

Customary and Traditional Use Worksheet, Brown Bear, Game Management Units 20A, 20B, and 20C

by

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Alaska Department of Fish and Game

Division of Subsistence



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Weights and measures (metric)		General		Measures (fisheries)	
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			Mathematics, statistics	
meter	m	all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.	all standard mathematical signs, symbols and abbreviations	
milliliter	mL			alternate hypothesis	HA
millimeter	mm			base of natural logarithm	e
				catch per unit effort	CPUE
Weights and measures (English)		at	@	coefficient of variation	CV
cubic feet per second	ft ³ /s	compass directions:		common test statistics	(F, t, χ^2 , etc.)
foot	ft	east	E	confidence interval	CI
gallon	gal	north	N	correlation coefficient (multiple)	R
inch	in	south	S	correlation coefficient (simple)	r
mile	mi	west	W	covariance	cov
nautical mile	nmi	copyright	©	degree (angular)	°
ounce	oz	corporate suffixes:		degrees of freedom	df
pound	lb	Company	Co.	expected value	E
quart	qt	Corporation	Corp.	greater than	>
yard	yd	Incorporated	Inc.	greater than or equal to	≥
		Limited	Ltd.	harvest per unit effort	HPUE
Time and temperature		District of Columbia	D.C.	less than	<
day	d	et alii (and others)	et al.	less than or equal to	≤
degrees Celsius	°C	et cetera (and so forth)	etc.	logarithm (natural)	ln
degrees Fahrenheit	°F	exempli gratia	e.g.	logarithm (base 10)	log
degrees kelvin	K	(for example)		logarithm (specify base)	log ₂ , etc.
hour	h	Federal Information Code	FIC	minute (angular)	'
minute	min	id est (that is)	i.e.	not significant	NS
second	s	latitude or longitude	lat. or long.	null hypothesis	HO
Physics and chemistry		monetary symbols (U.S.)	\$, ¢	percent	%
all atomic symbols		months (tables and figures): first three letters	Jan,...,Dec	probability	P
alternating current	AC	registered trademark	®	probability of a type I error (rejection of the null hypothesis when true)	α
ampere	A	trademark	™	probability of a type II error (acceptance of the null hypothesis when false)	β
calorie	cal	United States (adjective)	U.S.	second (angular)	"
direct current	DC	United States of America (noun)	USA	standard deviation	SD
hertz	Hz	U.S.C.	United States Code	standard error	SE
horsepower	hp	U.S. state	use two-letter abbreviations (e.g., AK, WA)	variance	Var
hydrogen ion activity (negative log of)	pH			population sample	var
parts per million	ppm				
parts per thousand	ppt, ‰				
volts	V				
watts	W				

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**CUSTOMARY AND TRADITIONAL USE WORKSHEET, BROWN BEAR,
GAME MANAGEMENT UNITS 20A, 20B, AND 20C**

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INTRODUCTION

BACKGROUND

The administrative history of customary and traditional use determinations (C&T) for brown bears *Ursus arctos* in game management units (GMU) 20A, 20B, and 20C is unclear. The Alaska Board of Game (BOG) appears to have considered customary and traditional (C&T) use data for brown bears in GMU 20 in 1991; however, it appears that the BOG did not make any determinations at that time for GMUs 20A, 20B, or 20C. Making a C&T determination for brown bears in these 3 subunits was again before the BOG at their 1992 Subsistence Consistency Review meeting, but the proposal was deferred and apparently never taken up again during subsequent meetings.

This revised C&T use summary for brown bears in GMU 20 provides an expanded description of C&T harvest and use practices for brown bears from Alaska Department of Fish and Game (ADF&G) sealing records and from the ethnographic and ethnohistorical literature of this region in eastern Interior Alaska.

THE EIGHT CRITERIA

CRITERION 1: LENGTH AND CONSISTENCY OF USE

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

Historically, residents of Interior Alaska harvested brown bears as a source of meat, fat, and fur. Although brown bears were not a major subsistence resource, brown bears were harvested for food and other subsistence uses, for demonstration of hunting skill, and in protection of human life. Members of the Wood River, Nenana-Toklat, and Salcha bands of Athabascans hunted in the GMU 20A area; the Salcha band also hunted in the GMU 20B area; and Nenana-Toklat and Mouth-of-the-Toklat bands hunted in the GMU 20C area. Brown bear use in all 3 subunits appears to follow the pattern documented in the Upper Tanana, where use had declined by 1930 (McKenna 1959).

Additionally, residents of Anderson, Healy, and McKinley Village have harvested brown bears since the communities were established in 1961, 1915, and the 1920s, respectively. The populations of these communities are mixed; some households use wild resources while others do not.

According to the 1992 Subsistence Consistency Review Worksheet for brown bears in GMUs 20A–C, 2 use patterns are represented by brown bear hunters today. Sport hunters primarily concerned with obtaining trophy brown bears often use riverboats and aircraft to access areas of brown bear habitat specifically to hunt brown bears. Among area subsistence hunters, however, a general preference for black bear meat and strong traditional Athabascan beliefs surrounding the hunting and use of bears have limited the use of brown bears as a major food resource. In general, brown bears are more likely to be taken in the protection of human safety. Today, a few local hunters pursue brown bears: between 1992 and 2011, Alaska residents harvested an annual average of 9 brown bears in GMU 20A, 8 in 20B, and 4 in 20C (Table 1). More specifically, of the 9 brown bears harvested in 20A, 2 were taken by 20A residents; of the 8 harvested in 20B, 7 were taken by 20B residents; and of the 4 harvested in 20C, 2 were taken by 20C residents, including residents of Anderson–Clear, Healy, and Nenana. It is important to keep in mind that only a small portion of GMU 20A and a slightly larger portion of GMU 20B lie outside of the Fairbanks Non-Subsistence Use Area, however, the harvest reports are not broken out by those areas.

CRITERION 2: SEASONALITY

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

Brown bears are available year-round, but are harvested primarily during the spring, summer, and fall when residents are engaged in other activities. Harvest by Tanana residents (likely in GMU 20C) was documented for the months of July, August, September, and October. Lake Minchumina area trappers occasionally shot bears in November and December. Minto residents generally harvested brown bears in May, August, and September as part of their annual harvest cycle (Andrews 1988).

Current regulations in GMUs 20A and 20B allow residents and nonresidents to harvest 1 brown bear per regulatory year between September 1 and May 31. In GMU 20C, residents and nonresidents can harvest 1 bear per regulatory year between August 10 and June 30.

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.

Accounts of hunting in the upper Kantishna area to the west provide an example of harvest patterns in the region in the early 1800s (Hosley 1966). The winter harvest method involved awakening an animal from its den and spearing it. In spring, after bears emerged from their dens, hunters used ground squirrel nests to attract bears. A squirrel was released near a bear, and the bear would usually capture the squirrel and follow the tracks back to the nest, and then be harvested with lances while preoccupied with the squirrels. Lances were 8 to 10 feet long and tipped with bone. The shaft was tied with rawhide along its length to improve grip. Spears were the primary means of taking bears until firearms came into more common use in the area during the last Russian period (up to 1867). The historical practice of hunting bears from dens with spears was a demonstration of hunting skill and was considered prestigious.

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.

Historically, Salcha band members hunted brown bears at a location called “Mutton Hill,” in the Alaska Range between Dry Creek and Little Delta River (Andrews 1975). The Wood River band exploited a variety of resources from the Tanana River to the Alaska Range, generally east of the Nenana River. The Nenana–Toklat band used the areas near the Nenana River and to the west (Shinkwin and Case 1984).

Contemporary hunting areas by Nenana Valley residents were documented in a more recent 1987 study (ADF&G Community Subsistence Information System [CSIS¹]). McKinley hunters reported bear hunting activity in the Yanert Valley and the hills immediately to the north (Figure 1). Healy hunters also used the Yanert Valley, as well as lands to the north of the Healy River extending to near Anderson (Figure 2). Anderson–Clear hunters also used the lands between their community and the Healy River (Figure 3). No brown bear hunting areas were mapped for Nenana (Shinkwin and Case 1984). Minchumina residents harvest brown bears in the Kantishna drainage (Bishop 1978).

1. ADF&G Community Subsistence Information System: <http://www.adfg.alaska.gov/sb/CSIS/>. Herein after cited as CSIS.

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.

Division research shows that brown bears were used a variety of purposes. Bear fat was mixed with berries and also used in making fried bread and a variety of bannock. Hides were used as bedding and in the manufacture of waterproof footwear (including bear grease), and the bones were used for tools.

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:

Division research shows that extended families with 3 generations are common in Nenana and Minto and knowledge of hunting resources is shared within this family context. For example, knowledge of bear dens is still held today and passed on from generation to generation.

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.

In general, wild resources are shared between households, especially between households related by kinship and between neighbors. In 1987, 3.1% of McKinley households reported receiving brown bears, while in Healy 1.2% reported using brown bears. Such sharing was not reported in Anderson (CSIS). Generally, division research shows that bear meat and fat is considered a specialty food and is served at community events, such as funerals or memorial potlaches to elders or special guests.

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.

Eastern Interior communities harvest, use, and rely upon a wide diversity of fish and game resources. Documented harvests in these communities included 1,015 pounds per person in Minto in 1984 and 297 pounds per person in Lake Minchumina in 2002 (CSIS; Holen et al. 2006). Residents engage in an annual harvest cycle that includes the harvest of salmon, whitefishes, moose, waterfowl, and furbearers. The mix of species depends upon species availability. For most Interior Alaska communities, terrestrial mammals, such as moose and black bears, and salmon or other nonsalmon fish, comprise the largest components of the total community harvest. Brown bears are not historically an important contribution to the annual subsistence harvest of these communities, but they are targeted by some hunters and harvested opportunistically by others.

The amount of cash available in most eastern Interior Alaska communities is relatively small, compared to urban parts of Alaska. According to the U.S. Census Bureau (2011),² median household income for

2. U.S. Census Bureau, 2011, <http://www.census.gov/>, accessed on October 22, 2011.

Minto and Nenana for 2010 was approximately \$40,313, compared with the Alaska average household income of more than \$44,205. At the same time, imported food costs are very high. The people of the eastern Interior Alaska use and rely upon virtually all the edible wild game species available in their region. Many people in these communities cannot afford to buy meat or fish, and wild foods are essential to the quality of their diet. The harvesting of wild foods continues to evolve in many ways as social, economic, and environmental conditions change.

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TABLES AND FIGURES

Table 1. Brown bear harvests in game management units 20A, 20B, and 20C, by unit residency, 1992–2011.

Brown bear harvests in GMU 20A, by year																					
GMU residency ^a	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Total
20A	3	0	0	0	0	1	2	1	2	3	1	2	3	1	4	1	2	2	3	2	33
20B	6	5	3	5	4	7	3	3	3	2	1	5	3	6	9	4	6	4	7	1	87
20C	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	3
Other Alaska	6	2	4	0	3	0	2	4	0	3	4	2	2	1	2	9	3	7	2	9	65
Total	15	7	7	5	7	9	7	8	5	9	6	9	8	8	15	14	12	13	12	12	188

Brown bear harvests in GMU 20B, by year																					
GMU residency ^a	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Total
20A	1	1	1	0	1	0	0	2	3	0	1	1	0	2	0	0	2	1	0	0	16
20B	8	1	6	3	4	4	8	4	10	4	8	0	14	7	3	5	15	7	9	7	127
Other Alaska	0	0	0	1	2	0	1	1	0	0	0	0	1	3	0	1	2	0	1	4	17
Total	9	2	7	4	7	4	9	7	13	4	9	1	15	12	3	6	19	8	10	11	160

Brown bear harvests in GMU 20C, by year																					
GMU residency ^a	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Total
20A	1	0	1	0	4	1	0	2	3	2	0	0	1	0	3	0	2	3	0	0	23
20B	0	0	3	2	2	3	1	1	0	0	0	0	1	0	2	0	0	0	0	0	15
20C	0	0	0	0	0	0	0	1	0	0	0	0	0	0		0	0	0	0	0	1
Other Alaska	0	0	2	0	0	0	1	1	3	1	3	1	1	0	2	1	1	2	4	1	24
Total	1	0	6	2	6	4	2	5	6	3	3	1	3	0	7	1	3	5	4	1	63

Source ADF&G bear sealing records, 1992–2011.

a. Residency includes military bases.

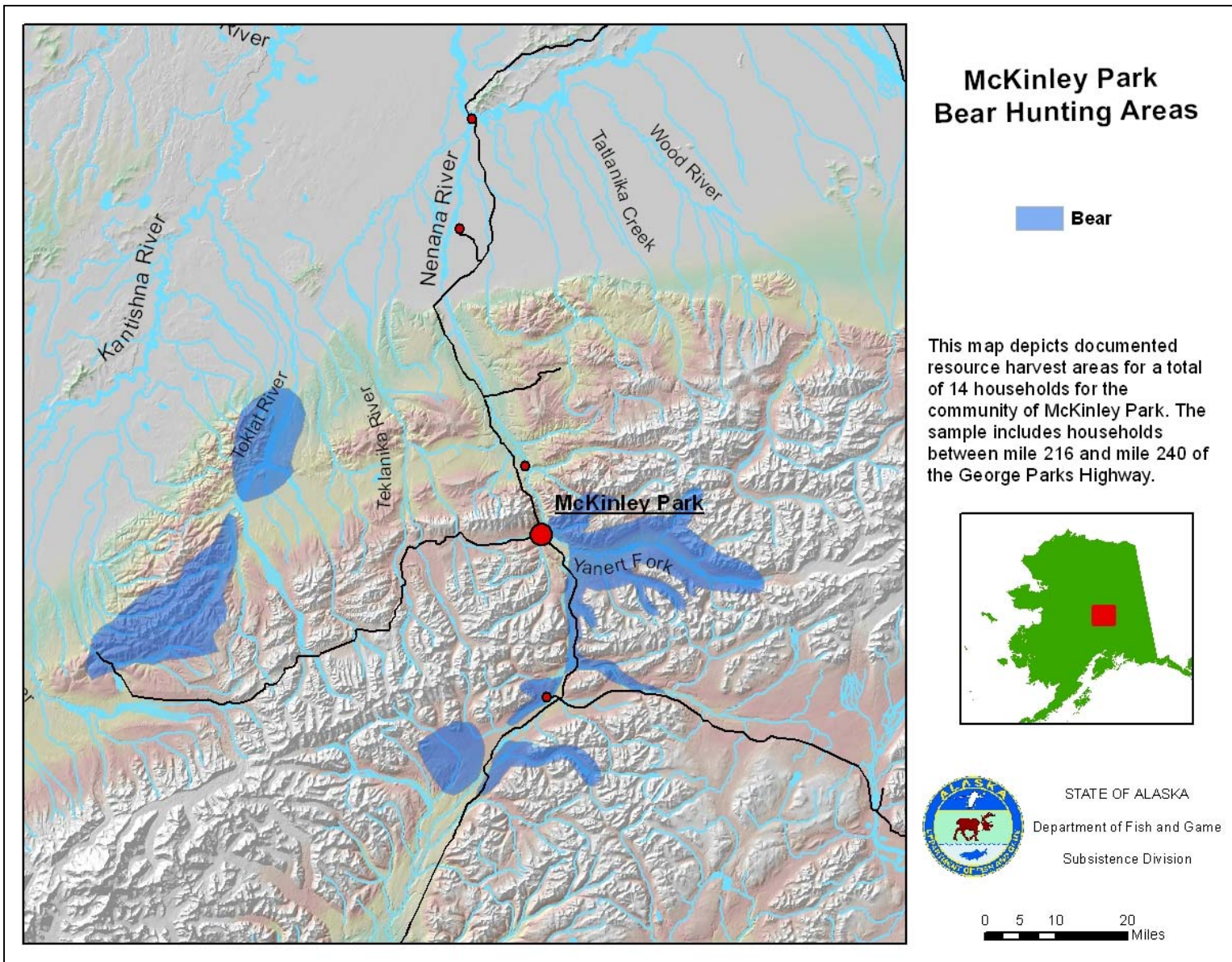


Figure 1.—McKinley Park bear harvesting areas.

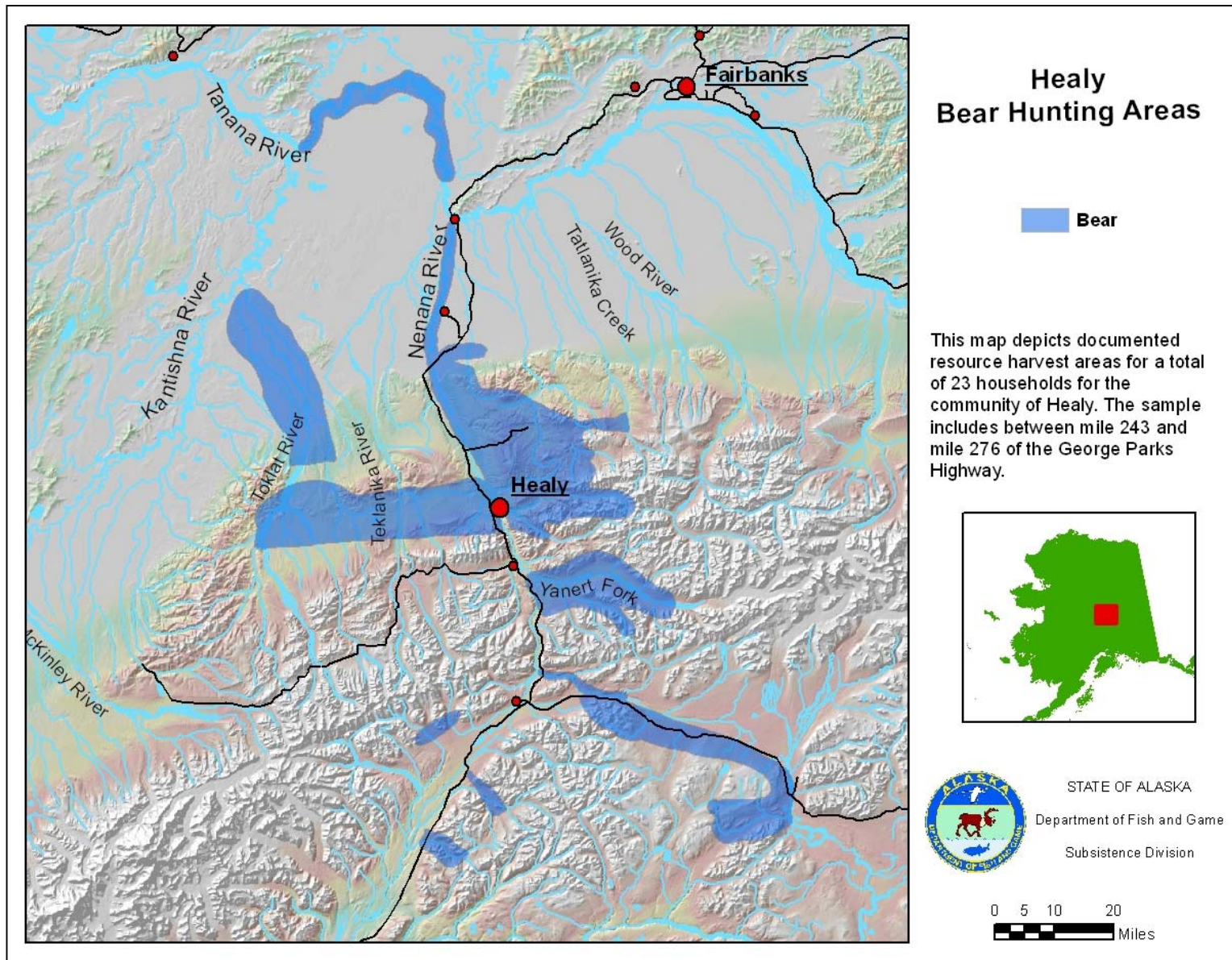


Figure 2.–Healy bear harvesting areas.

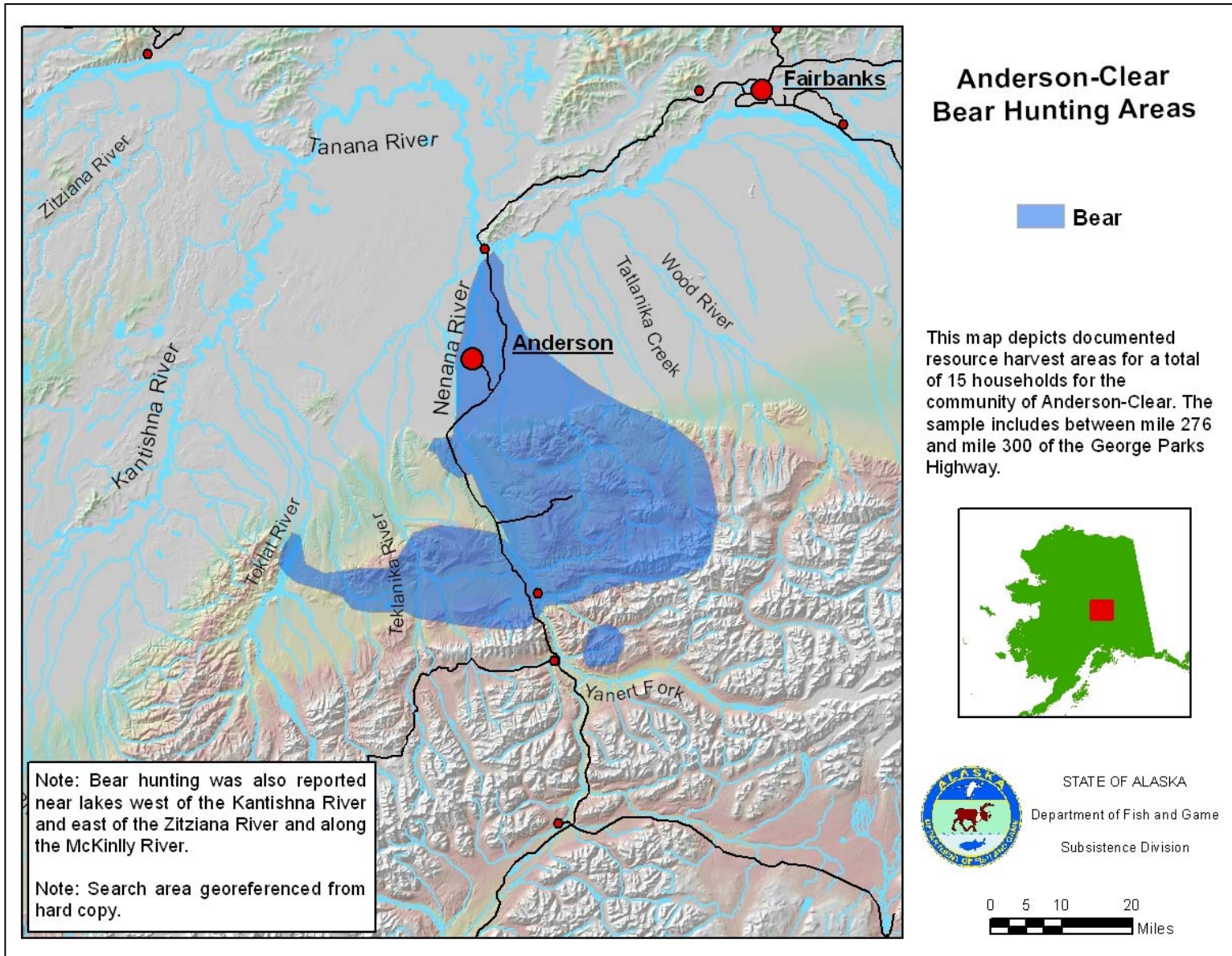


Figure 3.—Anderson–Clear bear harvesting areas.