

**Customary and Traditional Use Worksheet,  
Brown Bears, Game Management Unit 25 (Interior  
Alaska)**

**Prepared by**

**Alaska Department of Fish and Game,**

**Division of Subsistence**

**for the February 2017 Fairbanks Board of Game meeting**

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February 2017

Alaska Department of Fish and Game

Division of Subsistence



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<b>Weights and measures (metric)</b>		<b>General</b>		<b>Measures (fisheries)</b>	
centimeter	cm	Alaska Department of Fish and Game	ADF&G	fork length	FL
deciliter	dL	Alaska Administrative Code	AAC	mid-eye-to-fork	MEF
gram	g	all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.	mid-eye-to-tail-fork	METF
hectare	ha			standard length	SL
kilogram	kg			total length	TL
kilometer	km				
liter	L				
meter	m				
milliliter	mL	all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.		
millimeter	mm		@		
<b>Weights and measures (English)</b>				<b>Mathematics, statistics</b>	
cubic feet per second	ft <sup>3</sup> /s	at		all standard mathematical signs, symbols and abbreviations	
foot	ft	compass directions:		alternate hypothesis	HA
gallon	gal	east	E	base of natural logarithm	e
inch	in	north	N	coefficient of variation	CPUE
mile	mi	south	S	common test statistics	(F, t, $\chi^2$ , etc.)
nautical mile	nmi	west	W	confidence interval	CI
ounce	oz	copyright	©	correlation coefficient (multiple)	R
pound	lb	corporate suffixes:		correlation coefficient (simple)	r
quart	qt	Company	Co.	covariance	cov
yard	yd	Corporation	Corp.	degree (angular)	°
		Incorporated	Inc.	degrees of freedom	df
		Limited	Ltd.	expected value	E
		District of Columbia	D.C.	greater than	>
		et alii (and others)	et al.	greater than or equal to	≥
		et cetera (and so forth)	etc.	harvest per unit effort	HPUE
		exempli gratia		less than	<
		(for example)	e.g.	less than or equal to	≤
		Federal Information Code	FIC	logarithm (natural)	ln
		id est (that is)	i.e.	logarithm (base 10)	log
		latitude or longitude	lat. or long.	logarithm (specify base)	log <sub>2</sub> , etc.
		monetary symbols (U.S.)	\$, ¢	minute (angular)	'
		months (tables and figures): first three letters	Jan, ..., Dec	not significant	NS
		registered trademark	®	null hypothesis	HO
		trademark	™	percent	%
		United States (adjective)	U.S.	probability	P
		United States of America (noun)	USA	probability of a type I error (rejection of the null hypothesis when true)	$\alpha$
		U.S.C.	United States Code	probability of a type II error (acceptance of the null hypothesis when false)	$\beta$
		U.S. state	use two-letter abbreviations (e.g., AK, WA)	second (angular)	"
				standard deviation	SD
				standard error	SE
				variance	
				population sample	Var var
<b>Physics and chemistry</b>					
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				

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**CUSTOMARY AND TRADITIONAL USE WORKSHEET, BROWN  
BEARS, GAME MANAGEMENT UNIT 25 (INTERIOR ALASKA)**

by

Alaska Department of Fish and Game  
Division of Subsistence, Fairbanks

**February 2017**

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## ABSTRACT

This worksheet was prepared for the Alaska Board of Game as background for consideration of changes to the harvest regulations for brown bears (*Ursus arctos*) in the Interior Region of Alaska. This worksheet presents the 8 criteria that the Board is required to consider under Joint Board of Fisheries and Game regulations (5 AAC 99.010) in order to identify wildlife stocks that are customarily and traditionally taken or used by Alaska residents for subsistence uses.

Key words: Brown bears, *Ursus arctos*, Interior Region, Board of Game

# INTRODUCTION

At its meeting in February 2017, the Alaska Board of Game (BOG) will consider Proposal 108, which addresses the customary and traditional subsistence uses of brown bears in Game Management Unit (GMU) 25D.

Under the Alaska subsistence law (AS 16.05.258(a)), the Board of Game is required to identify the game stocks or portions of stocks that are customarily and traditionally taken or used for subsistence (a “C&T finding”). In 1987, the BOG made a negative C&T finding for brown bears in all of GMU 25 based on its deliberations on proposals 185 through 189 to change the availability of permits for nonresidents to harvest brown bears in GMU 25A (Appendix A). In the 30 years since then, new information from GMU 25D has become available to assist the BOG in a reevaluation of this negative finding. To clarify, proposal 108 asks the Board to revisit this finding for GMU 25D specifically. This worksheet provides background information on noncommercial harvests and uses of brown bears in GMU 25D. The information is organized according to the 8 criteria for identifying customary and traditional uses as defined in the Joint Board of Fisheries and Game Subsistence Procedures (5 AAC 99.010). This information may be supplemented during public testimony and board deliberations.

Most of the harvest and use data reported in this worksheet derive from systematic household surveys and ethnographic interviews conducted by the Alaska Department of Fish and Game (ADF&G) Division of Subsistence. A complete regulatory history for brown bears in GMU 25D is included as Appendix B.



# THE EIGHT CRITERIA

## CRITERION 1.

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

Brown bears have been a source of food, fat, and fur in Interior Alaska from the prehistoric period to present (Hosley 1981; Van Lanen et al. 2012; Osgood 1936). Historical sources from the early contact period in the 19th century mention use of brown bears by residents of the greater region (Schwatka 1900) Among Gwich’in<sup>1</sup> and Koyukon Athabascans residing in the Yukon Flats area of Alaska (which includes the communities of Beaver, Birch Creek, Chalkytsik, Circle, Fort Yukon, Stevens Village, and Venetie in GMU 25D), various longstanding cultural traditions and beliefs surrounding the proper use and treatment of harvested brown bears speaks to the length and consistency of their use (Caulfield 1983; Cruikshank 1986; Nelson 1973, 1983; Peter 1981; Slobodin 1981).

Contemporary brown bear uses in the region have been documented in multiple research projects since 1987; additionally, several sources prior to 1987 were not cited in the 1987 finding, likely because they were not applicable to Unit 25A. Brown bears are specifically hunted or opportunistically harvested in conjunction with other harvesting activities, such as moose or spring duck hunting (Van Lanen et al. 2012; Nelson 1973; Sumida and Andersen 1990; Sumida 1988, 1989). Preference for brown bear meat is not widespread in GMU 25, and is likely to be less common in present times than historically; however, several sources report that it is still utilized and eaten by some residents of the Yukon Flats (Van Lanen et al. 2012; Nelson 1973, 1983; Sumida 1989). Recent subsistence studies from Yukon Flats communities in GMU 25D document relatively small percentages of households harvesting or using brown bears. Between 2008-2010, 0%–13% of households in Unit 25D communities reported harvesting or using brown bears (Van Lanen et al. 2012). Recent harvest numbers reported in household surveys for all communities combined in GMU 25D vary from 2–24 brown bears per year (Table 1; Van Lanen et al. 2012; U.S. Fish and Wildlife Service 2008). Brown bear harvests are also widely documented as being motivated by interests to protect persons and property and to reduce bear predation on moose. Other documented uses of brown bears in GMU 25 include using meat for dog food, hides for sleeping mats and insulators, and fat for waterproofing items such as shoes (Caulfield 1983; Van Lanen et al. 2012; Nelson 1973; Sumida and Andersen 1990; Sumida 1988).

*Table 1.—Number of brown bears harvested, Beaver, Birch Creek, Chalkyitsik, Circle, Fort Yukon, Stevens Village, and Venetie, 2001, 2003, 2004, 2008–2010.*

Community	Study Year					
	2001 <sup>a</sup>	2003 <sup>a</sup>	2004 <sup>a</sup>	2008 <sup>b</sup>	2009 <sup>b</sup>	2010 <sup>c</sup>
Beaver	0	0	2	0	0	1.2
Birch Creek	0	0	0	0	2	1.5
Chalkyitsik	0	N/A	1	0	0	0
Circle	0	0	1	1	0	0
Fort Yukon	10	4	10	0	12.2	1.2
Stevens Village	N/A	0	6	0	0	0
Venetie	0	0	3	1.1	1.4	0
<b>Total</b>	<b>10</b>	<b>4</b>	<b>23</b>	<b>2.1</b>	<b>15.6</b>	<b>3.9</b>

a. U.S. Fish and Wildlife Service 2008.

b. Van Lanen et al. 2012.

c. Stevens and Maracle 2012.

1. “Gwich’in” is now the commonly accepted spelling, replacing “Kutchin.”

## **CRITERION 2.**

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

Historically and traditionally, brown bears were hunted primarily in the spring and fall, and by den hunting in the winter. Den hunting was likely more common before the introduction of firearms and freezers. Bears are hunted in the spring as they emerge from their winter hibernation in the spring; in the fall, they are hunted coincident with moose hunting or after the first snow fall which enables easier tracking to locate dens for winter hunting (Van Lanen et al. 2012; Nelson 1973). When brown bears are hunted for food, the quality of the fat and flesh is often mentioned as a factor in the timing of targeted hunting. According to Nelson (1973) and Van Lanen et al. (2012), meat from both brown and black bears is considered best in the spring when bears still have fat from hibernation and in the fall when they have been feeding on berries and roots; the meat of bears who have been eating fish is considered undesirable. Brown bears were also taken throughout the rest of the year, especially when encountered near camps or communities (Caulfield 1983; Nelson 1973).

Subsistence studies since 1987 from the Yukon Flats show brown bears being harvested April through October with no documented winter harvests, although winter harvest effort was documented (Van Lanen et al. 2012; Stevens and Maracle 2012). This is consistent with other bear harvest patterns documented in studies of Yukon Flats communities (Caulfield 1983; McKennan 1965; Nelson 1973; Sumida and Andersen 1990; Sumida 1988, 1989).

## **CRITERION 3.**

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

Traditional and historical methods of taking brown bears in GMU 25 include the use of spears, lances, bows and arrow, clubs, deadfalls, snares along trails, snares in trees, and rifles (Hadleigh-West 1963; McKennan 1965:32–34; Nelson 1973:123; Osgood 1936). Dogs were sometimes used to track brown bears or locate dens (Nelson 1973:123; Schneider 1976). Brown bears were also called by imitating the call of a raven (e.g., McKennan 1965:33). Today, brown bears are commonly taken in GMU 25D with large caliber rifles, shotguns, or sometimes with snares (Van Lanen et al. 2012; Nelson 1973).

Throughout the state, brown bears are often specifically hunted or opportunistically harvested in conjunction with other harvesting activities (e.g., moose or caribou hunting, spring duck hunting). Hunters typically access hunting areas by riverboat, all-terrain vehicles (ATVs), snowmobiles, or on foot, although formerly snowshoes and dog teams were also common means of access. Although brown bears are targeted less frequently than black bears, the methods used to hunt both species have been described as largely the same, despite brown bears' preferring open upland habitat to the forested low country preferred by black bears (Van Lanen et al. 2012; Nelson 1973:115).

As described earlier, brown bears were also historically harvested in Unit 25D by taking bears from the den in winter. Traditional practices of den-hunting speak to efficiency and economy of the hunt. Den-hunting was and continues to be an activity in which several hunters usually cooperated (Van Lanen et al. 2012; Sumida 1988). An elder from Beaver described to Van Lanen et al. (2012:109) the benefits of den-hunting bears in previous generations: "The reason for that is they're easy to get and a long time ago there's no refrigerator, no freezer, so they wait till the middle of winter when they get all the fresh meat." In the past, taking bears from dens was more common; however, Van Lanen et al. (2012) notes that some Unit 25D residents still look for denning sites in the late fall and early winter, and known sites are checked for occupancy during this time.

Hunting bears in their dens may be an efficient method of harvest, but it also requires a significant level of local knowledge. Nelson (1973:121) explains that upon discovering an occupied den, Gwich'in hunters note whether it belongs to a black or brown bear. They distinguish the den by the size and degree of openness of the entrance. While black bears tend to plug up the opening, brown bears often leave it unobstructed

because they have a greater tendency to leave their den during the winter. Greater precautions must be taken when “denning” brown bears, because they will angrily charge from the den and often do not need to be coaxed out (Nelson 1973:121). 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 exiting the den. Prior to the introduction of firearms, brown bears would be speared by luring an agitated bear to impale itself onto a spear imbedded in the ground (Nelson 1973). Occasionally, hunters block the entrance to slow the bear’s exit (e.g., McKennan 1959:49; Nelson 1973:120–121). Bears taken in their den are typically butchered away from the den site to maintain the productivity of the den and ensure its use by bears the following year (Nelson 1973; Sumida 1988:141–142, 1989).

In the past, harvesting brown bears with snares typically occurred during the fall “when they are fat and seem to wander along well-defined trails” (Nelson 1973:116–117). According to Nelson (1973), snares were highly effective and posed almost no risk to the hunter. Specific bear snaring techniques are discussed at length in Nelson (1973:116–117) and Nelson et al. (1982:44). Sumida (1988:141) discusses the use of snares to harvest “nuisance bears” found near villages or fish camps.

#### **CRITERION 4.**

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

Community use areas for brown bears in GMU 25D tend to fall into two categories; 1) specific, near-community areas where bear hunting is known to be productive at specific times, and 2) river corridor areas where fishing and moose hunting activities take place and brown bears are hunted in conjunction with or incidental to these other activities.

Several contemporary studies have mapped black and brown bear hunting areas used by communities within GMU 25D (Caulfield 1983; Stephen R. Braund & Associates 2007; Sumida 1988, 1989), though the only maps specific to brown bears are found in Van Lanen et al. (2012). These maps have been included at the end of this worksheet in figures 1–8.

#### **CRITERION 5.**

##### **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.**

Now, as in historical times, Unit 25D brown bears provide a source of meat, fat, and fur. Brown bears are commonly butchered in the field and processed like other large game. Also as in historical times, the meat may or may not be kept depending on the timing of harvest during the year: bear meat is reported to be least desirable when the bear has been feeding on fish, and most desirable after feeding primarily on berries and roots. Meat is most often shared with relatives, especially if fresh meat has been scarce. The meat is frozen, dried, smoked, or canned for later use. Preparation is typically by boiling, frying, broiling, barbecuing, or roasting. A hunter from Fort Yukon who does not consume brown bear meat but shares it with elders told Van Lanen et al. (2012:113) that one elder he shares with likes to boil the feet like ham hocks. Even if bear meat is not used for human consumption, people may use it for dog food (Caulfield 1983; Van Lanen et al. 2012; Sumida 1989).

Bear fat was, and continues to be valued in Unit 25, and is often rendered into bear grease or tallow. The grease is then used for cooking, and in specific recipes, such as “Native ice cream” (a mixture of berries, sugar, and fat and sometimes dried fish). Bear fat is also eaten with dry meat or dried fish. It is often shared with other households, especially elders. Brown bear fat is also reported to be used for waterproofing items such as boots (Van Lanen et al. 2012).

Brown bear hides were and continue to be used as floor or sleeping mats and as insulators for such things as drafty cabin doorways. Van Lanen et al. (2012:113) report that a Fort Yukon hunter prefers bear hides to caribou for sleeping mats because they are warmer and the hair is less likely to rub off. Although tanning bear hides is generally no longer practiced in the Yukon Flats, an elder from Beaver reports that she still tans hides when she has the opportunity.

#### **CRITERION 6.**

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

Athabascan tradition attributed great spiritual power to the brown bear: there is a considerable set of beliefs and values surrounding their harvest and uses (Caulfield 1983; Cruikshank 1986; Frank and Frank 1995; Van Lanen et al. 2012; McKennan 1965:84, 144–145; Nelson 1973; Peter 1981). For example, residents in some Unit 25D villages today still follow traditional rules that they learned from elders and that prescribe who may eat bears, what portions may be eaten, how they are 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 (Van Lanen et al. 2012; Nelson 1973, 1983). Even within individual Yukon Flats communities, there are disparate values regarding eating brown bear meat: some individuals relish it, while others refuse it (Van Lanen et al. 2012).

As with many customary and traditional subsistence activities, teaching young people how to properly track, hunt, and butcher bears, as well as to process and preserve bear meat and handle other products, is accomplished through participation in these activities with more experienced hunters.

#### **CRITERION 7.**

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

Brown bear meat is shared within Unit 25 communities, although this practice is more limited than the sharing of black bear meat and other large mammals such as moose. Preference for brown bear uses is likely to have been more common in the past; nevertheless, there are still households who use them. Van Lanen et al. (2012) documented low levels of sharing brown bear products between 2008 and 2010. In this time period, hunters in the Yukon Flats reported sharing brown bear meat, especially with elders. It is likely that it would be shared more broadly when it is the only fresh meat available during lean times, such as late winter. Traditional beliefs in at least one community in Unit 25D restrict the eating of brown bear meat to men and elderly women and these beliefs tend to limit or structure the sharing and distribution practices for this resource.

#### **CRITERION 8.**

##### **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.**

Brown bears are just one of many wild resources that are typically harvested for subsistence uses by GMU 25D residents. Residents of these communities harvest a large variety and considerable amounts of local fish and game resources, including salmon, moose, caribou, whitefish, northern pike, burbot, a variety of small game, waterfowl, plants and berries.<sup>2</sup>

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2. Alaska Department of Fish and Game (ADF&G) Division of Subsistence, Juneau. "Community Subsistence Information System: CSIS." <https://www.adfg.alaska.gov/sb/CSIS>.

The number of brown bears harvested for subsistence purposes varies by community and year, largely due to opportunistic harvesting. In some parts of GMU 25D, nonlocal foods and equipment are often very costly, and the means of generating cash are not widely available, thus making reliance on subsistence resources an essential part of the GMU 25 economy.



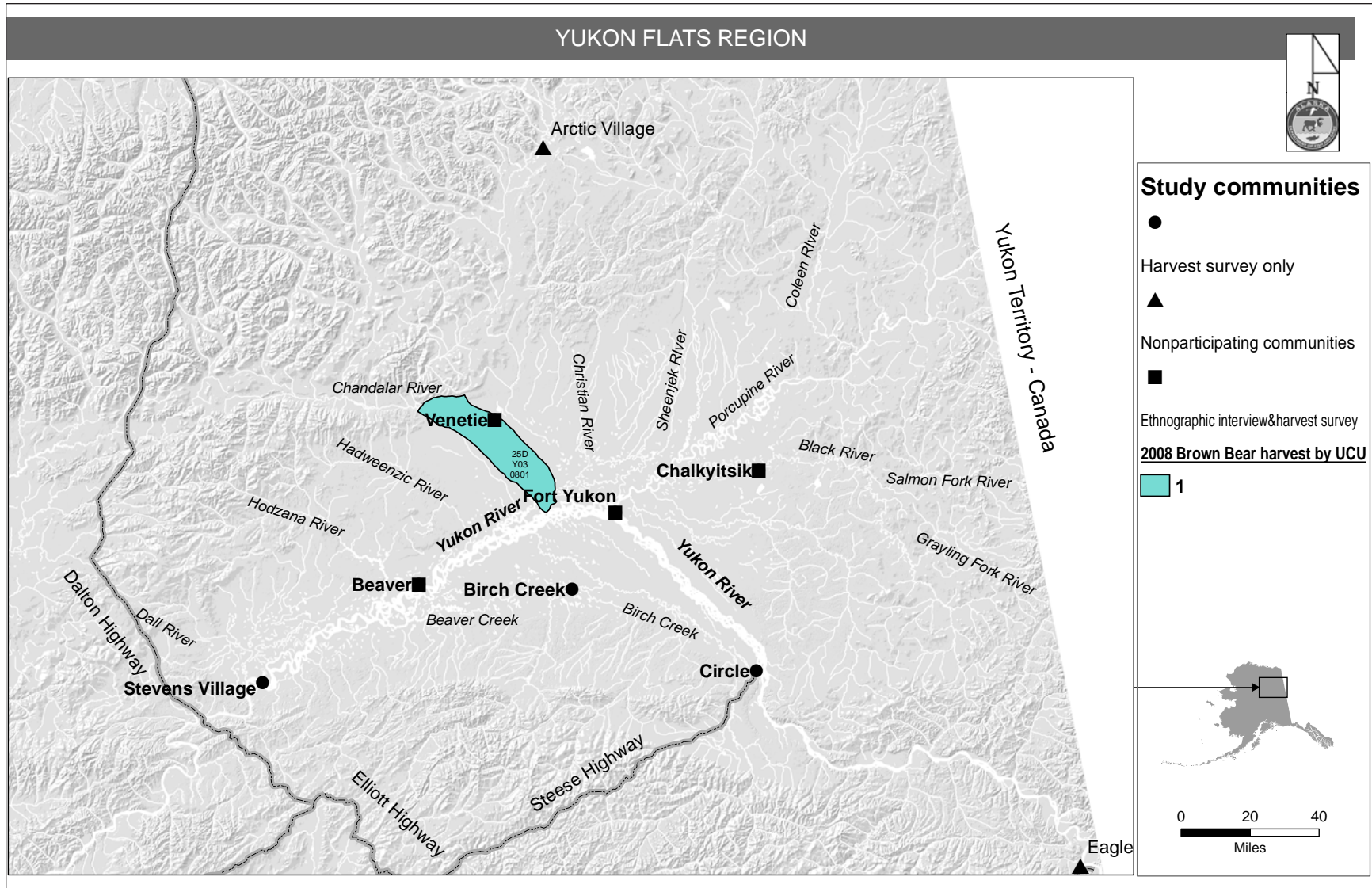


Figure 1.—Brown bear harvest areas by UCU, Yukon Flats communities, 2008 (Van Lanen et al. 2012).

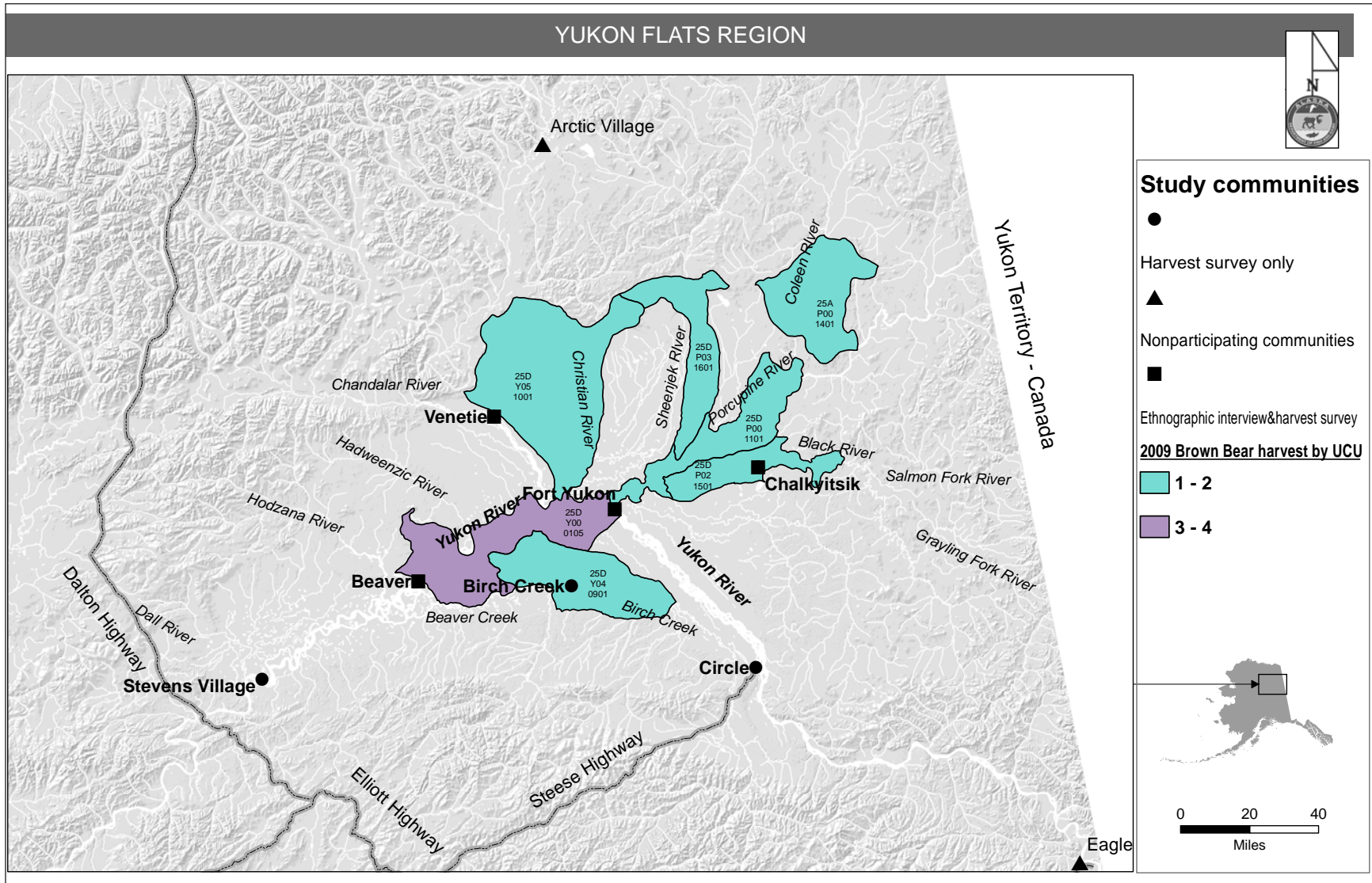


Figure 2.—Brown bear harvest areas by UCU, Yukon Flats communities, 2009 (Van Lanen et al. 2012)



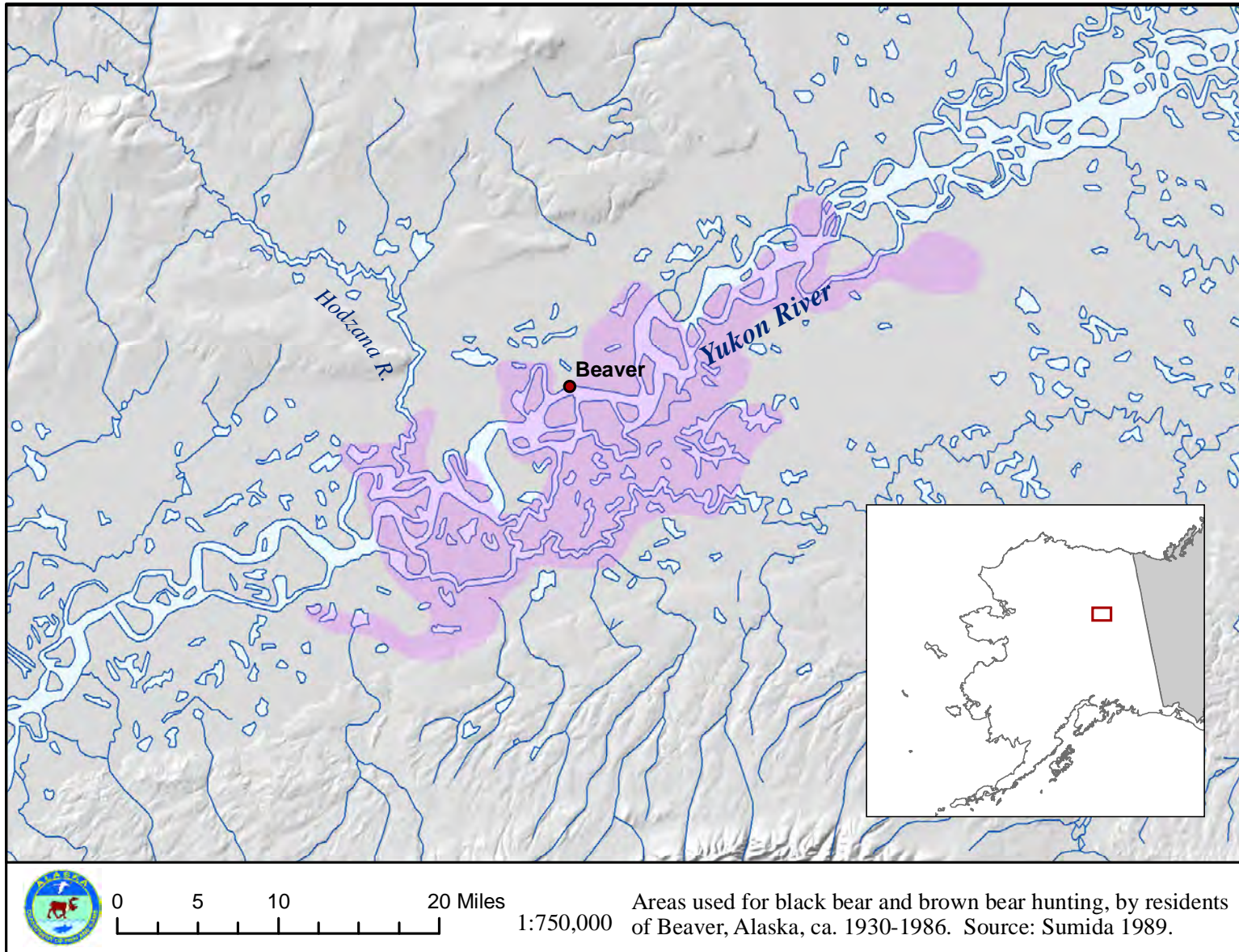


Figure 3.—Black and brown bear hunting and harvest areas, Beaver, ca. 1930–1986 (Sumida 1989).



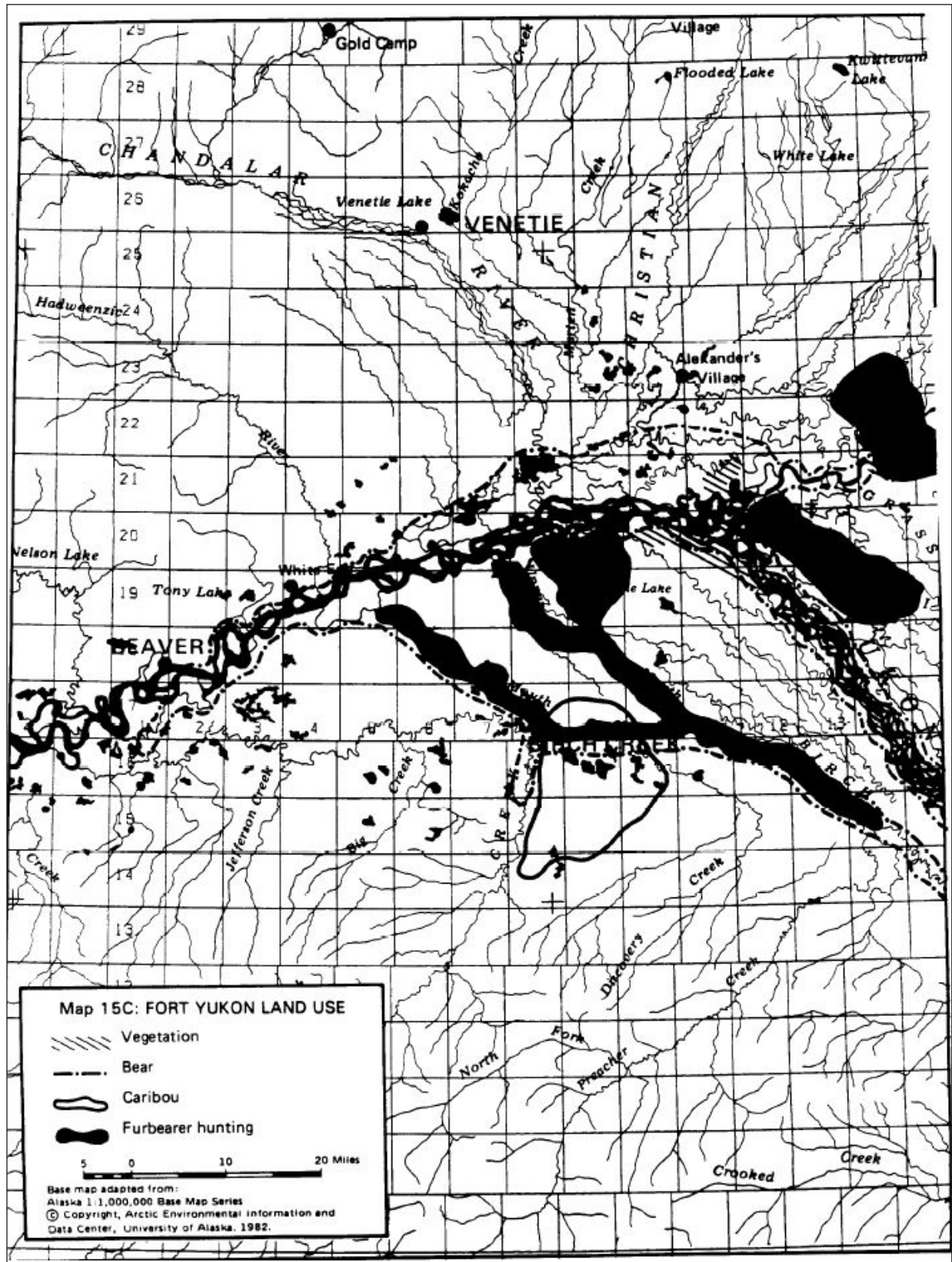


Figure 4.—Lifetime bear hunting areas, Fort Yukon (Caulfield 1983), continued on next page.

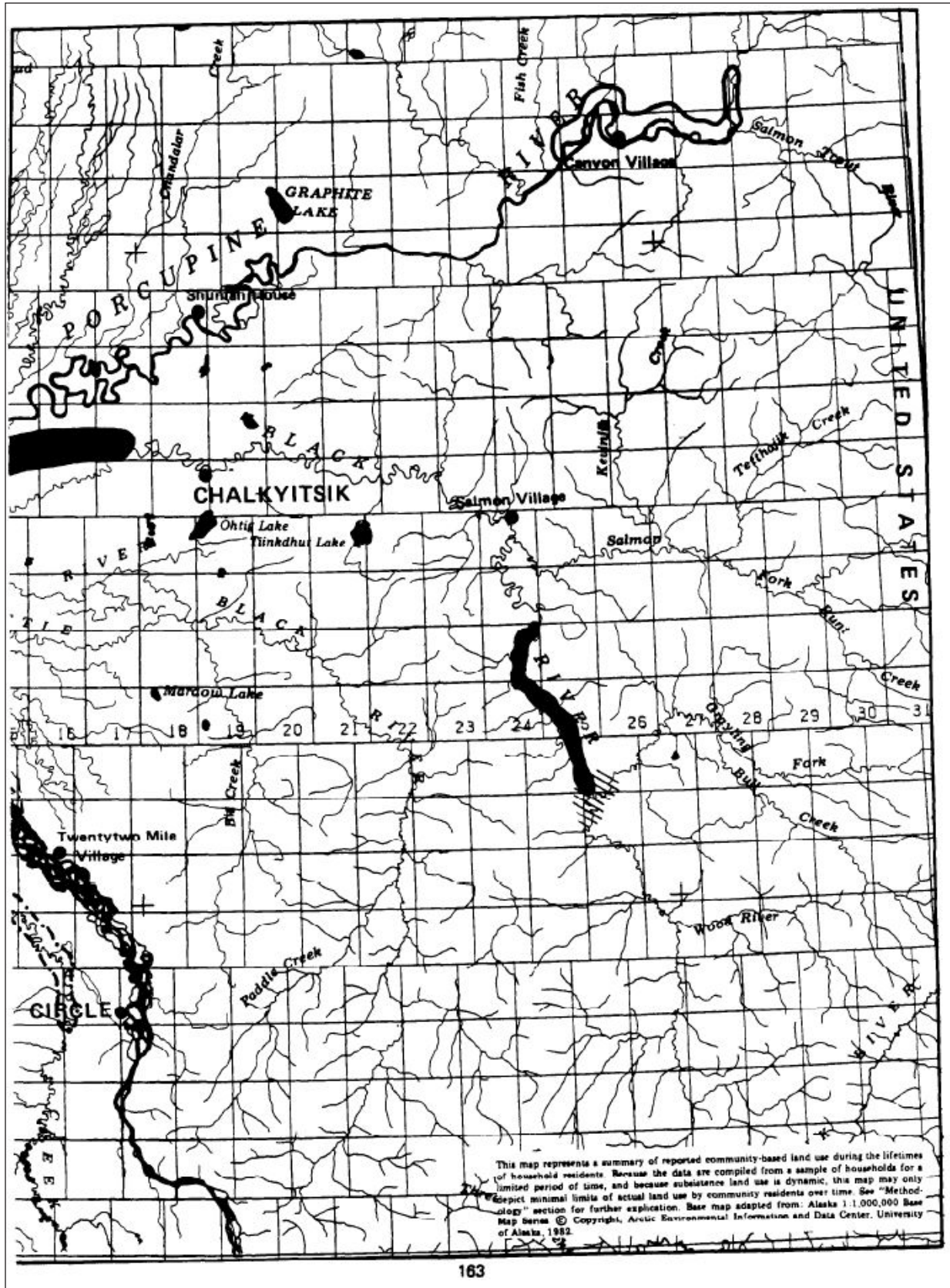


Figure 4, continued.



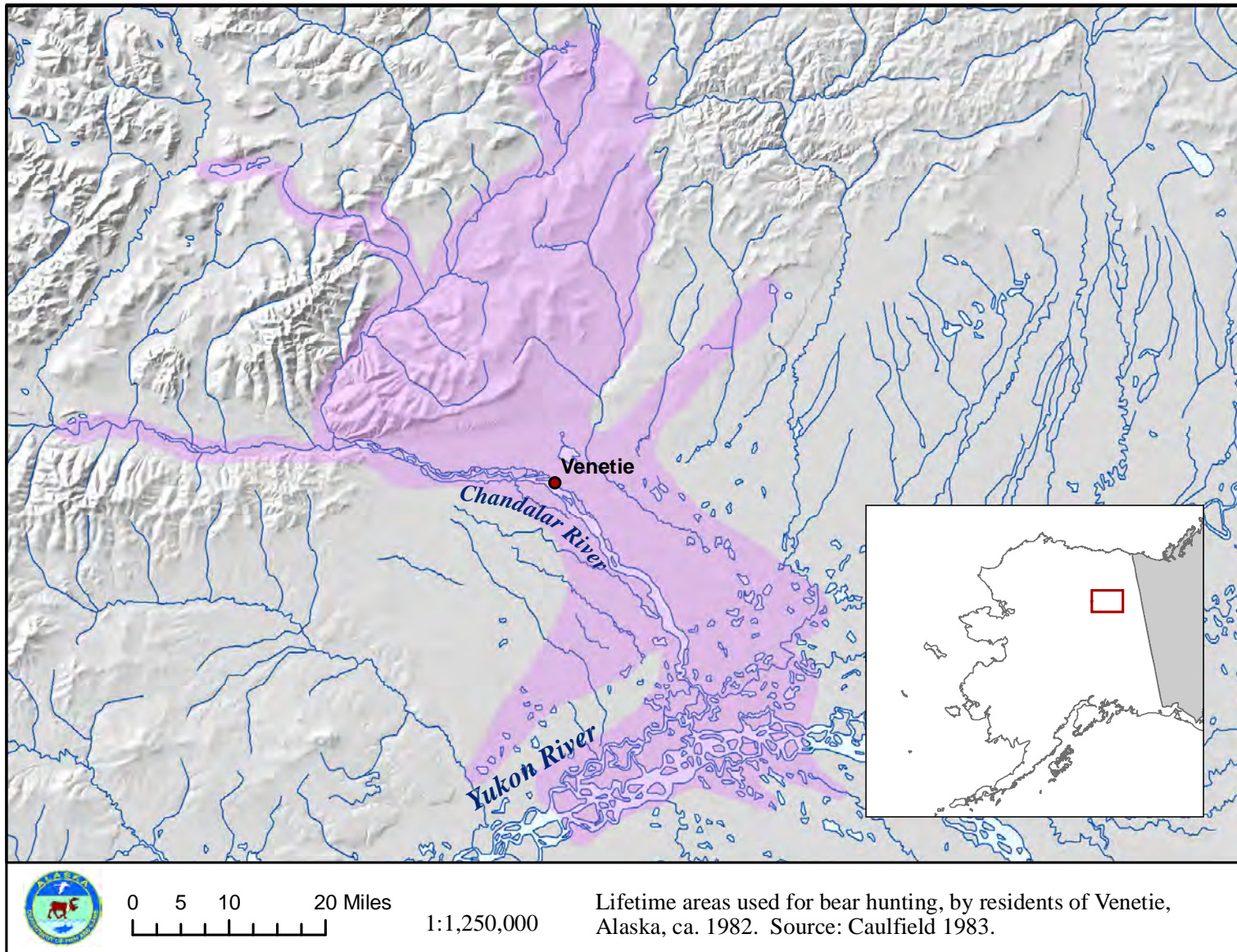


Figure 5.—Lifetime bear hunting areas, Venetie (Caulfield 1983).



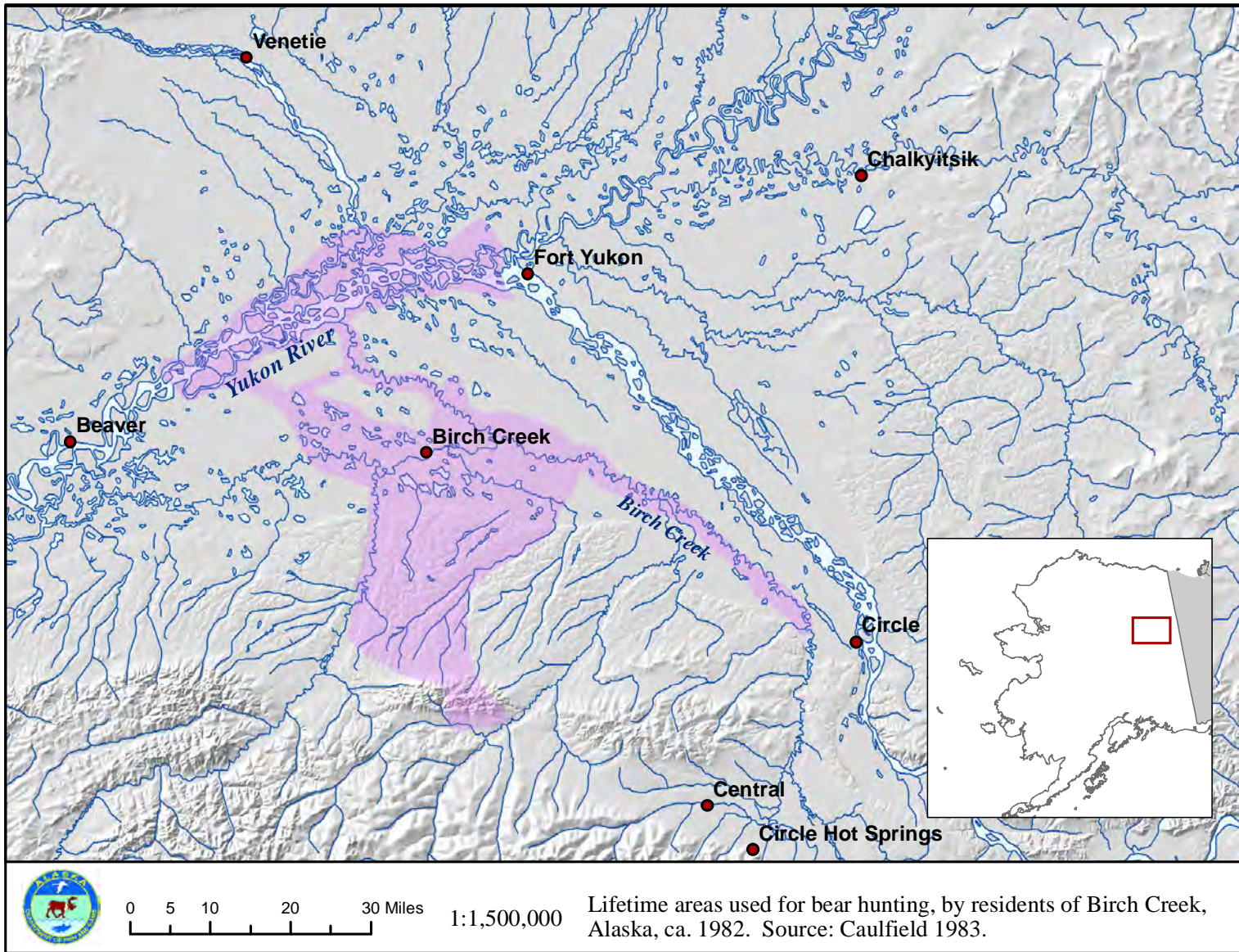


Figure 6.—Lifetime bear hunting areas, Birch Creek (Caulfield 1983).

Lifetime areas used for bear hunting, by residents of Birch Creek, Alaska, ca. 1982. Source: Caulfield 1983.



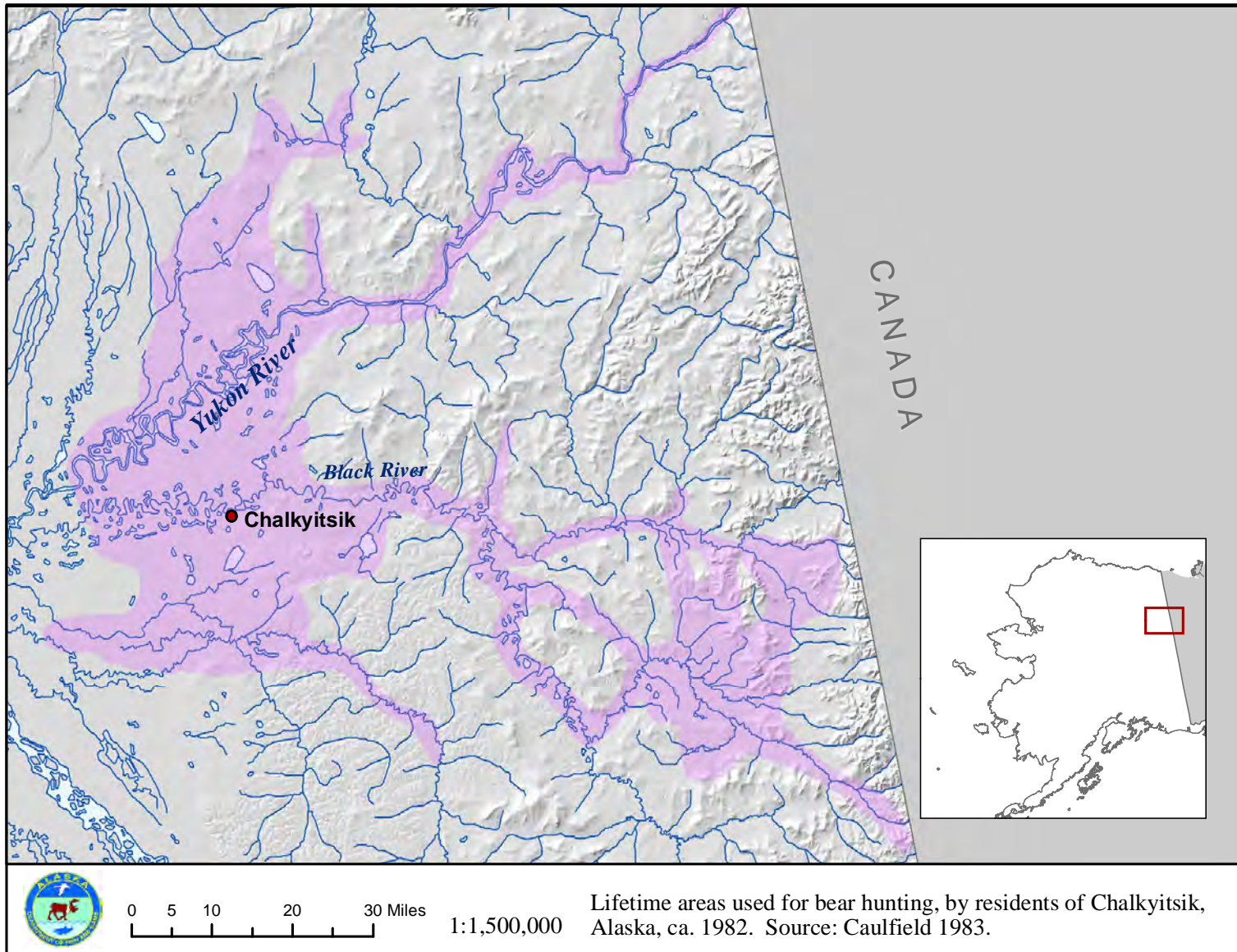


Figure 7.—Lifetime bear hunting areas, Chalkyitsik (Caulfield 1983).

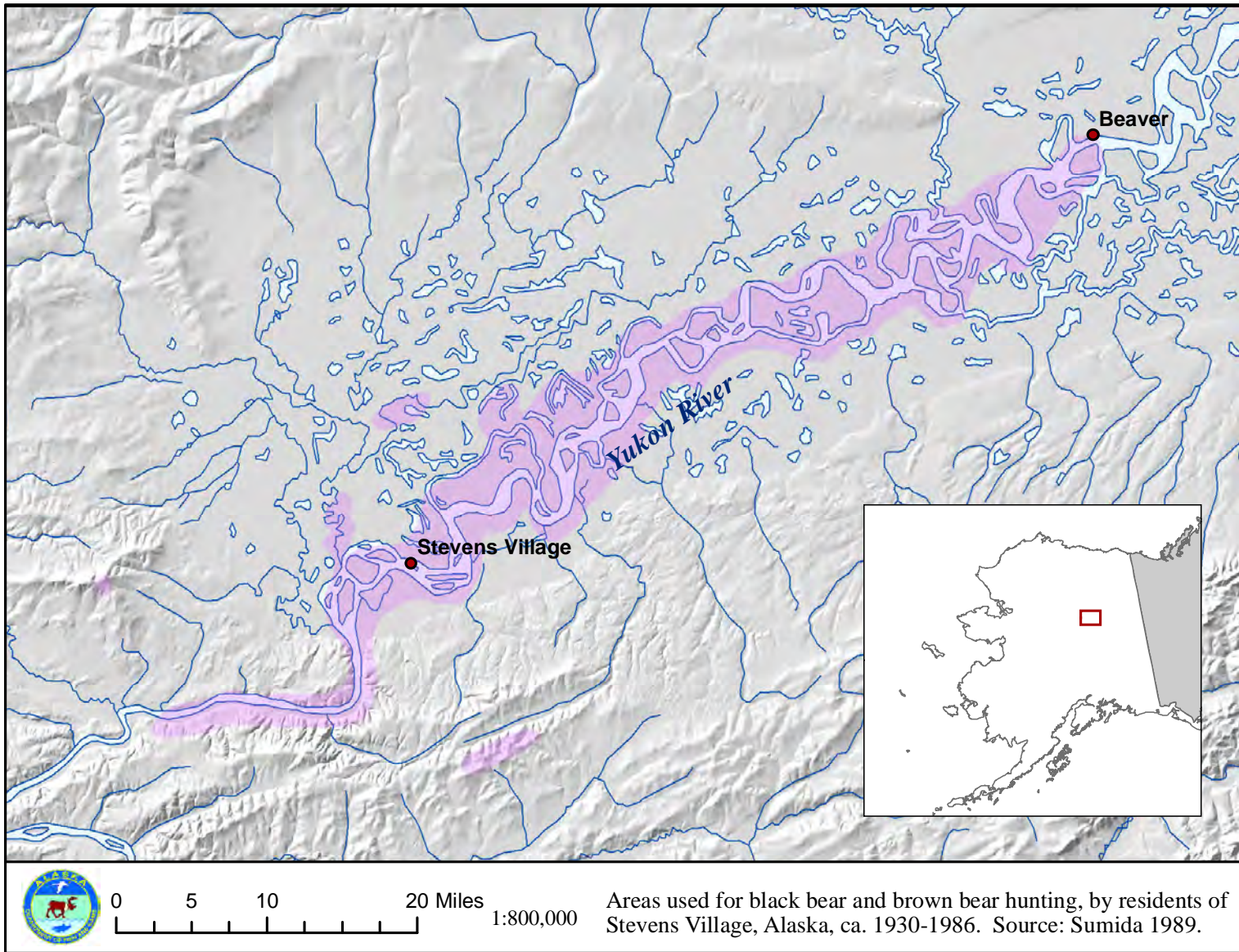


Figure 8.—Black and brown bear hunting areas, Stevens Village, ca. 1930–1986 (Sumida 1989).



## REFERENCES

- 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.
- Cruikshank, M.  
1986. *The life I've been living*. University of Alaska Press: Fairbanks.
- Frank, J. and S. Frank  
1995. *Neerihinjik (We traveled from place to place): Johnny Sarah Haa Googwandak (The Gwich'in stories of Johnny and Sarah Frank)*. Alaska Native Language Center: Fairbanks.
- Hadleigh-West, F.  
1963. *The Netsi Kutchin: an essay in human ecology*. PhD Dissertation. Louisiana State University: Baton Rouge, LA.
- Hosley, E.H.  
1981. "Environment and culture in the Alaska plateau" [in] W.C. Sturtevant and J. Helm, editors *Handbook of North American Indians*, 6: Subarctic. Smithsonian Institution Press: Washington, D.C.
- Van Lanen, J.M., C. Stevens, C.L. Brown, K.B. Maracle, and D.S. Koster  
2012. *Subsistence land mammal harvests and uses, Yukon Flats, Alaska: 2008–2010 harvest report and ethnographic update*. Alaska Department of Fish and Game Division of Subsistence Technical Paper No. 377: Anchorage.
- McKenna, R.A.  
1959. *The Upper Tanana Indians*, Yale University Publications in Anthropology 55. Yale University Press: New Haven.
- Nelson, R.K.  
1973. *Hunters of the northern forest*. University of Chicago Press: Chicago.  
1983. *Make Prayers to the Raven: A Koyukon View of the Northern Forest*. University of Chicago Press: Chicago.
- 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 Fairbanks, Cooperative Park Studies Unit, Anthropology and Historic Preservation: Fairbanks.
- O'Brien, T.  
1997. *Athabaskan implements from the skin house days as related by Reverend David Salmon*. University of Alaska Fairbanks: Fairbanks.
- Osgood, C.  
1936. *Contributions to the ethnography of the Kutchin*, Yale University Publications in Anthropology 14. Oxford University Press: London.
- Peter, K.  
1981. *Neets'aa Gwiindaii: Living in the Chandalar country*. University of Alaska Press: Fairbanks.
- Schneider, W.S.  
1976. *Beaver, Alaska: the story of a multi-ethnic community*. PhD Dissertation. Bryn Mawr College: Bryn Mawr, PA.
- Schwatka, F.  
1900. "[1885] Report of military reconnaissance made in 1883." [in] *Compilation of narratives of explorations in Alaska*. Government Printing Office: Washington D.C.
- Slobodin, R.  
1981. "Kutchin" [in] J. Helm, editor *Handbook of North American Indians*, 6: Subarctic. Smithsonian Institution Press: Washington D.C.

Stephen R. Braund & Associates

2007. *Yukon Flats land exchange EIS supplemental baseline study: subsistence use areas and traditional knowledge study for Beaver, Birch Creek, and Fort Yukon, Alaska*. Prepared for U.S. Fish and Wildlife Service. Stephen R. Braund & Associates: Anchorage.

Stevens, C. and K.B. Maracle

2012. *Subsistence harvest of land mammals, Yukon Flats, Alaska, March 2010–February 2011*. Council of Athabascan Tribal Governments, CATG Technical Report No. 01-12: Fort Yukon.

Sumida, V.A.

1988. *Land and resource use patterns in Stevens Village, Alaska*. Alaska Department of Fish and Game, Division of Subsistence Technical Paper No. 129: Fairbanks.

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.

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.

U.S. Fish and Wildlife Service

2008. *Proposed land exchange Yukon Flats National Wildlife Refuge draft environmental impact statement*. U.S. Fish and Wildlife Service, DOI-DES 87-62: Anchorage.



**APPENDIX A.—EIGHT CRITERIA WORKSHEET,  
BOARD OF GAME 1993, GMU 25A BROWN BEAR**

EIGHT CRITERIA WORKSHEET, BOARD OF GAME 1993

GMU: 25A

Negative C & T Finding: 1987

SPECIES: Brown Bear

ALASKA RESIDENTS USING THE SPECIES: Arctic Village and possibly other Alaskan residents.

**1. LENGTH AND CONSISTENCY OF USE** (long-term, consistent, excluding interruptions by circumstances beyond the user's control):

Historically, brown bear were taken in this area. Currently, they are rarely used for food, but are profoundly respected.

**2. SEASONALITY** (recurring in specific seasons of each year):

The brown bears are taken sporadically.

**3. MEANS AND METHODS OF HARVEST** (efficient, economic, conditioned by local circumstances):

Most bears are taken as nuisance bears disturbing meat caches or camps. They also are taken if out of dens during winter.

**4. GEOGRAPHIC AREAS:**

Brown bear hunting areas are not shown in written sources.

**5. MEANS OF HANDLING, PREPARING, AND STORING** (traditionally used by past generations, but not excluding recent technological advances):

Historically, and today, brown bear are not generally utilized as a food resource by residents of GMU 25A. Likewise, there is no written information to indicate that brown bear hides were used in the past or today.

**6. INTERGENERATIONAL TRANSMISSION OF KNOWLEDGE, SKILLS, VALUES, AND LORE:**

Brown bears do not figure prominently in the Kutchin legends recorded by McKennan (1965). Brown bears are greatly respected, and somewhat feared for their strength and are frequently shot by local residents when they are encountered (Caulfield 1983). These values and practices are probably passed on, by example, between generations.

**7. DISTRIBUTION AND EXCHANGE** (customary trade, barter, sharing, and gift giving within a definable community of persons):

Because brown bears were generally not utilized, brown bear meat, hides, and other products were not a product of customary barter or trade in GMU 25A.

**8. DIVERSITY OF RESOURCES IN AN AREA; ECONOMIC, CULTURAL, SOCIAL, AND NUTRITIONAL ELEMENTS** (wide diversity, substantial elements of a subsistence way of life):

While brown bears are a respected and occasionally harvested resource, they are not an important component of the local economy or culture in GMU 25A according to written sources. Caribou, moose, sheep, small mammals, furbearers, wild fowl, and a variety of freshwater fish such as whitefish, pike, burbot, lake trout, and grayling, form the major subsistence resources for residents of this area.

**INFORMATION SOURCES:**

Hadleigh-West, Fredrick

1963 The Netsi Kutchin: An Essay in Human Ecology. Ph.D. thesis. Department of Geography and Anthropology, Louisiana State University and Agricultural and Mechanical College.

McKenna, Robert A.

1965 The Chandalar Kutchin. Technical Paper No. 17. Arctic Institute of North America, Montreal.

Osgood, Cornelius

1970 Contributions to the Ethnography of the Kutchin. Yale University Publications in Anthropology Number 14. Yale University, New Haven, Conn.



**APPENDIX B.—BROWN BEAR HUNTING  
REGULATIONS, GMU 25, 1960–2017**

*Appendix B.—State of Alaska brown bear hunting regulations, GMU 25, 1960–2017.*

Regulatory year	Seasons	Total days	Bag limit	Conditions
<b>1960</b>	May 15–June 15	32	1 bear	Taking of cubs or females accompanied by cubs is prohibited
	Sept. 1–Dec. 31			
<b>1961–1963</b>	May 15–June 15	154	1 bear	Taking of cubs or females accompanied by cubs is prohibited
	Aug. 20–Dec. 31			
<b>1963–1967</b>	May 1–June 15	180	1 bear	Taking of cubs or females accompanied by cubs is prohibited
	Sept. 1–Dec. 31			
<b>1967–1968</b>	May 15–June 15	154	1 bear	Taking of cubs or females accompanied by cubs is prohibited
	Sept. 1–Dec. 31		1 bear every 4	
<b>1968–1969</b>	May 15–June 15	154	regulatory years	Taking of cubs or females accompanied by cubs is prohibited
	Sept. 1–Nov. 30		1 bear every 4	
<b>1969–1970</b>	May 15–May 31	108	regulatory years	Taking of cubs or females accompanied by cubs is prohibited
			1 bear every 4	
<b>1970–1971</b>	Sept. 1–Nov. 30	91	regulatory years	Taking of cubs or females accompanied by cubs is prohibited
			1 bear every 4	
<b>1971–1972</b>	May 15–May 31	17	regulatory years	Taking of cubs or females accompanied by cubs is prohibited
			1 bear every 4	
<b>1972 - 1973</b>	May 25–June 10	15	regulatory years	Taking of cubs or females accompanied by cubs is prohibited
	Sept. 1–Sept. 30; Spring season dates announced by Commissioner	30	1 bear every 4 regulatory years	Taking of cubs or females accompanied by cubs is prohibited
<b>1973–1974</b>	Sept. 10–Oct. 10		1 bear every 4	
<b>1974–1975</b>	May 10–May 25	47	regulatory years	Taking of cubs or females accompanied by cubs is prohibited
	Sept. 10–Oct. 10		1 bear every 4	
<b>1975–1976</b>	May 10–May 25	47	regulatory years	area outside of ANWR; Taking of cubs or females accompanied by cubs is prohibited
	Sept. 10–Oct. 10		1 bear every 4	
<b>1976–1977</b>	May 10–May 25	47	regulatory years	Taking of cubs or females accompanied by cubs is prohibited
	Sept. 1–Oct. 10		1 bear every 4	48 permits issued - not more than 10 issued for ANWR;
<b>1977–1981<sup>a</sup></b>	May 10–May 25	56	regulatory years by permit	Taking of cubs or females accompanied by cubs is prohibited
	Sept. 1–Oct. 10		1 bear every 4	
<b>1981–1990<sup>b, c</sup></b>	May 10–May 25	56	regulatory years	Taking of cubs or females accompanied by cubs is prohibited
	Sept. 1–May 31		1 bear every 4	
<b>1990–1998<sup>c</sup></b>		273	regulatory years	Taking of cubs or females accompanied by cubs is prohibited
<b>1998–2002<sup>c</sup></b>	Sept. 1–May 31	273	1 bear every regulatory year	Taking of cubs or females accompanied by cubs is prohibited
<b>2002–2004<sup>c</sup></b>	Mar. 1–Nov. 30	275	1 bear every regulatory year	Taking of cubs or females accompanied by cubs is prohibited
	July 1–Nov. 30			
<b>2004–2005<sup>c</sup></b>	Mar. 1–June 30	275	1 bear every regulatory year	Taking of cubs or females accompanied by cubs is prohibited
	July 1–Nov. 30 OR 153/			
<b>2005–2012<sup>c</sup></b>	Mar. 1–June 30	122	1 bear every regulatory year	Taking of cubs or females accompanied by cubs is prohibited
	July 1–Nov. 30 OR 153/			
<b>2012–2017<sup>c</sup></b>	Mar. 1–June 30	122	2 bears every regulatory year	Taking of cubs or females accompanied by cubs is prohibited

Source Alaska Department of Fish and Game, Division of Wildlife Conservation. Alaska hunting regulations. ADF&G, 1961–2017.

a. Geographical divisions added in 1978–1979; Unit 25A and Unit 25B divisions made in 1980–1981.

b. Unit 25D division made in 1981–1982.

c. Seasons and bag limits apply only to Unit 25D.