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Customary and Traditional Use Worksheet, Black Bears, Game Management Unit 25

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**

Symbols and Abbreviations

The following symbols and abbreviations, and others approved for the Système International d'Unités (SI), are used without definition in the following reports by the Division of Subsistence. All others, including deviations from definitions listed below, are noted in the text at first mention, as well as in the titles or footnotes of tables, and in figure or figure captions.

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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by

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INTRODUCTION

BACKGROUND

The Alaska Board of Game made a positive customary and traditional use finding for black bears *Ursus americanus* in Game Management Unit (GMU) 25 on March 17, 2002, and established an amount reasonably necessary for subsistence of 150 to 250 black bears pursuant to Alaska Statute 16.05.258 (Subsistence use and allocation of fish and game) and Alaska regulation 5 AAC 99.010 (Boards of fisheries and game subsistence procedures)(Alaska Board of Game 2002).[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 Unit 25, specifically with reference to methods and means of black bear harvests in Unit 25 (Criterion 3, 5 AAC 99.010(b)(3)). The additional information was requested so as to better evaluate a deferred proposal submitted by the Yukon Flats Fish and Game Advisory Committee and the Council of Athabascan Tribal Governments to recognize in regulation customary and traditional harvest practices of black bear.

This revised customary and traditional use summary for black bears in Unit 25 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.

Black bears have been a valued source of food and fur in Interior Alaska from the prehistoric period to the present (Hosley 1981; Osgood 1970). Among Gwich'in[2] Athabascans residing in the Upper Yukon-Porcupine river area of Alaska (GMU 25), various longstanding cultural traditions and beliefs surrounding the proper use and treatment of harvested bears speak to the length and consistency of black bear use (Caulfield 1983; Cruikshank 1986; Nelson 1973; Peter 1981; Slobodin 1981). Historical sources from the early contact period in the 19th century mention the use of bears by residents of the region (Schwatka 1900). Today, black bears continue to be an important commonly harvested subsistence resource in all Yukon Flats communities, except in Arctic Village, where they are rarely found (e.g., Hadleigh-West

[1] In 2002, the Alaska Board of Game established an amount reasonably necessary for subsistence uses by taking the average number of black bears harvested per capita from Division of Subsistence studies in Beaver, Fort Yukon, and Stevens Village (0.155 black bears per person) and multiplying this by the total human population of the Yukon Flats, minus Arctic Village, and then bracketing the point estimate of 203 black bears by 25%, which resulted in 152 to 254 black bears (Alaska Board of Game 2002).

[2] "Gwich'in" is now the commonly-accepted spelling, replacing "Kutchin."

1963:140-141). Division of Subsistence studies show that it is not uncommon for 30% to 40% of the households in Yukon Flats communities to be involved in the harvesting of black bears (Table 1; see also the ADF&G Community Subsistence Information System (CSIS)[3]; Sumida 1988; Sumida 1989; Sumida and Andersen 1990).

CRITERION 2: SEASONALITY

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

In GMU 25, black bears are hunted primarily in the spring, fall, and early winter (e.g., Caulfield 1983; Nelson 1973; Nelson et al. 1982; Sumida 1988; Sumida 1989; Sumida and Andersen 1990). "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" (Nelson et al. 1982:48). In areas within or near black bear habitat, black bear hunting continues after bears begin to emerge from their dens in April and extends through May. They are a notable resource in this area, often being the only large animal available at a time when winter food stores have been depleted and fresh meat is welcome.

In the fall, from late August through October, black bears are hunted in conjunction with or incidental to moose and caribou. Snaring of black bears was a particularly useful 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 the harvest. Black bears "retire to their dens by late September, but remain fat and tasty through the winter" (Nelson 1973:116). Immediately after emerging from dens in the spring, black bears have some fat for a short period of time. The flesh of black bears is considered best in the fall and early winter, when they have been feeding primarily on berries and when they have built up a thick layer of fat in preparation for the winter hibernation. Den hunting, or "denning," of black bears is still practiced; using this method, the harvest of bears continues through the winter (Caulfield 1983; Nelson 1973:115-116; Nelson et al. 1982:48; Sumida 1988; Sumida 1989; Sumida and Andersen 1990).

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[4] along trails, snares in trees, rifles, and the use of nooses to take swimming bears from boats (Hadleigh-West 1959; McKennan 1965:32-34; Nelson 1973; Osgood 1970; VanStone 1974). Dogs were sometimes used to track bears or locate dens (McKennan 1959:49). Bears were also called by imitating the call of a raven (e.g., McKennan 1965:33). Today, bears are commonly taken with large-caliber rifles or sometimes with snares (Nelson 1973).

Black bears are either specifically sought or harvested in conjunction with other harvesting activities (e.g., moose or caribou hunting, duck hunting in the spring). After the spring breakup, bears found along the edge of a river near muskrat camps are often taken from boats, or while spring waterfowl hunting, during open-water seasons near fish camps, during fall moose hunts,

[3] www.subsistence.adfg.state.ak.us/CSIS

[4] Black bear snaring in Interior Alaska is well-documented in the ethnohistorical literature (e.g., Nelson 1973:116-117; Nelson et al. 1982:44; see also McKennan 1965:33; Sumida 1988:141; Sumida and Andersen 1990).

and during wood cutting (e.g., Caulfield 1983:69; Nelson 1973:122,123; Nelson et al. 1982:48). Hunters typically access hunting areas by boat, all-terrain vehicle (ATV), snowmachine, or on foot. Formerly, snowshoes and dog teams were common means of access.

Black bears are also harvested by taking bears from the den[5]. Known denning sites are checked for signs of occupancy in the late fall and early winter. Many hunters know from the size of the den and signs around it if the occupant is a single animal or a female with cubs, 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 then shot as it exits the den. Occasionally, the entrance is blocked so as to slow the exit of the bear (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[6], which is typically done during the fall "when they are fat and seem to wander along well-defined trails" (Nelson 1973:116-117). Specific bear snaring techniques are discussed at length in Nelson (1973:116-117) and Nelson et al. (1982:44). For example, one technique involves 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.

> 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)

Black bears are often attracted to fish camps during the summer months when fish are being processed and stored. In major fishing areas, fish scraps are sometimes placed on sand bars away from the fish cutting site in an effort to divert bears away from the processing area. Occasionally, these bears are intentionally taken, although such bears are considered less desirable for human consumption due to the flavor of the meat during that time of year. Nuisance bears found near villages or fish camps are shot or snared as a safety measure (e.g., Nelson 1973; Sumida 1988:141; Sumida 1989).

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

[6] Hadleigh-West (Hadleigh-West 1963:162) observed that black bears were rarely present and therefore seldom used by the Netsi Gwich'in of the Arctic Village area, but did point out that snares were used to harvest bears, presumably referring to brown 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 and game population has been established.

Community use areas for black bears tend to fall into 2 categories: 1) specific near-community areas where black bear hunting is known to be productive at specific times of the year; and 2) river corridor areas where fishing and moose hunting activities take place and black bears are hunted in conjunction with or incidental to these other activities. Residents familiar with the use of black bears report that they have caught black bears in regularly-hunted areas as long as elders in their communities can recall and can recount stories of uses by previous generations. Hunting areas for black bears have been mapped for many individual communities (e.g., Caulfield 1983; Sumida 1988; Sumida 1989; Sumida and Andersen 1990).

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

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

Black bears provide an important source of meat, fat, and fur. Depending on particular customs, bear meat is eaten in the household, in the context of community gatherings, or in special celebrations.

Black bears are commonly butchered in the field and processed like other large game. The meat is shared with relatives, especially if fresh meat has been scarce. The meat is frozen, smoked, or canned for later use. The meat is also made into dry-meat by cutting thin strips of meat and allowing it to air dry. Bear meat is typically prepared by boiling, frying, broiling, barbecuing, or roasting. Black bear fat is highly valued, and is often rendered into bear grease or tallow. The grease is then used for cooking and making "Native ice cream" (a mixture of berries, sugar, fat, and sometimes dried fish). Bear fat is also eaten with dried meat or dried fish. The fat is often shared with other households, especially elders.

Some sources report patterns of butchering and sharing that depend upon the number in the hunting party, the hunter who made the kill, and the age of the hunters. The choicest parts, such as the hindquarters or organs (heart, kidneys, and intestines), are often given to elders.

> The first 3 or 4 feet of the intestines [of black or brown bears *Ursus arctos*] 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)

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.

> 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. (Nelson et al. 1982:47-48)

Bear skins are sometimes used for ruffs, mukluks, mittens, and camp or cabin bedding. The furs are also used as insulation around doors (cf. Nelson 1973). Black bears are considered to have the most waterproof skins (Sumida 1988; Sumida 1989).

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.

Gwich'in Athabascan tradition attributed great spiritual power to bears; there is an elaborate set of beliefs and values surrounding their harvest and use (Caulfield 1983; Cruikshank 1986; McKennan 1965:84,144-145; Mishler 1995; Nelson 1973; Peter 1981). For example, residents in some villages follow rules that prescribe who may eat bear meat, what portions may be eaten, how it is prepared, what should be done with the inedible parts such as the claws and skull, and proper ways of referring to or speaking about bears (Nelson 1973).

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 handle its products, is accomplished through participation in these activities under the oversight of those more experienced. 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 can be 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.

Typically, black bear meat is widely shared within hunting parties, families, communities, and even between communities. Often, a small number of select hunters are involved in the hunting of bears and provide bear meat to a large portion of the households in the community. Bear fat is highly prized and commonly shared between households.

Certain prized black bear parts, such as the hindquarters, the organ meats, and the fat, are often given to elders. Bear meat is often considered a specialty food and served at special communal gatherings and ceremonial potlatches (e.g., Nelson et al. 1982:47-48). Traditional beliefs in some Interior regions restrict the eating of bear meat to men and elderly women. These beliefs tend to limit or structure the sharing and distribution practices for this resource.

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 fish and game resources and that provides substantial economic, cultural, social, and nutritional elements of the subsistence way of life.

Black bears are just one of the many wild resources that are typically harvested for subsistence uses by GMU 25 residents. As large game animals that are widely distributed throughout the Interior, and that have has relatively liberal hunting seasons and bag limits, black bears often

rank among the top resources harvested by hunters in terms of pounds of meat per household. Other major resources harvested for subsistence in the interior include salmon *Oncorhynchus*, moose *Alces alces*, caribou *Rangifer tarandus*, various species of whitefishes, northern pike *Esox lucius*, burbot *Lota lota*, and a variety of small game, waterfowl, plants, and berries (see the ADF&G CSIS).

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TABLES AND FIGURES

Table 1. – Black bear harvests, Game Management Unit 25, 1984-1987.

Community	Year	Percentage of households harvesting	Estimated total number harvested	Lbs per capita harvest
Beaver	1985	10	10	4
Fort Yukon	1987	31	150	7
Stevens Village	1984	40	17	19

Source ADF&G Division of Subsistence survey data.

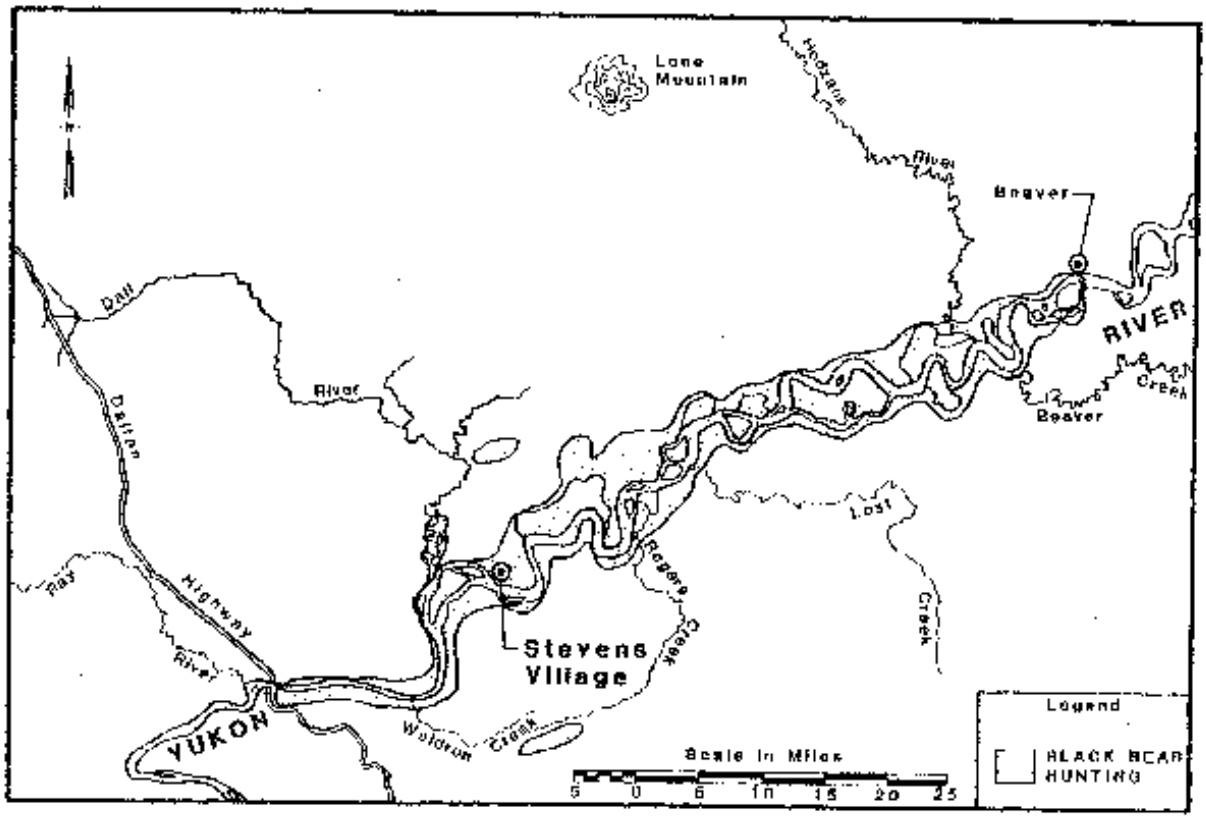

Figure 1.–Areas used by Stevens Village residents for black bear hunting, 1974-1984.

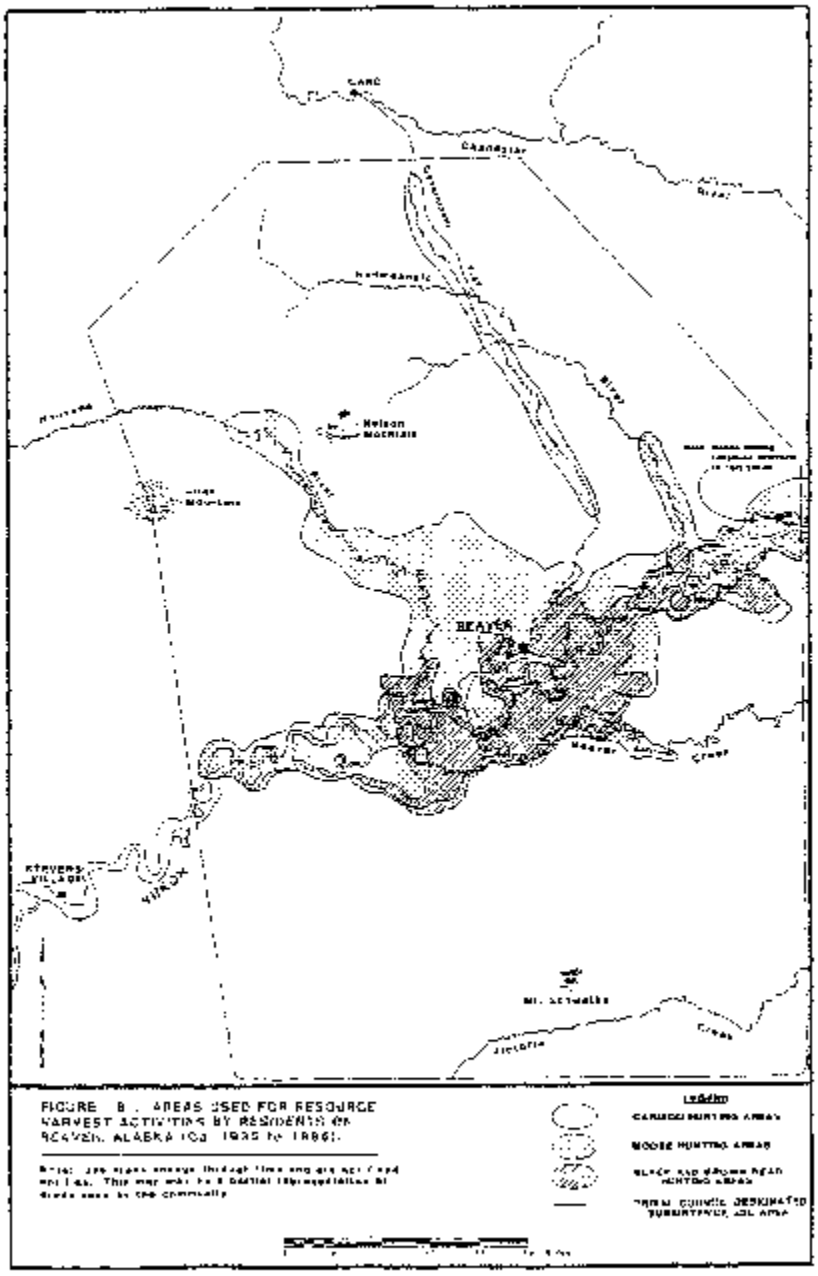

Figure 2.–Areas used by Beaver residents for resource harvest activities, ca. 1930-1986.

APPENDIX A.–LITERATURE EXCERPTS PERTAINING TO CUSTOMARY AND TRADITIONAL BLACK BEAR HUNTING AND USE PATTERNS IN GAME MANAGEMENT UNIT 25

Following are quotations from selected literature pertaining to customary and traditional black bear hunting and use patterns in Game Management Unit 25, Alaska.

Caulfield, R. A. 1983. Subsistence land use in Upper Yukon Porcupine communities, Alaska: Dinjii Nats'aa Nan Kak Adagwaandaii. Alaska Department of Fish and Game, Division of Subsistence, Technical Paper No. 16, Fairbanks. http://www.subsistence.adfg.state.ak.us/TechPap/tp016.pdf

> Black bears (shoh zhraii) are utilized by all Upper Yukon-Porcupine communities except Arctic Village, where they are rarely found. Bears are common in the Yukon Flats and are a frequent sight along riverbanks and near fishcamps. Generally, the Gwich'in[1] do not consider them dangerous, except perhaps in the spring (Caulfield 1983:69).
>
> Hunting of black bear takes place primarily in the spring and fall. In late April and early May, bears emerge from their dens and are easily hunted because they are less shy of humans than later in the fall. The meat at this time is desirable because bears still retain some of their winter fat. Spring is particularly 'lean' time of year for human food, and bear meat can often be an important food source until waterfowl arrive. Often bears are spotted along rivers after breakup near muskrat and fishing camps. At one such camp on Beaver Creek in spring of 1980, five bears, including two cubs, were encountered by Fort Yukon residents and two adult bears were killed. Both were shot in or near the camp and the meat was used for human and dog food.
>
> In fall, usually September, black bear meat is fat and desirable. Often bears are killed in conjunction with moose hunting along rivers. Furthermore, den hunting, described by Nelson (1973:118-122), is still occasionally undertaken today. Bear meat is generally frozen or used fresh. It is usually boiled or fried, but in either case it must be fat to be considered suitable for human consumption. Hides are sometimes sold or are used for insulation around doors (Caulfield 1983:69)

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)

[1] "Gwich'in" is the more recent spelling of the Athabascan people of the Yukon Flats. Given the historical nature of the literature, readers will see that "Kutchin" was more commonly used in the past.

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 ever 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 1/4-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.

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.

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 end, 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 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 sometimes 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)

[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).

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. 1970. Contributions to the ethnography of the Kutchin. Reprint of the 1936 edition, Volume No. 14, Yale University Publications in Anthropology. Human Relations Area Files Press, New Haven.

Bears are common in the Peel River[3] country. The Indians either shoot them with bows and arrows as the occasion offers, pull them out of their holes in winter and club them to death, snare them, or in times of rare courage, spear them. It is said that when a man discovers a bear hole, he kills the bear but tells no one. Later he may be seen to put a little hair in the fire whereupon some smart old man says, 'Oh, I know you found a bear hole.' Naturally the killing of black bears most frequently occurs as they are less ferocious and more numerous than either the brown bear or the grizzly. Grizzly bears meet with respect because of their strength and hunters exercise more than usual care in attacking them, but the method is the same. Dogs are not used for hunting bears. (Osgood 1970:27)

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

[3] Osgood conducted fieldwork in summer 1932 among the Kutchin of Alaska and of the Yukon Territory, Canada. Information specific to hunting of bears in this excerpt is from the Peel River, which is in Canada, but is otherwise corroborated by other literature sources from Alaska. In short, customary and traditional uses of black bears by Peel River Kutchin are likely very similar to those of the Kutchin peoples located a little downriver, in Alaska.

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)

Sumida, V. A. 1988. Land and resource use patterns in Stevens Village, Alaska. Alaska Department of Fish and Game Technical Paper No. 129, Juneau. http://www.subsistence.state.ak.us/TechPap/tp129.pdf

Certain areas of band territories were used by all members while other areas such as beaver houses and ponds, muskrat swamps, fishing sites, bear dens, big game fences, berrying areas adjacent to fish camps, and some bird hunting areas were considered family-held property. (Clark 1981:585 cited in Sumida 1988:22)

Although bears were not actively hunted in the summer [by residents of Stevens Village], they were readily spotted along the rivers and creeks and in the hill country of the Yukon River canyon. During this season bears were harvested in the course of travel or during pursuit of other activities. 'Nuisance' bears found near the village or fish camps were shot or snared as a safety measure. (Sumida 1988:141)

Bears were considered especially good in the fall, after accumulating a thick layer of fat for their winter dormancy, the result of a diet consisting primarily of berries. At times, up to four inches of fat develops along their backs. Den hunting was sometimes undertaken during fall and early winter though not as frequently as in the past when hunters used to do more overland travel on foot both before and after freeze-up and were more likely to come across bear dens. (Sumida 1988:141)

When bears prepare their dens during September and October, hunters can locate denning sites before the first snowfall by noting disturbed areas where the ground has been dug up and where leaves, grass, and moss have been scraped and removed. Dens are excavated from the ground or in riverbanks but can also be natural shelters created by fallen trees or the tree roots of partially downed trees. Dens are lined with grass, moss, leaves, and other materials, and once the bear enters the den for the duration of the winter, the entrance is closed off with similar materials. (Sumida 1988:141-142)

Although snow camouflages evidence of dens, often after an early snowfall, bears can be tracked to their denning sites. 'Old-timers' reportedly searched for bear dens along riverbanks during fall and early winter, looking for the steam from the bear's breath which emanated from the air hole in the roof of the den. (Sumida 1988:142)

When an occupied den was found the hunter noted the location and returned later with others. Hunters blocked the entrance to the den with poles and brush, leaving a small opening. If the bear could be seen from the entrance it was shot through the opening in the blocked entrance. Otherwise, the bear was disturbed by prodding it with a stick and

was shot as its head appeared at the entrance. Another method was to securely block the entrance and chop a hole above the bear in its den, shooting it from that position. A detailed description of Koyukon bear hunting methods is presented in Nelson et al. (1982:46-47). (Sumida 1988:142)

After a bear has been killed, the den must be thoroughly cleaned out and the grass and other materials used to line the interior of the den were removed. This was done so that the den appeared unused and assured that another bear would occupy it the following year. Marking or disturbing the area in any way resulted in future avoidance of the site by other animals. (Sumida 1988:142)

Sumida, V. A. 1989. Patterns of fish and wildlife harvest and use in Beaver, Alaska. Alaska Department of Fish and Game Division of Subsistence Technical Paper No. 140, Fairbanks. http://www.subsistence.adfg.state.ak.us/TechPap/tp140.pdf

The harvest and use of bear was more common in the past when families resided in seasonal camps. At that time, den hunting was regularly undertaken during fall. A good description of this activity is provided in Nelson et al. (1982:46-47). Currently, bear hunting is more opportunistic and usually incidental to other activities undertaken during open water seasons, although den hunting is still conducted on occasion. Late summer and early fall are considered the best time to harvest bear since they have developed a thick layer of fat for their winter hibernation.

Black bear is the species most commonly taken. A few households hunt for brown bear although some residents considered these bears to be inedible. During the survey year three households each reported harvesting one black bear and no brown bear were taken. Bear meat is eaten and their fat is sometimes rendered for use in cooking or when eating dried fish or meat. Bear hides were kept by some households. (Sumida 1989:60)

Sumida, V. A., and D. B. Andersen. 1990. Patterns of fish and wildlife use for subsistence in Fort Yukon, Alaska. Alaska Department of Fish and Game Division of Subsistence Technical Paper No. 179, Fairbanks. http://www.subsistence.adfg.state.ak.us/TechPap/tp179.pdf

In the past, snares were used to harvest both large and small mammals including moose, caribou, bear, and snowshoe hare. (Osgood 1970:36; McKennan 1959:48)