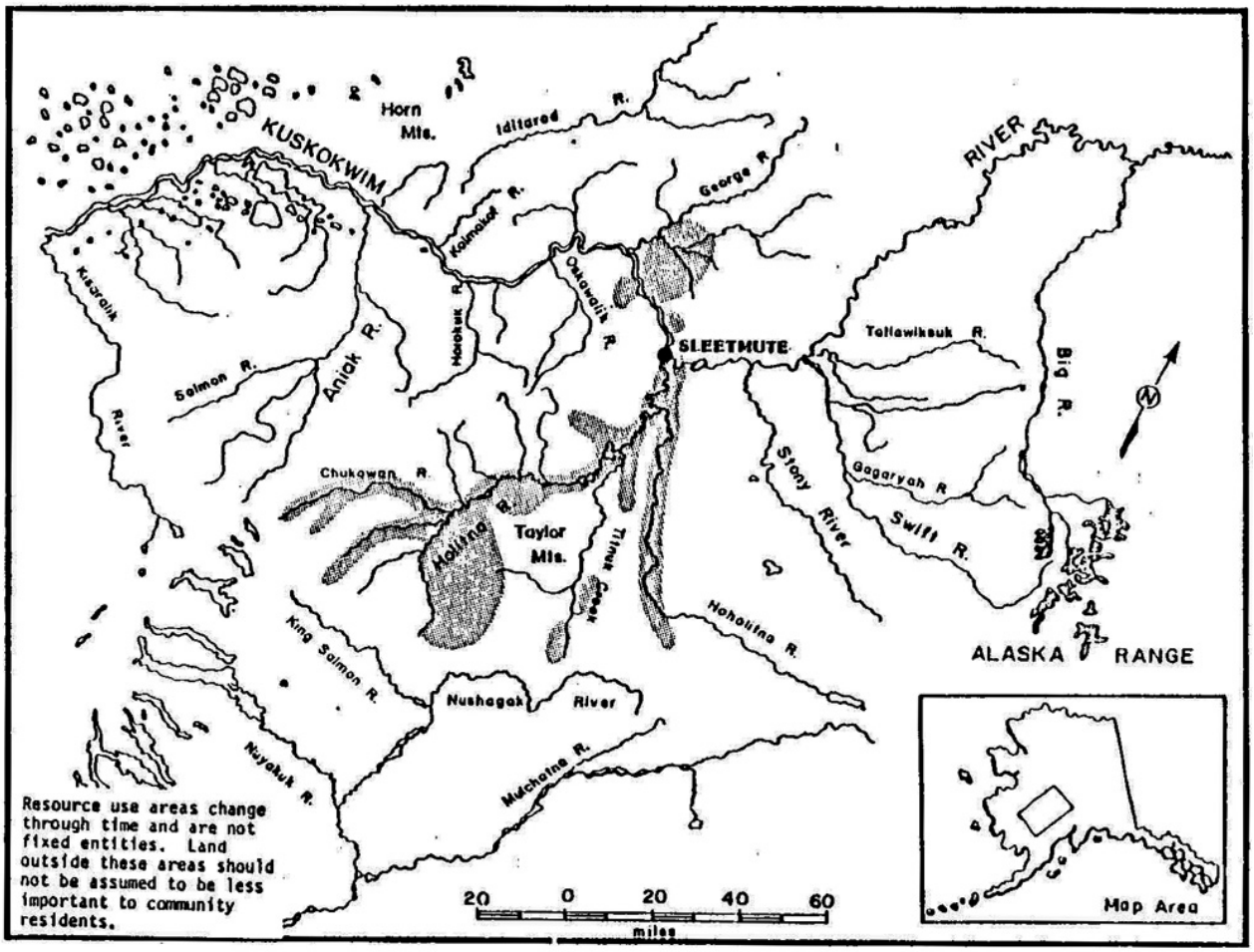

Figure 3.–Areas used by Sleetmute residents for hunting bears since the use of snowmachines, through 1983.

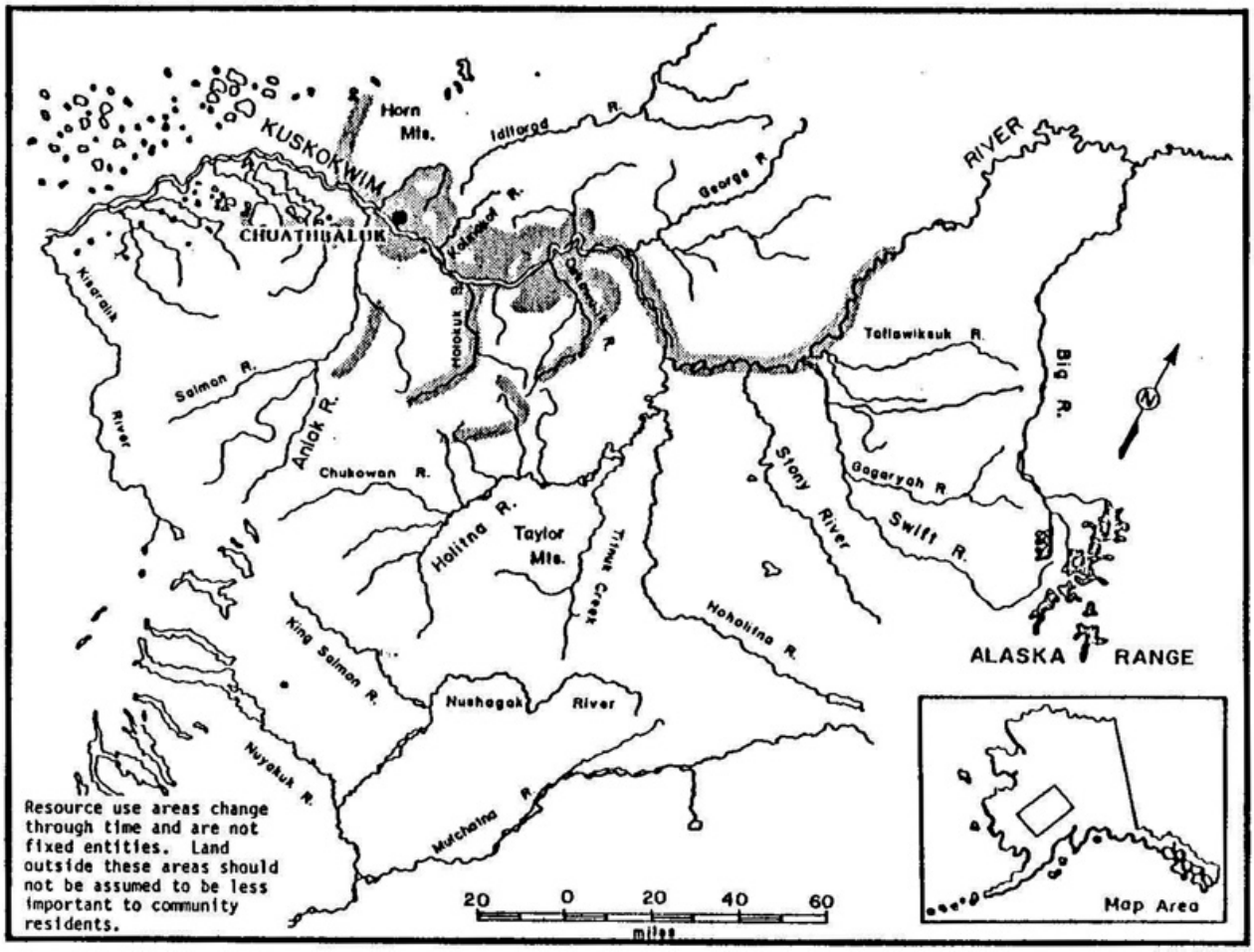

Figure 4.–Areas used by Chuathbaluk residents for hunting bears since moving to Chuathbaluk, through 1983.

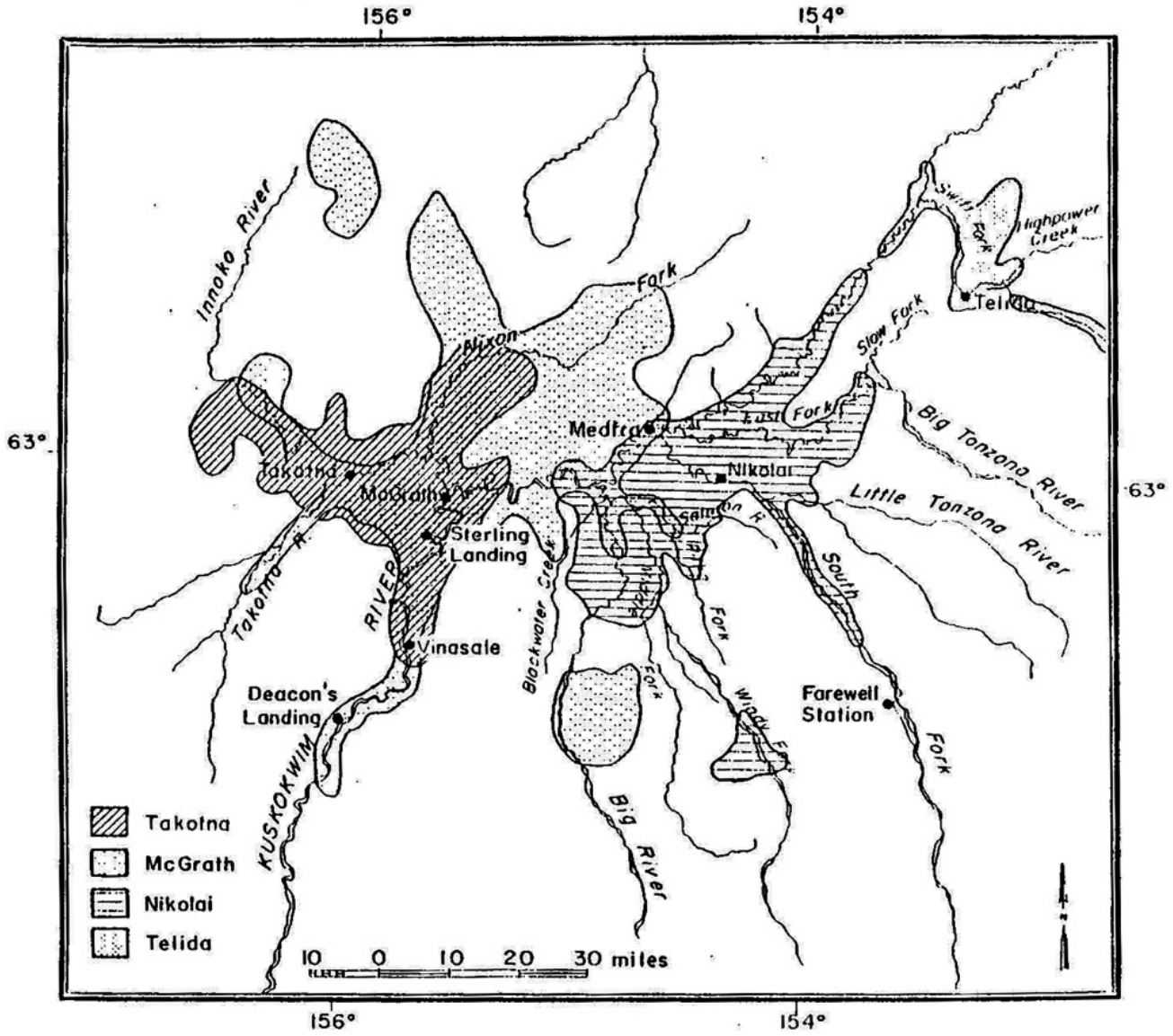

Figure 5.–Areas used by Nikolai, Telida, Takotna, and McGrath black and brown bear hunters, 1967-1983.

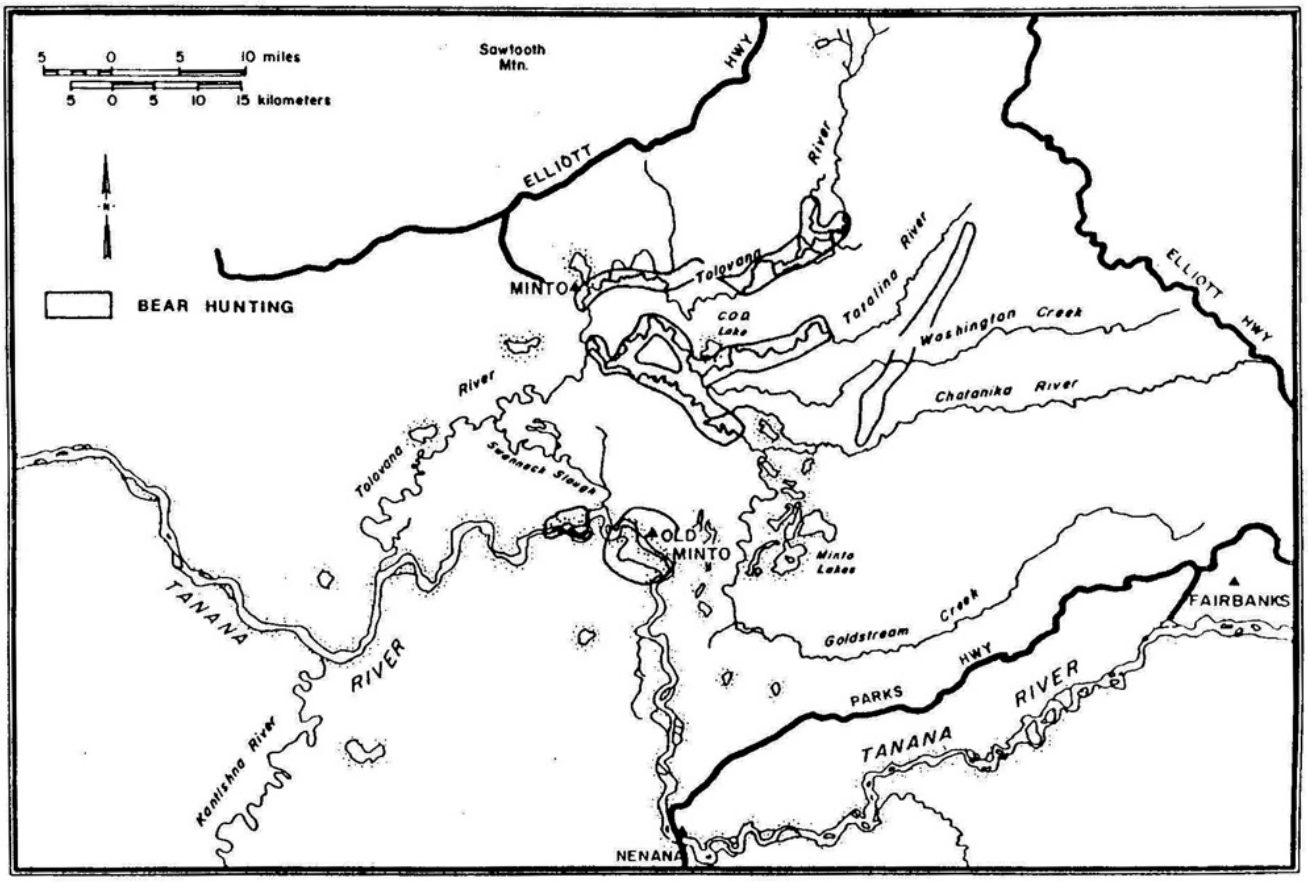

Figure 6.–Minto bear hunting areas, 1960-1984.

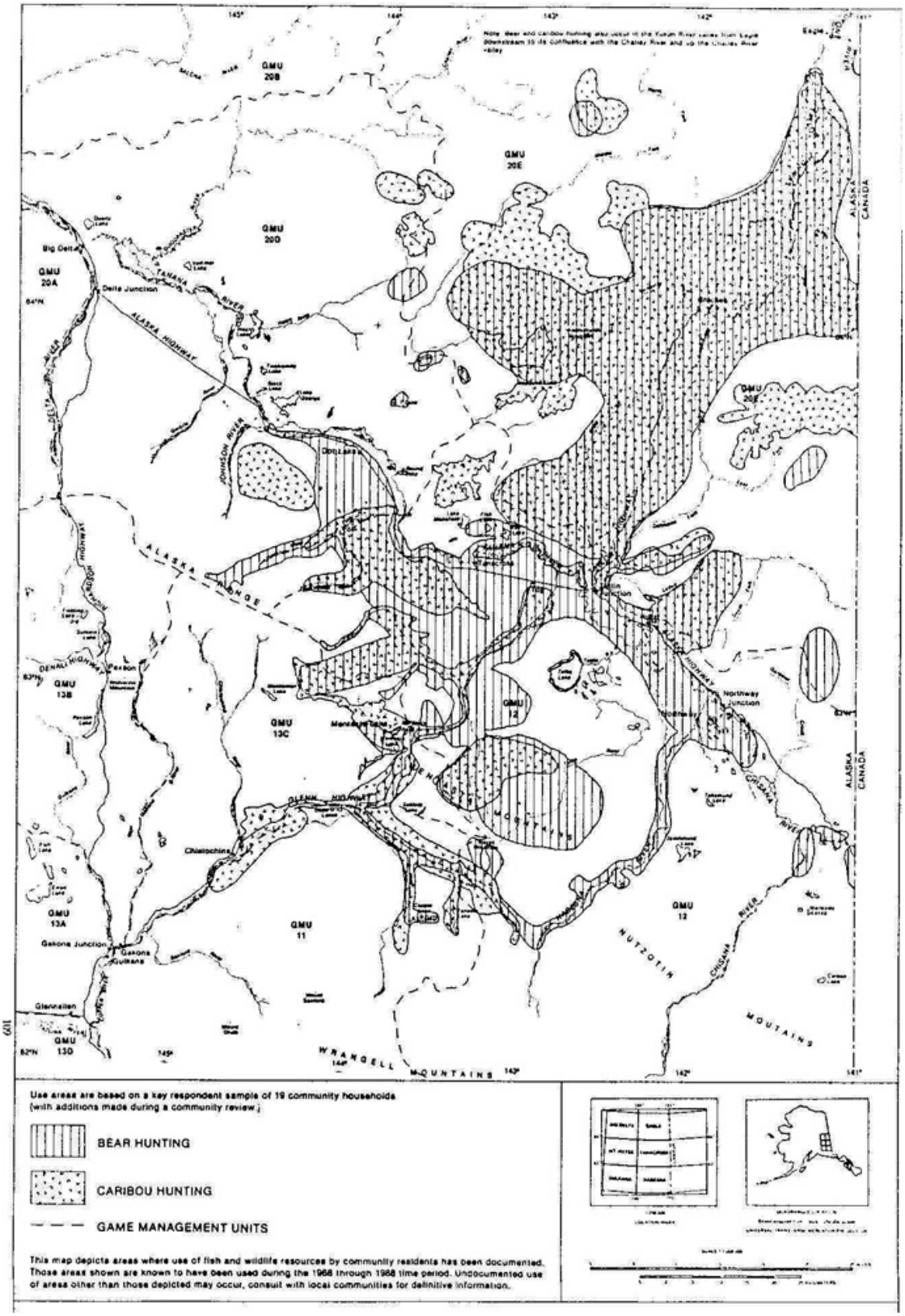

Figure 7.–Tok bear and caribou hunting areas, 1968-1988.

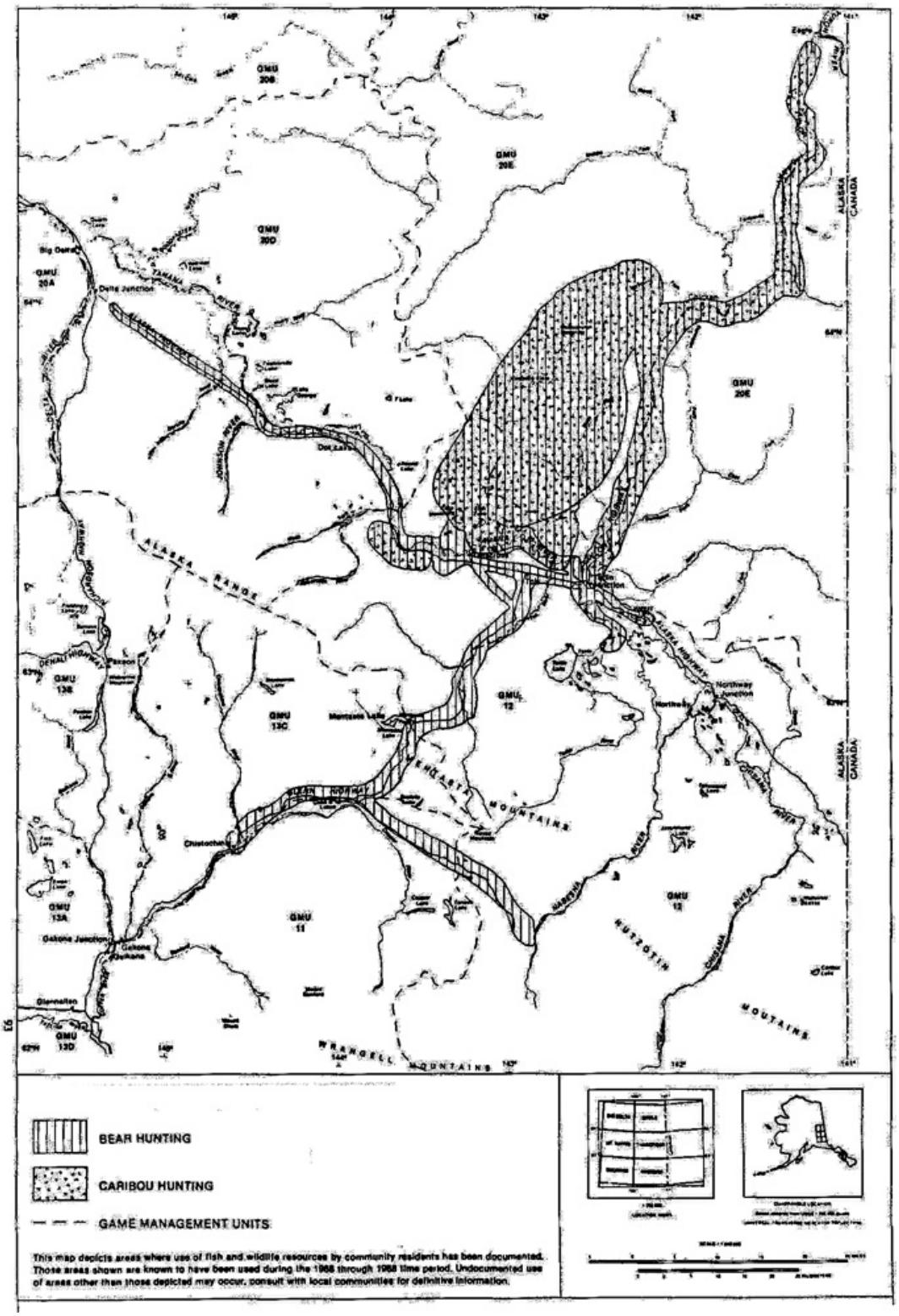

Figure 8.–Tanacross bear and caribou hunting areas, 1968-1988.

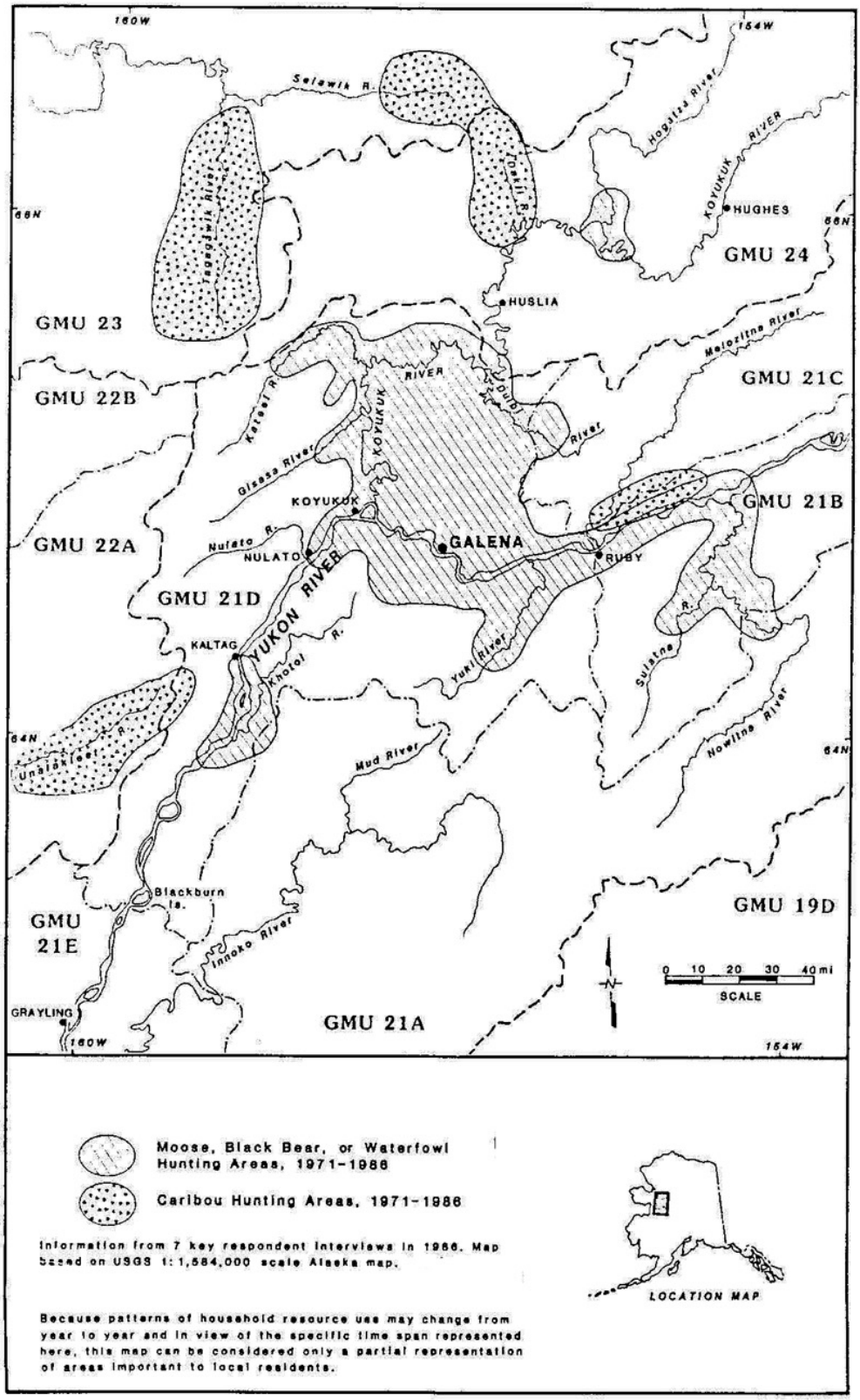

Figure 9.–Galena moose, black bear, waterfowl, and caribou hunting areas, 1971-1986.

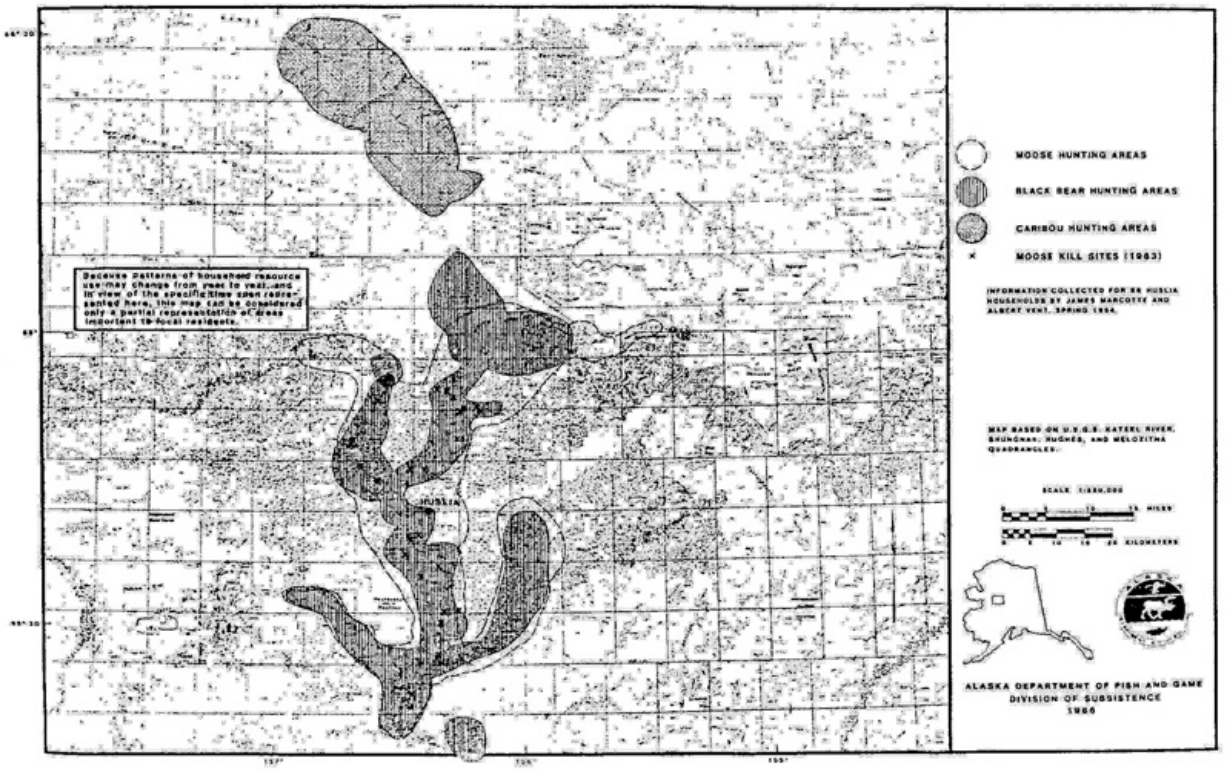

Figure 10.–Huslia moose, black bear, and caribou hunting areas, 1981-1983.

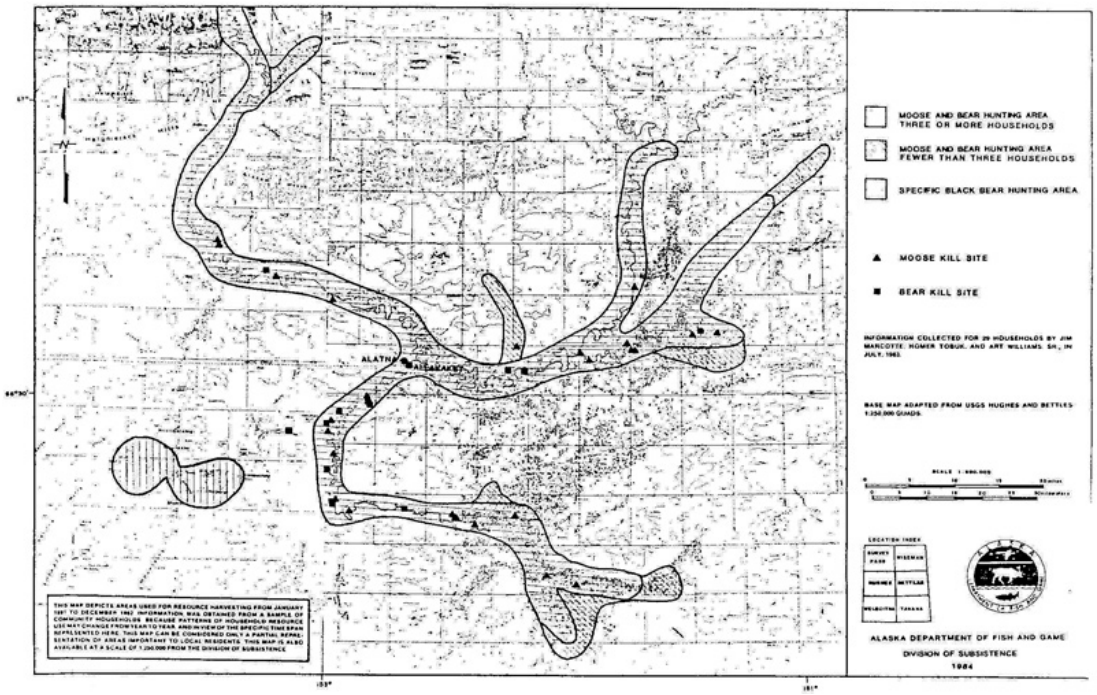

Figure 11.–Areas used by Allakaket and Alatna residents for moose and black bear hunting, January 1981-December 1982.

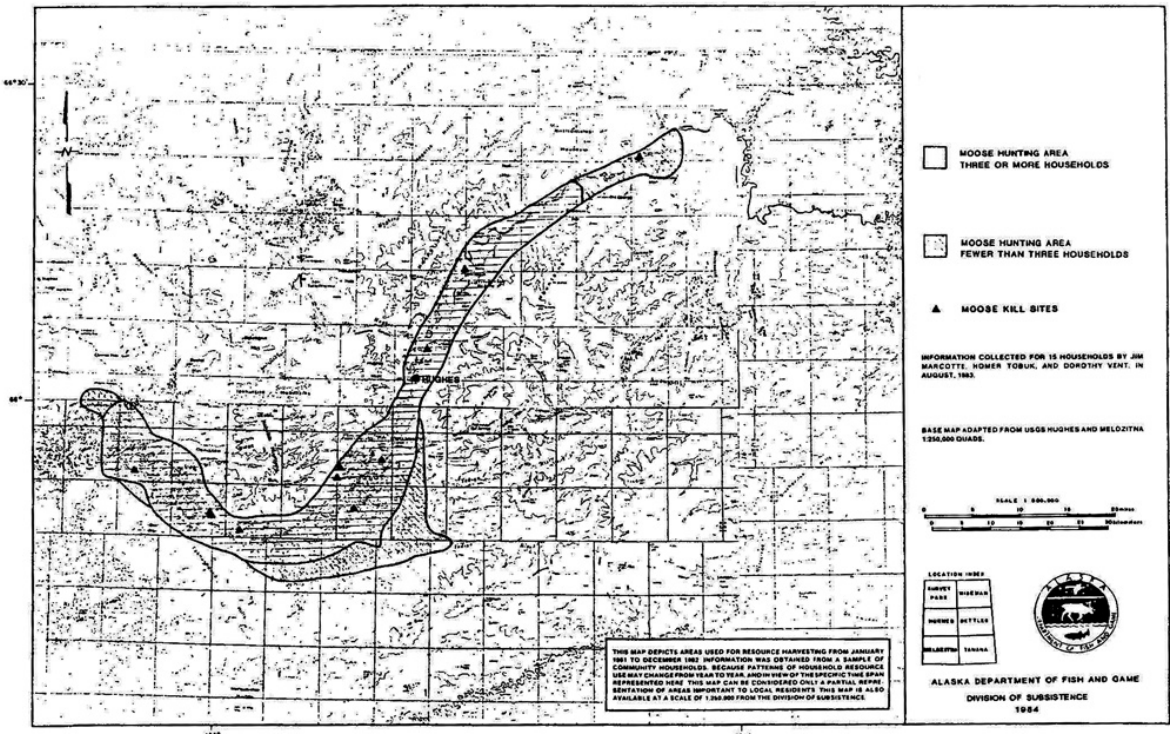

Figure 12.–Areas used by Hughes residents for moose hunting, January 1981-December 1982.

APPENDIX A.–LITERATURE EXCERPTS PERTAINING TO CUSTOMARY AND TRADITIONAL BLACK BEAR HUNTING AND USE PATTERNS IN INTERIOR ALASKA

Following are quotations from selected literature pertaining to customary and traditional black bear hunting and use patterns in Interior Alaska.

Andersen, D. B., C. J. Utermohle, and L. Brown. 1998. The 1997-98 harvest of moose, caribou, and bear in middle Yukon and Koyukuk river communities, Alaska. Alaska Department of Fish and Game Division of Subsistence Technical Paper No. 245, Juneau. http://www.subsistence.adfg.state.ak.us/TechPap/tp245.pdf

> There is significant annual and individual variability in denning dates for bears. However, in interior Alaska, most black bears enter their winter dens by mid-October and emerge from dens by mid April (J. Hechtel, ADF&G, Pers. Comm). This being the case, it is likely that some of the bears harvested in October, and most of the bears taken in November, December, and March, represent bears taken in dens, a practice still common among Koyukon Athabaskan[1] hunters. (Andersen et al. 1998:25)

Andersen, D. B., C. J. Utermohle, and G. Jennings. 2001. The 1999-2000 harvest of moose, caribou, and bear in ten middle Yukon and Koyukuk river communities. Alaska Department of Fish and Game Division of Subsistence Technical Paper No. 262, Juneau. http://www.subsistence.adfg.state.ak.us/TechPap/tp262.pdf

> An estimated total of 68 black bears were taken by hunters in the 10 survey communities (Table 9). Of these, Huslia hunters took 27 bears or 40% of the overall harvest. Black bear harvests consisted of 45 males (67%), 18 females (26%), and 5 black bears of unreported sex (Table 10). While black bear harvests were reported in all months except December, January, and March, the 4-month period August through November accounts for 88% of the black bear harvest (Fig. 4). Bears taken in November and February, and perhaps some of the October harvest, can be attributed to the regional practice of hunting bears in their dens. (Andersen et al. 2001:5)

Case, M., and L. Halpin. 1990. Contemporary wild resource use patterns in Tanana, Alaska, 1987. Alaska Department of Fish and Game Division of Subsistence Technical Paper No. 178, Juneau.

> Black and brown bear were occasionally hunted in their dens in the late fall, when the animals were still fat. (Case and Halpin 1990:21)
>
> At camps or in town, black bear were harvested if they became nuisances, but generally there was little hunting of black bear at this time of year [April and early May]. (Case and Halpin 1990:33)
>
> Black and brown (or grizzly) bear occur in the Tanana area. Residents noted that black bear were more numerous and visible along the river corridors and bottomlands, proving themselves nuisances at fish camps, while brown bear occurred more often in the uplands, and were considered to be more unpredictable and dangerous than black bear. Athabaskan (sic.) tradition attributes to the bear much spiritual power, and local men challenged themselves in former years by coaxing brown bear out of dens in the spring to hunt them with spears. Certain behaviors that would involve bear, such as

[1] Delegates representing the member tribes of the Tanana Chiefs Conference passed a resolution regarding the variety of spellings of the term chose "Athabascan" as the preferred spelling. Various spellings will be found in this report due to the historical nature of the literature.

women in their child-bearing years looking at or consuming bear meat, are traditionally hootlaanee (taboo). Both black and brown bear were hunted locally by those with a taste for the meat and grease, and use for the fur. The latter was used as ruffs and as bedding in trapping cabins. (Case and Halpin 1990:84,87)

Both black and brown bear were hunted primarily in fall, after light snowfall had covered the ground and tracking was feasible, but prior to denning. Fall black bear were preferred for their high fat content, and hunting usually occurred in late October, although some bear hunting coincided with moose hunting somewhat earlier. Some hunting was done in winter by coaxing bears out of their dens, and in spring, especially if meat for dogs was needed. The fur was considered prime in spring by some. Bears were occasionally harvested during summer if they were bothering fishing operations. (Case and Halpin 1990:88)

Hosley, E. H. 1981. Environment and culture in the Alaska Plateau. Pages 533-545 *in* Sturtevant, W. C., editor, Handbook of the North American Indians, volume 6: Subarctic. Smithsonian Institution, Washington, D.C.

[With respect to the Athabascan Indians of the Alaska Plateau region] Snares were used to take a variety of other game [other than caribou], from hares to grizzly bears and Dall sheep. In its several variations – spring pole, tossing pole, and tether snares – the snare was one of the most sophisticated and widely applied hunting devices of the Alaskan Athapaskans. Deadfalls and the bow…were also used to take a variety of animals, and the lance or spear…was widely used to kill denned bears and to stab moose and caribou from a canoe…as they crossed lakes or streams" (Hosley 1981:535).

McKennan, R. A. 1959. The Upper Tanana Indians. Yale University Department of Anthropology, New Haven.

Bears were formerly hunted much more than they are today. The combat was largely a hand-to-hand one, and the killing of a bear brought great honor to the hunter. In the summer the animals were brought to bay, often with the aid of dogs, and dispatched by spears; and the Indians maintain that the bravest hunters sometimes killed them with heavy clubs of caribou horn (cf. Weapons). Such hand-to-hand encounters were accepted methods of acquiring prestige among a number of the western tribes, including the Han (Schmitter, 1910:8), Peel River Kutchin (Osgood 1936b:27), Ten'a [Koyukon-speaking people] (Jette 1909:482); Ingalik [Deg Hi'tan, or Deg Xinag-speaking people of Unit 21E] (Osgood 1940:200,207), Tanaina (Osgood 1937:32-33), Eyak (Birket-Smith and de Laguna 1938:100), and Tahtan (Emmons 1911:72). (McKennan 1959:49)

A bear is sometimes lured to his death by the hunter's imitating the call of the raven. The bear responds thinking that some carrion is near and is promptly shot. In the winter, bears are poked from their dens and shot as they emerge. In the old days another interesting method was used when a bear was roused from his winter den. As he broke out through the snow two strong men would pinch him between two poles, and while they held him the other hunters would dispatch him with clubs or spears. This unusual device was also used by the Chipewyan (Birket-Smith 1930:24). (McKennan 1959:49)

Mishler, C., and W. E. Simeone, *editors*. 2006. Tanana and Chandalar: The Alaska field journals of Robert A. McKennan. University of Alaska Press, Fairbanks.

Old Joseph…reports killing a monstrous silver tip 'as big-as a moose.' He poked it out of its winter den and then shot it. The bear pretty nearly got Joseph and was only about ten feet from him when it finally went down. I [Robert A. McKennan] saw the skin and it was a monster. (Mishler and Simeone 2006:100)

Nelson, R. K. 1973. Hunters of the northern forest: Designs for survival among the Alaskan Kutchin. University of Chicago Press, Chicago.

Bears are of course seasonal animals, hibernating for several months during the winter. Even during the seasons when they are active and therefore readily hunted there are only certain periods when the Kutchin consider them fit for eating. Black bears are hunted especially during the fall, when they build up their thickest fat. They retire to their dens by late September, but remain fat and tasty through the winter. After they emerge from their dens between mid-April and early May, food is scarce and they become lean. By June they are thin, and the Indians do not hunt them. (Nelson 1973:115-116)

[With respect to bear snaring] It takes little more than the thought of facing a bear at close range with a bow and arrow or spear to make one understand why snares were an important method for killing these animals in aboriginal times. Snares were highly effective and required almost no risk to the hunter. Today's adult Kutchin are all familiar with bear snaring techniques, but if they still catch bears this way they do not consider it a matter of public information. The best time for snaring bears is during the fall, when they are fat and seem to wander along well-defined trails. They could be snared during the spring as well, but no one every mentioned doing this. (Nelson 1973:116-117)

The aboriginal Kutchin made their snares from braided strands of babiche, but in recent times 1/8-inch or ¼-inch aviation cable was found to be more effective. A homemade cable snare works well unless the bear does not pull it tight and is able to slip it off with its claws. Commercial snares are provided with one-way choking locks and cannot be removed. The human scent is eliminated from a cable snare by boiling it with willow bark or by rubbing it with the tips of spruce boughs. (Nelson 1973:116-117)

The bear snare is usually set in a trail, either a man-made trail intended for winter travel or a natural game trail. It is generally placed where a constriction is created by bushes or trees, so that the snare fills the whole trail, so that the bear is forced to go underneath. A snare set under a log is very effective, and is easily tethered to the log itself. Instead of using a fixed toggle or anchorage, a bear snare is attached to a flexible young tree, to a sizable log, or to a log placed between the crotches of two trees on opposite sides of the trail. In the last case the anchor is a crosspiece which cannot be dragged off, but the bear may simply chew the log in half and escape. The loose log toggle is dragged away into the brush until the bear finally chokes itself. Many a snare has been broken, however, leaving the bear with a snare collar as a memento of this escape. (Nelson 1973:116-117)

A typical snare set for black or grizzly bear would be made along the lines described earlier for moose snares. After finding a suitable place on a trail and selecting a fixed or loose toggle, the Indian tethers his snare so that it hangs in the middle of the pathway. It is opened to a loop varying from 20 to 24 inches in diameter, with its bottom edge 24 to 30 inches above the ground. The cable snare is held open by tying it in several places to slender sticks pushed in the ground beside it. Short pieces of grass or thread are used to make the ties. (Nelson 1973:117)

The trail is usually wider than the snare's loop, and so a few sticks 4 or 5 feet long are set up on either side of it to block the way around. One or more sticks are also pushed into the ground right under the snare, reaching almost to its lower edge, to keep the animal from going under it. (Nelson 1973:117)

[With respect to den hunting] Black bears spend approximately seven months of the year hibernating, and grizzlies occupy their dens for four to five months. It is not surprising that over the centuries northern Athapaskans have amassed great knowledge of the bears' denning habits and have developed effective methods of hunting them in their winter quarters. Northern Athapaskans are masters of den hunting, just as they are expert hunters of moose. The Koyukon Indians point out that these are the two skills in which they surpass their neighbors, the Kobuk Eskimos.

Den hunting must have been very important in the aboriginal past, when it afforded an easy means of killing bears with only a spear or bow and arrow. Rifles have replaced traditional methods, but den hunting is still important. This is especially true among the Koyukon, who live in a country rich in bears. They are highly skilled in den-hunting techniques and enjoy bear meat so much that they put considerable effort into the early winter hunts. Den-killed bears are the fattest and best tasting of all; so it is little wonder that the people want them.

As was noted earlier, black bears go into their dens by late September. The date is variable, depending on the weather. They start working on the dens sometime in September, and occupy them intermittently until really cold weather signals the time for uninterrupted hibernation. Grizzly bears enter their dens much later, in November or December, and may become active during midwinter warm spells. They seem to take hibernation much less seriously than do black bears.

The Koyukon and Kutchin Athapaskans often find bear dens by accident, stumbling onto them when they are traveling through the brush at any time of the year. Once they have discovered a den they check it each fall. The Koyukon usually consider each den a sort of property, 'owned' by the man who discovered it or learned of it from his father. Thus people speak of 'Sam's den,' 'Henry's den,' and so on (G. R. Bane, personal communication). The Chalkyitsik Kutchin do not formalize ownership in this way. Each hunter knows the location of many dens, and they are hunted on a first-come, first-served basis. The only kind of 'ownership' here is established by men who find dens and keep their locations secret, thus ensuring themselves a private potential resource. (Nelson 1973:118)

Each fall or early winter a hunter is likely to go out and check the dens he 'owns' or knows about to see if any are occupied. There are several ways to find previously undiscovered dens or to pinpoint known dens once their general location has been

ascertained. In the early fall, when bears have selected a hibernating site but are still active, they will remain in the immediate area digging up the moss and dirt searching for roots. When an Indian comes across this kind of sign in September, he knows that a bear is probably going to hibernate in that area. This is the best indicator that a denning site is nearby, but of course much searching may be required to find the site itself.

Black bears like to make their dens in places where they get some help from nature. Most dens are under partly overturned trees, whose roots have lifted the earth and moss to create a bear-sized cavern underneath. They also like to dig dens in banks, such as along a steep-sided creek bed. Another good place for denning is a sandy knoll or ridge, where caverns are easily dug out. In general, holes beneath upturned spruce trees seem the most likely den sites, and these are perhaps the easiest kind to locate. One such den that I saw was about 5 feet long, 4 feet wide, and 2 ½ feet high.

A black bear prepares its den by gathering moss and grass from the surrounding areas and lining the interior with it. The entrance will be plugged with the same material later on. Thus, if a hunter comes across a place where the moss and grass are freshly dug up and scraped away it is a sure sign that a bear den is nearby. If such a place is discovered before snow falls the bear is likely to be away foraging, and so the hunter remembers its location and returns later. When snow covers the ground, dens are much harder to find. A small hole usually remains open in the snow above a den, however, and heavy frost covers the surface and any vegetation around its opening. The frost is formed by condensation from the bear's moist breath. (Nelson 1973:119)

Sometimes very special knowledge and alertness leads to the discovery of a bear den. For example, Simon Edwards of Huslia once came upon a set of tracks from a running fox. He followed them a short distance and found a place where the fox had sat down for a while, looking back over its trail. Simon wondered what had frightened it, and why it sat watching back the way it had come, so he followed the trail the opposite way. He found shortly that the fox had encountered a bear den and was frightened away by its occupant. Simon got the bear. (Nelson 1973:119-120)

Another time this same man was walking along on snowshoes and came to a place where a marten track crossed the trail. Thinking he might find the marten in a burrow, he sidetracked and followed it. At one point he noticed that the animal had dug into the snow before moving on, and next to the hole he found a single blade of grass the marten had pulled up onto the snow. The grass was a kind that bears use for bedding in their dens, and so he poked around further and discovered that the marten had dug right into an occupied bear den. The reward for his effort was fat black bear. (Nelson 1973:120)

The Koyukon and Kutchin use different techniques for bear den hunting. The following account of the Koyukon method is based largely on information supplied by G. R. Bane, who has lived among these people for several years.

Having located a denning site, the Koyukon hunter first needs to learn it if is occupied or empty. He finds a long stick which he can shove into the den's opening. It should be curved because bear holes have a tendency to go down, then turn off to one side. He pokes around inside until the stick touches the bear, disturbing it enough so its movement can be felt. If the hunter is not sure, he holds the stick against what he thinks is the bear and its breathing will move the stick back and forth. Listening closely, the

hunter may also hear the animal's breathing. Once he has ascertained that a bear is inside, the Indian puts his stick to another use. He takes note of the exact direction the passageway runs, and just how far in the stick goes before it touches the bear. Then he pulls it out and lays it on the ground or snow. Its end should mark a point right above the animal.

After he knows the bear's location, the hunter finds several large poles or logs and plugs the entrance with them. These may be tied securely in place to be sure that the animal cannot escape. This done, he uses his ax to chop into the roof of the den so he will have an opening through which to shoot. This can be quite a job, since he wants an opening about 6 inches in diameter and may have to chop through 2 feet of frozen ground. If it is too dark in the den, he can toss a handful of snow on the bear so that a white dusting makes it clearly visible. Once he sees it well, the Indian shoots it in the head. In former times he would kill it with a spear. After a bear is killed in its den, a rope is used to pull it up through the entrance. (Nelson 1973:120-121)

The Black River Kutchin use a simpler but more dangerous method of killing bears in their winter dens. Once they are certain a bear is inside, they start poking and jabbing at it with a long stick. Eventually the animal becomes unsettled enough to come out after whatever is tormenting it. When it starts moving up the entryway the hunters stand ready with their rifles. Black bears come out slowly and are either shot in the head when they first emerge or shot in the heart after they get about halfway out.

This method is much simpler than the Koyukon technique. It requires less physical labor, since there are no holes to chop and the dead bear does not have to be dragged out of the hole. And the method can be used when a den is dug into a bank, where there is no way to chop down into it. It does involve a somewhat greater risk, but so long as the animal is a black bear the Kutchin feel that there is no danger. Herbert John said he once knelt on top of a den and killed the emerging bear with his knife. (Nelson 1973:121)

Grizzly bears can be killed by driving them from their winter quarters, but the Indians treat them in a different way. Whereas a black bear comes out slowly, not looking for a fight, the grizzly angrily charges out, trying to get anyone it can. The Kutchin say that grizzlies do not really hibernate; 'Maybe he don't even go to sleep in there.' Thus if a grizzly den is found, the hunter must expect trouble unless he decides to be prudent and leave it alone. One of the first things a Kutchin will do upon locating a den, therefore, is decide whether it belongs to a black bear or a grizzly bear.

Black bear dens have fairly small openings, about 2 feet high and 3 feet wide, whereas grizzly dens are higher and wider by about a foot. There is also a tendency for the black bear to plug the opening of its quarters, or at least narrow its size considerably, whereas grizzly bears leave the opening wide enough to move in and out. A grizzly is also likely to growl when anyone walks near its hole, which black bears apparently never do. (Nelson 1973:121)

The Chalkyitsik Kutchin say that it is often unnecessary to coax a grizzly from its den, because the animal may charge out before a hunter has a chance to do anything. Otherwise, a grizzly would be hunted in much the same way as a black bear. Actually,

the Kutchin fear the grizzly and rarely eat its flesh, and so they seldom take the risk of hunting this animal from its den. (Nelson 1973:121-122)

[With respect to spring and summer hunting] Most bears are killed when encountered by hunters traveling overland during the early spring or going along the river in boats during the summer and fall, or when the animals appear close to an occupied camp or village. Spring is the best season for bears because they still retain some fat from the winter and they are almost completely unafraid of people. In the fall they run if they sense a man nearby.

The black bear usually leaves his hibernating place after the snow disappears in late April. If he is not well fattened when he enters his den, hunger drives him out earlier. During May and June an Indian never goes anywhere without a rifle or shotgun because he knows a bear could turn up unexpectedly. A number of black bears were sighted within 200 yards of Chalkyitsik in the spring of 1970. When the people lived in muskrat-hunting camps during the spring, they could count on frequent visits from bears attracted by the smell of meat. The Indians also know of many areas that are especially good for bears during the spring, and they sometimes go to these places to hunt for them.

Some bears run when they see a snowmachine or dog team, but others will merely stand and watch. The snowmobile hunter can stop and take a shot if he gets within range, but with a dog team things are not so simple. If there is no snow on the lakes, a hunter cruising the ice looking for bears cannot hope to stop his team once the dogs spot an animal. All he can do is let them chase the bear, then jump off the sled and try to shoot before his dogs reach it. When an Indian finds very fresh bear sign but there is not enough snow to track the animal, he may try to attract the animal by using an old technique. He conceals himself and imitates the call of a raven. If the bear is nearby it may think a raven has discovered carrion and come straight to the sound, expecting to find a free meal. (Nelson 1973:122)

Dogs are sometimes used to run down a bear that escapes into the brush and cannot be caught in any other way. They might be released from the team after a bear is spotted, or a hunter might go out from the village on foot, taking his dogs along to help him. In the old days a man would take several dogs when he hunted, and they would course through the woods searching for a scent. When dogs catch up to a black bear it will climb a tree to escape them. Grizzlies stay on the ground and always stop to defend themselves against the biting dogs. If a hunter hears all of his dogs barking at one place, he knows they have found a bear, moose, or porcupine, and he goes quickly to get whatever game they have brought to bay. (Nelson 1973:122-123)

Bears are also hunted from boats during the open-water season. A number are usually taken during the fall moose hunt, when the Indians see them along the river. Some bears are wary enough to run when they see a boat coming, but others are unafraid. Bears are also shot by hunters traveling on the river in spring, often by duck hunters in their little canoes. (Nelson 1973:123)

The Chalkyitsik Kutchin prefer to shoot bears in the heart, perhaps because this was always the best shot with a bow and arrow. Heart shots can be very dangerous, however, because when an animal is hit in the heart it often runs a fair distance before

dying. This could mean a charge at the hunter. The Eskimos and the Koyukon Athapaskans warn against shooting bears in the heart, preferring shoulder or neck shots, which instantly incapacitate the animal. They advise heart shots only if a light rifle such as a .22 is being used, when there is no chance of shattering the animal's shoulder or neck bones.

The Kutchin are aware that neck and head shots are deadly, but correctly point out that these are very small targets. If they are close to a bear, they may shoot for the neck vertebrae or the occipital condyle (where the head and neck join). But only an expert takes these shots, because if they miss the bone the animal is wounded and enraged. If a bear charges or comes straight toward a hunter, he shoots it in the chest between the forelegs, or in the head. The Kutchin prefer heavy rifles, such as .30-06 caliber, for shooting bears. Black bears can be killed with a .22 rifle, but this requires a perfect hit in the occipital condyle or heart. Shotguns afford good protection from bears if they are used a close range and are aimed for the animal's eyes, but they are not good for ordinary hunting. (Nelson 1973:123)

The Koyukon suggest that the best shot for a big bear angles from the shoulder to the hip. This gives maximum crippling potential and is likely to do considerable internal damage. Like the Eskimos, they prefer shoulder, backbone, or neck shots. They advise shooting a black bear in the ear if a .22 rifle is used. Eskimos prefer ear or heart shots with a .22, and have killed both grizzly bears and polar bears in this way.

It is difficult to understand why the Kutchin prefer heart shots over hits which are more deadly and crippling, particularly in view of the dangers involved. They never mention shoulder shots as the correct way to shoot any animal, and apparently consider them poor because they damage some of the meat. Needless to say, Kutchin hunters must always be alert for a charge, especially if they shoot a grizzly. The Indians say that if a bear charges it is best to stand still and aim at the bear, waiting until it is close enough for a certain shot. Both the Kutchin and Koyukon warn that a wounded black bear or grizzly bear may wait in concealment for a hunter to follow, then attack when he comes along. (Nelson 1973:124)

Nelson, R. K., K. H. Mautner, and G. R. Bane. 1982. Tracks in the wildland: A portrayal of Koyukon and Nunamiut subsistence. University of Alaska Cooperative Park Studies Unit Anthropology and Historic Preservation, Fairbanks.

Before the introduction of firearms, bears were hunted and killed with spears (pana in Eskimo). It required a particularly brave man, armed only with a spear, to rush an adult bear and then to taunt the bear into attacking. As the bear rose up to lunge on his tormentor, the hunter planted the butt of the spear in the ground and aimed its point so that it would enter near the collar bone of the bear. As the bear fell onto the spear the hunter rolled away, hoping the bear would be unable to continue the attack. Occasionally a party of men would attack a bear, thereby increasing the chance of success. The last known killing of bear with a primitive spear in the Koyukuk Valley area occurred during the late 1800s, according to an elderly Native informant.

The Koyukuk Athabaskans of the past employed a special snaring technique for the harvesting of black bears. This technique was used primarily by men too old to participate in the more active means of taking bears. The bear snare (gaabeelh)

consisted of a rawhide line made from bearded seal skin obtained from Kobuk Eskimos, a willow loop, and a special birch bark basket with seams overlapping in a clockwise pattern.

The snare was placed in a tall straight spruce tree near a well-traveled bear trail. All branches of the spruce tree were cut off of one side flush with the trunk to a height of approximately 12 feet. The birch bark basket full of fish was hung on a branch just above the trimmed area. The rawhide line was secured at one end around the tree trunk under the basket with the other end extending down to an elongated willow loop which held it out horizontally from the trunk. The rawhide line formed a noose of approximately 18 inches in diameter, which was supported by the willow loop. This snare was set approximately 9 feet above the ground.

A bear smelling the fish and seeing the basket hung in the tree would climb up the trimmed area, pushing his head through the willow loop and its supported rawhide noose. As it descended, the noose, tied with a special non-slip knot, would tighten and kill it. Bear snares were set in the latter part of August and were checked each day by the owner. (Nelson et al. 1982:44)

Bear hunting among the Koyukuk Athabaskans is an activity that far transcends the meeting of simple biological needs. To these people the bear is invested with particularly powerful spiritual powers and, when carried out by culturally prescribed methods, the killing, treatment, and consumption of a bear is literally a religious act. Thus it is impossible to accurately describe Koyukuk bear hunting without including supernatural beliefs and prescribed behavior.

According to Native custom, a man planning to hunt a bear must not verbalize his plans. He must also never speak in a boasting manner about his successes in such hunts or in any way demean the bears he has killed. To do so would insult the bears and the hunter would soon lose all of his luck, possibly going for years without finding another bear. According to Koyukon belief, a bear must favor a hunter before it allows him the opportunity to kill it.

In all elements of subsistence, but particularly in bear hunting, luck plays a very large part in the eyes of the Koyukuk Athabaskans (see chapter 12). Without luck, or the proper relationship with the environment, skill is worthless in bear hunting. The bear will reveal himself only to those it favors. One man may walk right by a bear and never see it while another will easily spot it as though drawn to the spot. According to the Koyukuk Athabaskans the difference is summed up in the work ‘luck’. (Nelson et al. 1982:45)

The fall bear hunt immediately after freeze-up is the high point of the male seasonal activities. Parties of several men leave the village on foot carrying packs containing their necessary camp gear. Very little food will be taken, as the hunters expect to live off the land. Light tarps are carried in place of bulky tents. The bear hunting party roams the flats and foothills, camping in particularly promising areas and spending two or three days carefully searching the local terrain for bear dens or signs of recent bear activity. (Nelson et al. 1982:45-46)

Bear dens may occur in a variety of places, but Native hunters have learned that bears tend to den on dry well-drained land. The exposed roots of large spruce, thick patches of diamond willow, and sandy banks are particularly favored by bears. As the hunters search, they watch for patches of moss that have been pulled from the earth or tall grass that has been torn away. They also look for crude nests which bears often make near a den they are excavating. All of these signs indicate that there is an occupied den in the nearby vicinity.

Over the years a great many bear dens have been discovered by Koyukuk hunters. When a man discovers a new bear hole and takes a bear from it, it becomes known as his den: that is, 'Joe's bear hole.' Other hunters usually allow the 'owner' of a known bear den the opportunity to be first to check it each fall. The locations of particularly productive bear holes are passed from father to son. As men search for bears in the fall they characteristically check all known bear dens in the vicinity. Usually, a great many old dens must be checked before one is found that is occupied.

As two or more hunters progress separately through an area, they maintain contact by occasionally striking a tree with a stick. It is forbidden to yell back and forth as this will frighten off any bears in the vicinity. The only time one should cry out is when discovering an occupied den.

Once a den is discovered, and its entrance appears to be purposely plugged up, the hunter will sometimes cut a long curving rod to poke back into its tunnel. Most den tunnels curve before the nest area is reached. When the stick strikes something soft the hunter will hold it against the obstruction and try to detect any breathing movement. If the bear is not completely asleep it may rush out of the den, in which case the hunter must be ready to quickly respond and shoot it. If the bear does not leave the den, the hunter will carefully withdraw the rod and lay it on the roof of the end at the same angle it was injected into the hole. The end of the rod should be resting directly over the sleeping bear. (Nelson et al. 1982:46)

With the hibernating bear located, the hunter and his companions will sometimes cut heavy poles and brush and securely plug up the entrance of the den to prevent their prey from escaping. At the spot above the den nest, they will chop and dig a hole perhaps 6 inches in diameter. If enough light can filter through the hole, it may be possible to see the bear and to allow the hunter to shoot it in the head. Otherwise, a rod will be lowered to 'feel' for the bear. Once the bear is located, one hunter may hold the rod steady while another aims and fires his rifle along its length. (Nelson et al. 1982:47)

Often bears can be hunted in their dens by a much simpler method. The hunter simply disturbs the animal until it comes up into the den tunnel or pokes its head out the entrance, and then he shoots it. Or in many cases a hunter looks into the den tunnel, using a flashlight or torch to locate the animal inside. If he can see it clearly, he is able to aim and shoot effectively from the den entrance.

From time to time, one may discover a den occupied by a sow bear and one or two yearling cubs. These cubs are often two-thirds the size of a full adult. It is the obligation of the hunter to take all occupants of a den. If the bears did not wish to be taken they would not have revealed themselves, and to not take them would be an act of disrespect.

The slain bear or bears will be removed from the den and skinned on the spot. The small bone just under the tongue will be discarded. The intestines, heart, lungs, and any bone or other parts not to be taken should be burned to prevent other animals from defiling them. The hide may be kept, although it usually is not. A bear hide continues to have 'life' for three years, and so it cannot be used for clothing or anything else until this time has passed. Only women who have experienced menopause may scrape and tan a bear hide.

If a man or hunting party is some distance from the village and takes several bears, they will cache the meat and pack back only a small percentage of their kill. Later they will use dog teams-and, lately, snowmachines - to retrieve the meat. (Nelson et al. 1982:47)

According to custom, the man who actually kills a bear retains very little of the meat for himself, perhaps only a forearm or hindquarter. The ribs, fat, and other choice cuts are usually frozen and preserved for village potlatches. It is particularly important to have large quantities of bear meat for memorial potlatches. Other parts of the bear such as the neck, forearms, head, and paws are used to host a bear party in honor of the bear that has been killed. Bear parties, by tradition, are attended by males only and are usually held outside the village limits soon after the bear meat has been returned to the community. (Nelson et al. 1982:47-48)

Although bear hunting significantly declines after mid-winter, it does not cease entirely. When traveling overland via snowshoes, dog team, or snowmachine, a Native hunter is always alert to signs of possible bear dens. An air hole often forms in the snow covering a bear den. The snow around the hole is usually stained yellow. If a man sees such a sign, he will dig out the den and harvest its occupant. As a man travels along a trail with his dog team he notes the dogs' behavior. The writer [Ray Bane] drove his team of dogs along a well-packed trail daily for over a week and noticed the team sniffing the air and glancing off into a patch of birch trees each time a certain point was passed. This observation was discussed with a local Native hunter who then spent several days searching around the area until he found and killed a bear in a snow-concealed den. Small predators, such as marten, weasels, and foxes, are often drawn to a bear hole by its odor and may walk up to it and circle it out of curiosity. A hunter, seeing where such creatures have deviated from their general path of travel and circled such a spot, will suspect a bear den. As mentioned earlier, to find a bear den obligates the hunter to harvest its occupants. (Nelson et al. 1982:48)[2]

Summer bear harvest usually consists of simple chance encounters with bears while carrying out other activities such as checking fish nets, cutting wood, or traveling by boat. There seems to be less emphasis on the taking of bears at this time. (Nelson et al. 1982:48)

[T]he brown bear is the one animal that is killed both for use as food and for self protection, being considered too dangerous to have in areas where people regularly

[2] "It has been noted that the Koyukuk people are particularly conservation-conscious in the harvest of most furbearers, particularly those species which are non-migratory. Beaver are considered to be especially vulnerable to over-harvest, and most trappers will pull their sets from a beaver house after two adults have been taken. Wolf, wolverine, and fox are considered to be less affected by trapping, and little effort is made to limit the take of these predators. The custom of recognized traplines encourages men to practice conservation so as to maintain a sustained yield from their territories" (Nelson et al. 1982:60).

camp or travel. It is also disliked for its habit of killing black bears in their dens. (Nelson et al. 1982:227)

If a bear is taken from its den, the men eat certain parts together and save others for a later 'bear party' outside the village. Some highly preferred portions are set aside for village potlatch feasts. The successful hunter keeps only a small amount for use in his own household. Sometimes the successful hunter in a group keeps nothing at all for himself. (cf. Loyens 1966:41; cited in Nelson et al. 1982:235)

The Koyukon have greatly elaborated their knowledge of bears, which in some past times were the only big game animal available to them. Their fund of information on bear denning is especially remarkable. This knowledge is used to locate dens by recognizing subtle clues, to learn if dens are occupied and by what sort of animal, and to succeed in taking these animals when they are found.

Expert hunters are able to find dens by detecting bear tracks in the frozen moss beneath as much as 2 feet of undisturbed snow, and by spotting miniscule disturbances, such as incongruous bits of grass or cracked twigs. If a den is located (and this may require days of searching), there are equally sophisticated means of investigating its occupant and eventually making a kill. Careful studies are made of the den and its surroundings, but sometime the hunter must enter an inhabited den to accomplish his task. By putting his head just inside a den's entrance and listening carefully, he may hear the bear licking its chops or breathing, or he may detect its heartbeat growing steadily louder and faster. In the latter case, he knows that he has found a young animal, its pounding heart registering fear. Older bears do not react this way because they are unafraid. Knowing that young animals are more likely to flee a den after disturbance, hunters keep a close watch on the entrance until the hunt is over. (Nelson et al. 1982:246)

Some other rules for proper behavior toward animals can be exemplified by listing a few of the regulations for the treatment of bears. There are rules for proper butchering: a bear's eyes are always removed and the eyeballs slit so that it will not see if the hunter errs in following any taboos; rules for the proper care of the meat: dogs must never eat bear meat because it is disrespectful and because it would make the dogs mean; and the rules governing who eats the animal or parts of it: bear brains are never eaten, because it would cause a person to anger easily. Women cannot eat from the front quarters of black bear, and are completely forbidden to eat brown bear meat.

There are also rules for the disposing of unusable portions: edible parts of the animals must be used, to begin with, because waste is profoundly disrespectful. Bear bones should be burned or hung in a tree out in the woods. There are rules for using hides: bear skins should never be stepped on or over by women and are often disposed of in the woods to prevent all female contact. Another set of rules pertain to a 'bear party' which is similar to a funeral and must be held by men, outside the village, whenever these animals are taken. Bear meat should be safely cached for several days or weeks so that it is fully and completely dead before being brought to a settlement (living things die slowly, not at the moment when normal life processes stop). Killed bears should never be dragged over the ground, or pulled from dens with snowmachines. (Nelson et al. 1982:260)

Spirit vengeance can be severe. For relatively minor offenses, bears become aloof or somehow invisible to the hunter. One man did not kill a single bear for 12 years following an infraction, another hunted unsuccessfully for 20 years. Still another man who kicked a bear neck across the floor and spoke badly of the animal was mauled to death soon afterward. (Nelson et al. 1982:260-261)

Taboos are often tested individually to see if they must be followed, although this is usually limited to the less spiritually powerful animals. Six men who were bear hunting together decided to test the taboo on eating a certain part of the bear's stomach. Elders warned that if young men ate this organ their moccasins would be slippery as they trekked through the woods in search of dens. Three young men ate the tabooed part, and three abstained. Next day the three violators had a terrible time, slipping and falling repeatedly, while the others had no trouble at all. Seeing that the taboo was right, they carefully followed it thereafter. (Nelson et al. 1982:263)

Implements such as sleds, fishnets, rifles, or snowshoes are also infused with luck. A man lamented to me the troubles he had with one of his rifles, saying that it would shoot a bear coming out of a den, at point blank range, but it only made a wound despite his high caliber rating. Another gun had to be used to make the kill. None of these problems were caused by malfunctioning, he explained, the gun was simply 'out of luck.' He said he suspected a young woman had stepped over it, rendering it useless. (Nelson et al. 1982:265)

Koyukuk people also know the landscape through a profusion of names. Some of these names are used primarily for location, as we use street signs. Others have special meanings derived from personal or traditional history. Hundreds of bear dens, for example, are known throughout Koyukon country, and many of these have special names. All of the dens that have been known for some time have personal associations, and when hunters stop to check them each fall, they often recall past experiences there. Some of these stories go back even to previous generations, and so the dens have become much more than just hunting places. (Nelson et al. 1982:299)

The first 3 or 4 feet of the intestines [of black bears or brown bears] are discarded, and the rest is turned inside-out so the fat is inside, then it is placed on a fire to roast. The result is a sausage-like delicacy. Only hibernating bears are used this way, because their intestines are empty. (Nelson et al. 1982:350)

Osgood, C. 1959. Ingalik mental culture. Yale University Department of Anthropology, New Haven.

The Man Who Slept in a Bear Hole: Once a man went out in the fall just before the first snow to hunt for a bear. The weather was cold. He found a bear hole at last, killing the bear and skinning it. Then because it was too cold he crawled into the bear hole which seemed like a nice place to stay overnight. He piled grass over the opening to keep out the air and went to sleep. When he woke up from time to time, he turned over. At last he woke up, but he felt strange. The flesh of his face was drawn tightly over his cheekbones. He listened a moment and could hear flies at the door. It was spring. 'Did I sleep all winter?' he asked himself. Then he went out. He found the remnants of his bear meat with flies all over it. He felt very weak and it took him a long time to walk home. The people were surprised to see him. They had hunted for him all winter.

Someone asked, ‘Didn’t your father tell you not to sleep in a bear hole?’ That is why people do not go into bear holes. (Osgood 1959:146)

Osgood, C. 1971. The Han Indians: A compilation of ethnographic and historical data on the Alaska-Yukon boundary area. Yale University Department of Anthropology, New Haven.

Schmitter (1910:10) writes of the Han: ‘One of their most useful weapons, the spear, was made by binding a hunting knife of caribou-horn to the end of a pole about 6 feet long.’ This is an almost identical description of the lance described by Jones (1872:323). Jonathan Wood at Moosehide spoke of a very similar weapon which he called a *t’at*, and said that it consisted of a birch pole five to six feet long, and of a convenient diameter to hold. At one end was a point made of caribou horn which he guessed to be about eight inches long, but he was not sure. This implement served to attack a bear that had been aroused from its den. Walter also knew of such a lance.

Then he [Wilson in Schwatka 1900] says of the Han of Eagle: ‘In Winter these Indians leave the river and scatter out in different directions in quest of game, principally moose and caribou, which, in reality, provide them with their only food. Besides these, however, great numbers of bears are found, particularly the black variety; also deer, mountain sheep, and rabbits. (Osgood 1971:103)

Black bears, their brown variation, and grizzlies are reported to have been killed and eaten in the Han area. Schmitter (1910:8) provides a clear account of the classic Athapaskan technique of killing bears with a lance. ‘A pike or spear is nearly always used in hunting bears. The hunter attracts the bear by making a raven-like noise, causing the bear, as the Indians say, to think the raven has discovered a dead moose. They also further explain that the big bears only would come, as the little bears would not know what the croaking meant. As the bear approaches the Indian holds the spear in position, facing the bear as it draws near to him, and as the bear springs the Indian sticks the spear into its throat at the top of the breast-bone, at the same time shoving the handle of the pole into the ground, thus causing the bear to spear himself with his own weight. Sometimes three men hunt in this manner, two of them attacking the bear on either side as it rushed forward. The meat of the young bear killed in the fall, when they feed on huckleberries, is considered a great luxury’. (Osgood 1971:110 citing Schmitter 1910:8)

VanStone, J. W. 1979. Ingalik contact ecology: an ethnohistory of the lower-middle Yukon, 1790-1935. Field Museum of Natural History, Fieldiana, Anthropology, Chicago.

[With respect to the Anvik-Shageluk area of Unit 21] Black bears were taken in snares or with deadfalls during the summer. (VanStone 1979:28)