CONTEMPORARY BROWN BEAR USE IN NORTHWEST ALASKA

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Technical Paper No. 163

This research was partially supported
by ANILCA Federal Aid Funds administered through
the U.S. Fish and Wildlife Service
Anchorage, Alaska

Alaska Department of Fish and Game
Division of Subsistence
Kotzebue, Alaska
1989

ABSTRACT

This report describes subsistence uses of brown bear by residents of northwest Alaska. The project focused on the Kotzebue Sound region (Game Management Unit 23), though research was also undertaken to a more limited extent in the Norton Sound area (GMU 22). Study communities included Buckland, Kivalina, Kotzebue, Noatak, Nome, Noorvik, Selawik, Shaktoolik, Shungnak, Unalakleet, and White Mountain.

Division of Subsistence researchers gathered information primarily with key respondent interviews. Supplemental information was obtained from Department harvest records, previous Subsistence Division fieldwork, and existing literature. The research took place in October and November 1987 with additional fieldwork in March and April 1988.

This study found that northwest Alaska communities exhibited different harvest and use patterns for brown bear. In GMU 23, the use of brown bear for food and raw material was prevalent in all the inland study communities. Coastal communities, in contrast, rarely used brown bear for food because bears in these areas feed on sea mammal carcasses along the shore, giving the meat an unpleasant flavor. Subsistence use of brown bear was not widespread in GMU 22. Of the communities for which the researchers had information, only White Mountain and Golovin used brown bear for food.

In 1987, an estimated 35-48 brown bears were harvested for food by subsistence hunters in GMU 23 communities. Local residents harvested additional bears for trophies and in defense of life and property. No estimate was made of the subsistence brown bear harvest in GMU 22 because few communities used brown bear for food, and information for some communities was not available.

Few brown bears harvested by subsistence hunters were reported to the Department. In 1987, an estimated 14-19 percent of the brown bear harvest in the

GMU 23 study communities was reported. Of the bears killed in the past decade by interviewed hunters, only three percent were reported. Because bear hunting in villages is frequently carried out under traditional hunting practices, often in violation of state regulations, hunters are reluctant to report their kills.

Northwest Alaska residents hunt brown bears primarily in spring and fall, and rarely in summer or winter. Of the several strategies used to hunt brown bear, the most common is to take them opportunistically. Brown bear hunting in some communities occurs at night along spawning streams where bears come to feed.

Brown bear meat is preserved in a variety of ways, including dried, half-dried, frozen, and aged. Bear fat is particularly prized as both a food and a medicine. Bear hides are used for bedding and for clothing.

Northwest Alaskans have an extensive array of traditional laws and lore regarding human and bear interactions. These laws cover hunting strategies, butchering processes, personal conduct, methods of defense, and appropriate attitudes. For example, because brown bears are believed to have keen hearing, Iñupiaq hunters do not openly discuss their bear hunts. The lore offers examples of severe consequences to the hunter and his family if these laws are not heeded.

The final chapter in this report discusses the incongruity between current brown bear regulations and the customary and traditional bear hunting practices in contemporary northwest Alaska. The current state regulations presume the primary use of a brown bear is for a trophy hide or mount, while subsistence hunters' rules presume the primary use of a brown bear is as a source of food and raw material. These differences in perspective are culturally based. A healthy bear population and few allocative conflicts in northwest Alaska today make this a good time to evaluate subsistence brown bear hunting regulations.

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ACKNOWLEDGEMENTS

by Hannah Loon

This project would not have been possible without the assistance of the local hunters and elderly women who shared their invaluable knowledge of the uses of brown bear during their lifetimes. I have many people to thank. As we are taught to do in our culture, I will give thanks and respect to the elders first:

Edna Commack of Shungnak
Napolean and Mildred Black of Shungnak
Wilson, Sr., and Daisy Tickett of Shungnak
Wesley Woods of Shungnak

Johnny Foster of Selawik
Magdeline Tikik of Selawik
William Foster of Selawik
Nellie Russell of Selawik

Evelyn Barr of Noorvik

Nellie Wood of Noatak

Agnes Komakhok of White Mountain
Percy Abloinga of White Mountain
Tom Brown of White Mountain

John Aulluiye of Unalakleet
Stanton Katchatag of Unalakleet
Herbert Panipchuk of Unalakleet

I know some of the interview questions dealt with sensitive topics for hunters, and I appreciate their time and patience in sharing their thoughts and concerns about current brown bear hunting practices and regulations. Also, I would like to thank the local city councils and IRA councils and their staff for their willing support of this project.

Furthermore, I would like to thank Bob Wolfe, the Division's research director, for his technical support; Susan Georgette, who taught me how to "give it a stab" on projects such as this; and Jim Magdanz, who patiently trained me on the computer as the work progressed.

CHAPTER 1

INTRODUCTION

In 1987, the Alaska Board of Game determined that residents of Game Management Units (GMUs) 22 and 23 in northwest Alaska qualified for subsistence uses of brown bear. However, the Board did not discuss specific regulations pertaining to subsistence brown bear hunting, requesting that the local advisory committees and regional council develop proposals for subsistence brown bear hunting to submit to the Board of Game.

Current hunting regulations in northwest Alaska allow a subsistence hunter to harvest one bear every four regulatory years. Department staff in Kotzebue suspects that brown bear harvests occur more frequently, and are often not reported. Because contemporary brown bear harvest and use have not been well-documented in northwest Alaska, this research project was conceived as a way to provide information on brown bear uses in northwest Alaska to assist the advisory committees in developing regulatory proposals and the Board of Game in considering these proposals.

PURPOSE OF STUDY

The purpose of this study is to provide information to local advisory committees and the Alaska Board of Game on contemporary brown bear uses by residents of northwest Alaska (GMUs 22 and 23). This includes information on:

1. the communities that harvest brown bear;
2. the uses of brown bear for food, medicine, tools, shelter, and other purposes;
3. harvest seasons and methods;
4. levels of harvest; and

5. traditional Iñupiaq laws and beliefs associated with brown bears.

METHODOLOGY

Data for this project were gathered through a literature review and with key respondent interviews. Most of the research took place in October and November 1987, with supplementary fieldwork in March and April 1988. Division of Subsistence staff member Hannah Loon, a lifetime resident in the region and Iñupiaq speaker, conducted the research with the occasional assistance of Susan Georgette, also with the Subsistence Division. The project focused on communities in GMU 23, though research was also undertaken to a more limited extent in GMU 22. Figure 1 depicts the study area and the GMU boundaries.

Literature Review

Prior to fieldwork, existing literature was reviewed for information on brown bear use in northwest Alaska. Fairly detailed information on some aspects of brown bear use in upper Kobuk River communities is included in Anderson, Bane, Nelson, Anderson, and Sheldon (1977). Limited information is also available in Uhl and Uhl (1977) on the Cape Krusenstern area; Burch (1985) on Kivalina; Thomas (1982) on Shaktoolik; Eisler (1978) on the western Seward Peninsula; Uhl and Uhl (1979) on Noatak; and Stoker (1983) on Wales, Kivalina, and Point Hope. Unpublished field notes from Division of Subsistence research in Golovin, Koyuk, and Shishmaref contain some information on brown bear use in these communities. Information on brown bear harvests by Kotzebue residents was collected by the Division of Subsistence in a 1987 stratified household survey (Georgette and Loon in prep.). The Division of Wildlife Conservation maintains records of reported brown bear harvests throughout the state.

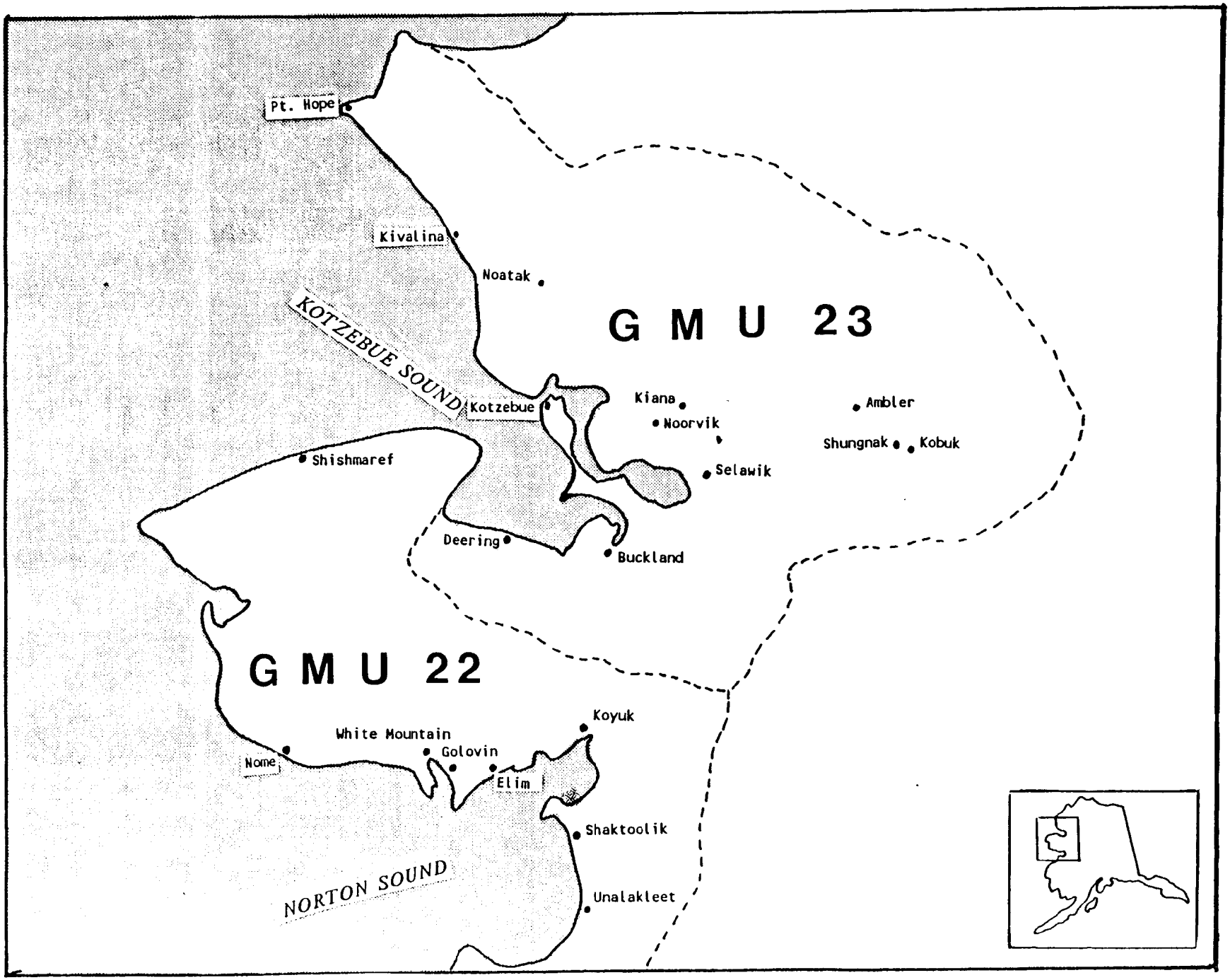


Figure 1. Communities in the study area and Game Management Unit (GMU) boundaries.

Additional information on brown bear use in northwest Alaska is available in the transcripts of tape recordings of the NANA Region Elders' Conferences. These tapes are held by the Northwest Arctic Borough School District in Kotzebue.

Key Respondent Interviews

Before conducting key respondent interviews, the researchers first determined which communities in northwest Alaska currently use brown bear. For GMU 23, this involved telephoning a person or persons knowledgeable about brown bear hunting in each community. Because northwest Alaska villages are small (600 people or less) and families are related, village residents are typically quite familiar with the activities of other villagers, and thus can be reliable sources on the community's hunting practices. For GMU 22, the researchers relied on the knowledge of Department staff and other individuals in local organizations in Nome to determine which communities most likely hunt brown bears for subsistence. Some of the GMU 22 communities selected for this study were chosen because the Department had little information on the uses of brown bear in these villages.

Because of limited time and personnel, fieldwork was not conducted in all villages using brown bear. Villages similar in size, language, hunting patterns, and geographic location were clustered, and the researchers visited at least one village in each cluster. Table 1 summarizes the clusters and the village(s) visited in each.

Using their own knowledge, the researchers compiled a list of people to interview in each study community. This list was reviewed by key respondents for changes and additions. The listed individuals included respected hunters in the community and women experienced in processing subsistence foods. In small, culturally homogeneous villages, virtually any adult resident can identify the community's knowledgeable brown bear hunters. These hunters, in turn, reliably represent the norm

TABLE 1. VILLAGE CLUSTERS FOR RESEARCH PURPOSES

CLUSTER	VILLAGE(S) VISITED
Ambler, Kobuk, and Shungnak	Shungnak
Noorvik and Kiana	Noorvik
Selawik	Selawik
Buckland and Deering[1]	Buckland
Noatak, Kivalina, and Pt. Hope[1]	Noatak and Kivalina
Kotzebue	Kotzebue
Golovin and White Mountain	White Mountain
Shaktoolik and Unalakleet	Shaktoolik and Unalakleet
Nome	Nome

1 Although Deering and Pt. Hope were not study communities in this project, information on their brown bear use collected in subsequent fieldwork was included in this report.

for the village because of the community's cultural homogeneity. The key respondent method worked particularly well in research on brown bears because typically only a small number of men in each community hunts bears, distributing their harvest to other local households. Brown bear hunting is a more specialized activity than, for instance, caribou or moose hunting.

The regional centers of Nome and Kotzebue were more problematic. Their large, heterogeneous populations made it difficult to draw general conclusions from a handful of respondents. In Kotzebue, the researchers combined Department sealing records, data from a 1987 Division of Subsistence stratified survey of Kotzebue's harvest levels, and estimates from key respondents to arrive at the community's estimated brown bear harvest. Non-quantified information on Kotzebue's bear use was obtained through key respondent interviews and through the personal observations of Department staff.

In Nome, the researchers interviewed several Department staff, two Native leaders, a Bureau of Indian Affairs employee, a Native hunter, the chairman of the local Fish and Game Advisory Committee, an elderly Native woman, and one of three Nome residents who sealed a bear in fall 1987. Although this sample was small in proportion to the entire Nome population, the interviewed individuals were knowledgeable residents familiar with different segments of the Nome population. The researchers were able to

make some generalizations based on these interviews, but did not attempt to estimate Nome's brown bear harvest based on this sample.

The researchers prepared questionnaires to use in the key respondent interviews (Appendix A). Separate questionnaires were used for men and women because each had knowledge of different topics pertaining to brown bear. The questionnaire for men gathered information on uses of brown bear, harvest quantities, harvest areas, hunting methods, and traditional seasons. Questions for women focused on the preparation and preservation of brown bear and on its uses for medicine, crafts, tools, and the like. Both questionnaires focused on brown bear use during the past ten years (1978-1987), though information offered by respondents for earlier times was also recorded. Notes were usually taken by hand during the interviews, but in some cases, particularly with elders, a tape recorder was used. Interviews were conducted in Iñupiaq when appropriate. Between field trips, the researchers entered the field notes into a computerized data base.

In October and November 1987, the researchers spent 21 days conducting interviews with key respondents in the study communities. Kotzebue key respondents were interviewed as time permitted between December 1987 and April 1988. Visits to communities took place on the following occasions:

Buckland	October 28-30, 1987
Kivalina	November 5-6, 1987
Noatak	November 3-4, 1987
Nome	November 20, 1987
Noorvik	October 14-16, 1987
Selawik	October 12-14, 1987
Shaktoolik	November 17-18, 1987
Shungnak	October 7-9, 1987
Unalakleet	November 18-19, 1987
White Mountain	November 16-17, 1987

TABLE 2. NUMBER OF MEN AND WOMEN INTERVIEWED BY COMMUNITY

COMMUNITY	MEN	WOMEN	TOTAL
Buckland	5	1	6
Kivalina	5	0	5
Kotzebue	4	0	4
Noatak	5	1	6
Nome	8	1	9
Noorvik	5	1	6
Selawik	4	2	6
Shaktoolik	3	0	3
Shungnak	4	3	7
Unalakleet	3	1	4
White Mountain	5	1	6
TOTAL	51	11	62

Sample

Active bear hunters in selected communities of GMUs 22 and 23 comprised the biggest portion of the study's sample. An active hunter was defined as a person who hunts each year for big game animals. The researchers used their own knowledge and that of village councils and other village residents to identify which active hunters hunt brown bears. A second, smaller sample consisted of retired hunters who have hunted bears in the past, but no longer do so because of their age or health. These hunters were typically quite elderly. A third sample comprised women who were familiar with the uses of bear for medicinal purposes, clothing, tools, shelter, and food. Retired hunters and women were identified using the same method as above. A total of 62 individuals were interviewed: 51 men (46 active and 5 retired hunters) and 11 women. Table 2 lists the number of men and women interviewed in each community.

Because the samples were not statistically selected, it was impossible to quantify the collected information as representing a percentage of respondents or communities. Such an analysis would have been misleading. However, because most study

communities were small and homogeneous, the samples yielded information representative of the accepted practices and beliefs in the communities today. The existing rapport between the researchers and many of the sampled individuals enabled the interviewees to talk honestly about their bear hunting practices, which in many cases violated state regulations.

CHAPTER 2

BROWN BEAR HARVEST AND USE PATTERNS

This research found that the study communities exhibited different harvest and use patterns for brown bear. While obtaining food was the primary purpose of brown bear harvests in some communities, other communities rarely eat brown bear today and in some cases regard these animals primarily as a nuisance. Trophy hunting of brown bear was rare in the villages, but more common in the regional centers of Nome and Kotzebue.

In GMU 23, the use of brown bear for food was prevalent in all the inland study communities. These included Noatak, Noorvik, Shungnak, Selawik, and Buckland. Although research was not conducted in Kiana, Ambler, or Kobuk, the researchers believe these communities have brown bear use patterns similar to the other Kobuk River villages of Noorvik and Shungnak as a result of shared culture, history, geography, and kinship.

Among these inland study communities, however, the extent of brown bear use for food varied. For instance, one Noatak resident said, "We all eat brown bear," while in Buckland interviewed hunters said only some villagers eat bear meat. In any case, only a few men in each village actually hunt brown bear, distributing their harvest to other households who enjoy bear meat.

Subsistence hunters in these GMU 23 inland communities value both the meat and the hide of brown bears. Hunters therefore prefer to take brown bears when both the meat and the hide are in good condition. One Noorvik resident, however, said that hunters who walk a long distance before shooting a bear often leave the hide at the kill site rather than pack it out. A Noatak hunter said he has participated in several brown bear hunts in which only the meat -- and not the hides -- was retrieved.

In contrast to the inland communities, the coastal communities of Deering, Kivalina, and Point Hope only occasionally use brown bear for food. Hunters in these communities said brown bears in coastal areas frequently feed on carcasses of sea mammals washed up along the shore, giving the meat an unpleasant odor and undesirable taste. Kivalina respondents, however, said they occasionally take brown bears for food when the animals are upriver feeding on fish and berries. One Kivalina hunter killed a brown bear several years ago for a Selawik woman residing in Kivalina who craved bear meat. In Deering, a few families said they eat bear meat, but this did not seem to be a pervasive community pattern. A Point Hope hunter said residents of his village occasionally kill a small brown bear for food, but this is very rare.

Because people from a variety of geographical and cultural backgrounds live in Kotzebue, the regional center displayed a mixture of brown bear harvest patterns. Some residents' bear use resembled those of the inland study communities, others resembled coastal communities such as Kivalina, and still others were rooted in the Euro-American trophy hunting tradition.

In GMU 22, the researchers used fieldwork, key respondent interviews, and existing literature to determine which communities use brown bear for food. Previous Division research in Shishmaref (Sobelman 1985) and Brevig Mission (Magdanz and Olanna 1986) indicated that these communities rarely harvest brown bear for food. The other western Seward Peninsula communities of Wales and Teller are believed to have similar patterns as a result of shared geography and family ties. Fieldwork during this study revealed that the Norton Sound communities of Shaktoolik and Unalakleet rarely use brown bear for food in contemporary times and generally consider brown bears a nuisance. This finding was consistent with the work of Thomas (1982:235) in Shaktoolik. In contrast, White Mountain, another Norton Sound community, continues to use brown bear for food. Previous Division research showed this is also the case for Golovin (James Magdanz pers. comm., 1987; Thomas 1980). Division field notes

(Thomas 1979) indicated that Koyuk residents no longer take brown bears for food, though they have in the past. The researchers had insufficient information for the GMU 22 communities of Elim, St. Michael, or Stebbins to determine their bear use.

None of the respondents interviewed in Nome knew of any Nome residents who hunted brown bear for food. One respondent said he once brought home a hindquarter of bear meat to taste, but many people advised him not to eat it because of the danger of trichinosis. Another respondent also cited trichinosis as the major reason people did not eat brown bear. One respondent said hunters sometimes bring home small quantities of bear meat, but in general bear meat was not used for food in the Nome area. A Nome hunter originally from White Mountain said he used to hunt bears for food while visiting his home village, but has not done so in more than ten years.

In summary, the harvest of brown bear for food and raw material in GMU 23 was widespread in the inland communities of Noatak, Buckland, Selawik, and along the Kobuk River. The coastal communities of Deering, Kivalina, and Point Hope seldom used brown bear for food because the bears' diet of sea mammal carcasses gives the meat an unpleasant flavor. From time to time, however, coastal hunters take brown bears for food in upriver areas. The regional center of Kotzebue displayed a mixed pattern of brown bear use that included both harvest for food and harvest for the hide only. Of the GMU 22 communities for which the researchers had information, only White Mountain and Golovin regularly use brown bear for food today. The other GMU 22 communities rarely hunt brown bear for food, though some have in the past, especially during periods of food scarcity.

The researchers caution that contemporary subsistence practices are not fixed, and that a hunter's or a community's use of a species varies from year to year and from decade to decade, depending on the circumstances. In the 1980s, some communities take brown bears every year for food, while in others the harvest is much less frequent. But

it is not possible to say for any northwest Alaska community that brown bear is *never* used for food because each community offered circumstances in which this occurred.

In the 1980s, brown bear -- compared with caribou or moose -- was not a substantial component of the diet in any northwest Alaska community. In past years, however, when other big game was not available, brown bear likely played a vital seasonal role in the subsistence diet. This may again be the case if moose and caribou populations declined.

HARVEST LEVELS

Because much of northwest Alaska's brown bear harvest is not reported to the state as required, the Department's records are an incomplete count of the region's actual bear harvest. To supplement these records, the researchers asked interviewed hunters how many brown bears they had taken for food and in defense of life and property (DLP) over the past ten years (1978-1987). Although precise harvest numbers can be difficult to obtain in retrospective questioning, the researchers observed that interviewed hunters appeared conscientious in estimating their harvests. Furthermore, because the number of brown bears killed by each hunter is small compared to animals such as caribou or waterfowl, hunters seemed able to accurately recall their harvests. Table 3 presents harvest totals for interviewed hunters in each study community (*n* equals the number of interviewed hunters).

Because not all bear hunters were interviewed, Table 3 does not represent the entire bear harvest by local residents during the ten-year period. Nevertheless, these harvest numbers demonstrate that hunters in some study communities regularly harvest brown bears for food, though few do so each year. One Noatak hunter in his 30s said he has killed a brown bear every year for the past decade, and in one year killed two, but this was more the exception than the rule among respondents.

TABLE 3. BROWN BEAR HARVESTS BY INTERVIEWED HUNTERS IN STUDY COMMUNITIES, 1978-1987

Community	Number Harvested For Food by Sample 1978-1987	Number Harvested DLP By Sample 1978-1987
Buckland (n=5)	11-12	0
Kivalina (n=5)	3-4	0
Kotzebue (n=4)	6	0
Noatak (n=5)	25-26	1
Noorvik (n=5)	13	1
Selawik (n=4)	24	1
Shaktoolik (n=3)	0	5
Shungnak (n=4)	9-10	1
Unalakleet (n=3)	2	*
White Mountain (n=5)	15	0

* Not available

The harvest numbers in Table 3 also show that interviewed hunters in most study communities took bears for food far more often than in defense of life and property (DLP). Many hunters said they have not taken any DLP bears in the past decade, and some said they have never taken a DLP bear in their lives.

It is worth noting that a village hunter's concept of a DLP bear might diverge from the Department's. For instance, in communities where brown bear meat is eaten hunters said they had rarely, if ever, taken a bear in defense of life or property. These hunters might view a nearby bear as an opportunity for food rather than as a threat. Although they might shoot a bear near a camp or a village as a safety measure, these hunters would likely use the meat for food and not regard the kill as a DLP, even if the bear were not taken in accordance with regulations.

Other study communities, however, viewed brown bears differently. Some respondents in Unalakleet, for instance, said they could not imagine using a brown bear for food. All interviewed people in Unalakleet said local residents generally consider bears a nuisance and frequently shoot them on sight, disposing of the carcass so it will not be found. Two Unalakleet respondents felt that the state protected bears at the

TABLE 4. ESTIMATES BY INTERVIEWED HUNTERS OF 1987 BROWN BEAR HARVESTS IN STUDY COMMUNITIES

Community	1985 Population	Estimated 1987 Community Harvest For Food	Estimated 1987 Per Capita Harvest For Food (lbs)
Buckland	248	3-5	3.4-5.6
Kivalina	285	0	0
Kotzebue	2,633	8-10	0.8-1.1
Noatak	330	2-5	1.7-4.2
Noorvik	529	4	2.1
Selawik	589	5-6	2.4-2.8
Shaktoolik	163	0	0
Shungnak	226	5-6	6.2-7.4
Unalakleet	759	0	0
White Mountain	164	5	8.5

expense of local people. Some residents of Shaktoolik, Nome, Deering, Kivalina, and Point Hope similarly expressed the view that bears were a nuisance. Reindeer herders also commonly held this view.

Unalakleet and Shaktoolik hunters have not always viewed bears as a nuisance. One Shaktoolik hunter said people ate brown bear 30-40 years ago before moose arrived in the area. Hunters in Unalakleet reported the same. Another Unalakleet hunter said bears were more palatable before walrus carcasses washed up along the shore in such large numbers. In both communities, hunters felt bears were more common now than in the past.

The researchers also asked interviewed hunters to estimate their community's brown bear harvest in 1987. Respondents' estimates varied somewhat, so the range of responses is presented (Table 4). In calculating the per capita harvest, a live weight of 279 pounds was used. This was the average spring weight for both sexes of brown bear in the southwest Brooks Range in GMU 23 (Ballard, Roney, Larsen, and Ayres 1988:39-42). In fall, bears usually weigh more.

Because Kotzebue's population is large and diverse, the community's estimated bear harvest was derived not only from key respondent estimates but also from 1987

Department sealing records and from a Division of Subsistence survey of Kotzebue's 1986 harvest levels. This survey data showed a harvest of nine brown bears by Kotzebue residents; the percentage of these used for food is not known. Sealing records from 1986 showed a Kotzebue harvest of four bears, though the percentage used for food is likewise not known. Key respondents' estimates ranged from 8-10 on the number of brown bears taken for food by Kotzebue residents in 1987.

A few examples of brown bear hunts by Kotzebue residents might be insightful in understanding the regional center's hunting pattern. In one instance, a non-Native man hunted with a Native Shungnak man in the upper Selawik River, where they found and killed a bear. The non-Native kept the hide, and the meat was taken to Shungnak and distributed to local households. In another, similar, case, a non-Native Kotzebue resident hunted with a Native man in the Noatak drainage. The hunt was successful. The non-Native kept the hide, and distributed the meat to Kotzebue households. Another non-Native hunter brought back the four quarters from his kill, keeping one for himself and giving the rest to other households and to the senior citizens' center. In a fourth example, a young Native hunter killed a bear, and brought home only the hide. His friends and family questioned him about the meat until he went back to the kill site to retrieve it. In 1989, a non-Native National Guard member killed a bear in an airplane-accessible area on the North Slope coast. Interested only in the hide, this hunter retrieved some of the meat to give to a friend for dogfood. And finally, a resident of a Kotzebue Sound camp said spring brown bears are killed by camp residents who desire fresh meat. The researchers do not know what percentage of bear kills any of these examples represent.

Measured by per capita harvest, White Mountain (GMU 22) and Shungnak (GMU 23) ranked as the largest harvesters of brown bear among the study communities (Table 4). Following these were Buckland, Noatak, Selawik, and Noorvik. With its large population and relatively small harvest, Kotzebue had one of the lowest per capita bear

TABLE 5. ESTIMATES OF 1987 BROWN BEAR HARVESTS FOR FOOD IN GMU 23 COMMUNITIES

COMMUNITY	1985 POPULATION	ESTIMATED 1987 COMMUNITY HARVEST FOR FOOD
Ambler	255	5-7
Buckland	248	3-5
Deering	153	0
Kiana	392	2-3
Kivalina	285	0
Kobuk	65	1-2
Kotzebue	2,633	8-10
Noatak	330	2-5
Noorvik	529	4
Point Hope	597	0
Selawik	589	5-6
Shungnak	226	5-6
TOTAL	6,302	35-48

harvests. Kivalina, Shaktoolik, and Unalakleet respondents knew of no brown bear harvests for food in their communities in 1987. Bear harvests undoubtedly vary from year to year due to weather, traveling conditions, and the availability of bears. The researchers do not know how the 1987 harvest compares with other years, but nothing indicated it was unusual.

To estimate the total subsistence brown bear harvest in GMU 23, per capita harvest estimates of study communities were applied to similar communities not studied. Thus, Shungnak estimates were applied to Ambler and Kobuk, and Noorvik estimates were applied to Kiana. (In later field research for a different project, the researchers asked Deering and Point Hope hunters how many bears were taken for food in their communities in 1987.) Table 5 shows these extrapolated harvest estimates. The results point to a 1987 subsistence harvest of 35-48 brown bears in GMU 23. Similar extrapolations were not done for GMU 22 because few communities in that unit used brown bear for food, and information for some communities was not available.

In addition to the food harvest, GMU 23 residents killed some brown bears perceived as a nuisance or threat. One Kivalina respondent said three such bears were shot by his community in 1987. A Point Hope resident said one nuisance bear was shot in 1987 near Point Hope. Reindeer herders in Buckland and Deering also shoot nuisance bears. The number of bears similarly killed during the study year in GMU 23 is not known. However, based on the field interviews, the researchers suspect it was considerably less than the subsistence harvest, and most likely in the range of 8-10.

Some GMU 23 residents harvested brown bears for the hide or the trophy only. Trophy hunting was most common among non-Natives in the region, whose hunting tradition values trophy animals. Although the researchers do not know how many bears were taken by local trophy hunters, this harvest was probably not large. Department staff believes trophy hunters usually comply with the bag limit of one every four years and usually seal their bears. In 1987, only eight bears were sealed by GMU 23 residents, and not all of these were necessarily attributable to trophy hunters.

Another source of data on brown bear harvests is the Department's sealing records. These usually underrepresent the harvest, however, because much subsistence bear hunting is carried out under traditional hunting practices, often in violation of state regulations. Village hunters consequently do not always seal their bears. Table 6 compares sealing records with the estimated 1987 brown bear harvest in GMU 23 study communities. Table 7 compares the 1978-1987 bear harvest of interviewed hunters with the number of bears sealed by those hunters during the same period. The number of bears sealed each year from 1978-1987 by residents of each GMU 23 community is shown in Table 8.

These tables illustrate the low rate at which GMU 23 residents report their bear harvests. In 1987, 14-19 percent of the estimated bear harvest in GMU 23 study communities was reported to the Department (Table 6). According to Table 7, only three percent of bears killed in the past decade by interviewed hunters were reported.

TABLE 6. COMPARISON OF ESTIMATED BROWN BEAR HARVESTS WITH ADF&G SEALING RECORDS, 1987, FOR GMU 23 STUDY COMMUNITIES

Community	Estimated 1987 Community Harvest For Food	Number Sealed 1987
Buckland	3-5	0
Kivalina	0	0
Kotzebue	8-10	4
Noatak	2-5	1
Noorvik	4	0
Selawik	5-6	0
Shungnak	5-6	0
Total	27-36	5

Table 8 shows that no one in Shungnak or Selawik has sealed a bear in the past ten years, even though these communities have been among the highest harvesters of brown bear in the region.

The proportion of bears taken by residents and non-residents in GMU 23 shifts significantly when the estimated harvest is used instead of sealing records. Sealing records show that 34 brown bears were taken in GMU 23 in 1987, of which eight (24 percent) were taken by GMU 23 residents, nine (26 percent) by other Alaska residents, and 17 (50 percent) by non-residents. If GMU 23 residents actually harvested 35-48 bears, or an average of 42, the total harvest for the unit increases to approximately 68 bears. (This assumes non-local Alaska residents and non-residents report their bear harvests, which Department staff believes is the case.) Of an estimated harvest of 68 bears, GMU 23 residents took 42 (62 percent), other Alaska residents took nine (13 percent), and non-residents took 17 (25 percent). If DLP and trophy harvests by local residents were included, the percentage harvested by GMU 23 residents would be somewhat higher. Out-of-state hunters, therefore, might have taken one-fourth of the GMU 23 1987 brown bear harvest, proportionally less than the one-half indicated by sealing records. Table 9 summarizes these findings.

TABLE 7. COMPARISON OF ESTIMATED BROWN BEAR HARVESTS WITH ADF&G SEALING RECORDS, 1978-1987, FOR SELECTED HUNTERS IN GMU 23

	Number Harvested 1978-1987	Number Sealed 1978-1987
Buckland		
Hunter 1	2	1
Hunter 2	2-3	0
Hunter 3	3	1
Hunter 4	1	1
Hunter 5	3	0
Kivalina		
Hunter 1	0	0
Hunter 2	0	0
Hunter 3	0	0
Hunter 4	3-4	0
Kotzebue		
Hunter 1	1	0
Hunter 2	1	0
Hunter 3	2	0
Hunter 4	2	0
Noatak		
Hunter 1	0	0
Hunter 2	5-6	0
Hunter 3	3	0
Hunter 4	16	0
Hunter 5	2	0
Noorvik		
Hunter 1	10	0
Hunter 2	*	0
Hunter 3	0	0
Hunter 4	3	0
Hunter 5	1	0
Selawik		
Hunter 1	0	0
Hunter 2	20	0
Hunter 3	3	0
Hunter 4	2	0
Shungnak		
Hunter 1	1	0
Hunter 2	1	0
Hunter 3	3	0
Hunter 4	1	0
Hunter 5	4-5	0
Totals	95-99	3

* Not available

TABLE 8. NUMBER OF BROWN BEARS SEALED IN GAME MANAGEMENT UNIT 23, 1978-1987, BY COMMUNITY

COMMUNITY	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	TOTALS
Ambler	0	0	0	1	2	1	2	1	0	0	7
Buckland	0	0	0	0	0	2	1	0	0	0	3
Deering	0	0	0	0	0	0	0	0	0	0	0
Kiana	1	1	0	0	3	0	0	1	1	1	8
Kivalina	0	0	0	0	1	1	0	0	1	0	3
Kobuk	0	0	0	0	0	0	0	0	0	0	0
Kotzebue	1	5	3	0	3	10	7	10	4	4	47
Noatak	0	0	0	0	1	0	0	2	1	1	5
Noorvik	0	0	0	0	0	0	2	0	0	0	2
Point Hope	0	0	0	0	1	0	0	0	0	2	3
Selawik	0	0	0	0	0	0	0	0	0	0	0
Shungnak	0	0	0	0	0	0	0	0	0	0	0
TOTALS	2	6	3	1	11	14	12	14	7	8	78

SOURCE: Sealing Records, Division of Wildlife Conservation, Alaska Department of Fish and Game

TABLE 9. PERCENT OF BROWN BEAR HARVEST BY RESIDENCY OF HUNTER: ADF&G SEALING RECORDS VS. ESTIMATED HARVESTS, 1987

	Sealing Records		Key Respondent Estimates	
	Number of Brown Bears Harvested	Percent of Total Harvest	Number of Brown Bears Harvested	Percent of Total Harvest
GMU 23 Resident	8	24	42	62
Other Alaska Resident	9	26	9	13
Non-Resident	17	50	17	25
Total	34	100	68	100

In summary, GMU 23 residents harvested an estimated 35-48 brown bears for food and raw material in 1987. In addition, GMU 23 residents killed some nuisance bears and some trophy bears. The researchers did not attempt to quantify GMU 22's harvest because few communities in that unit used brown bear for food.

Only a small proportion of the estimated brown bear harvest in GMU 23 was reported to the Department. Based on the study's findings, 14-19 percent of the brown bears killed by GMU 23 residents in 1987 were sealed. Over a ten-year period, only three percent of the brown bears harvested by interviewed hunters were sealed. Although sealing records indicate that non-Alaskans took 50 percent of the GMU 23 brown bear harvest in 1987, estimates from this study show that non-Alaskans took 25 percent of the harvest with GMU 23 residents accounting for approximately 62 percent of the unit's brown bear harvest.

POPULATION STATUS

The Division of Wildlife Conservation has little definitive information on brown bear abundance in northwest Alaska. In a cooperative study, the National Park Service and the Alaska Department of Fish and Game found a density of one brown bear per 19.4 square miles in the upper Wulik and Kelly River areas of northwest Alaska in 1987

(Ballard et al. 1988:ii). This was considered high for an arctic ecosystem, though the area censused was believed to be among the best bear habitat in GMU 23 (Larsen 1988). Department biologists believe other parts of the unit probably support fewer bears. Informal observations by Department staff suggest a stable and healthy brown bear population in GMU 23. Tentative rough estimates indicate a GMU 23 brown bear population of 860-1,075 (Larsen 1988). Less information is available on the GMU 22 brown bear population, though the Department recently initiated a bear population study on the Seward Peninsula similar to the one on the upper Wulik and Kelly rivers.

Observations of interviewed hunters also point to a healthy brown bear population in northwest Alaska. In White Mountain, Shaktoolik, and Unalakleet, elders said brown bears were rarely seen in the past near the villages, but today are regularly sighted close to communities. In a Subsistence Division study of Shaktoolik, Thomas (1982:237) wrote: "One older woman recalled that when she was a child, the sighting of a bear was a rare event, whereas in a recent year a Shaktoolik resident counted 22 bears when floating down the Shaktoolik River in the fall."

In Shungnak, interviewed hunters reported an increasing number of bears near their community. Most interviewed hunters in Selawik agreed that bears have been increasing, although one saw "less this year." In Noorvik, interviewed hunters have also observed an increasing bear population in recent years. A Noatak elder said brown bears are now seen in camps along the Kotzebue Sound coast where they have rarely been seen before; the same was said in Noorvik about the Kobuk River delta. Another Noatak hunter thought the bear population has tripled or quadrupled since 1940. A Kotzebue hunter said the local brown bear population is "without doubt, historically high." The researchers have heard similar comments from hunters throughout northwest Alaska. Residents of GMU 23 frequently express a preference for fewer bears because they are concerned about the safety of children and women and about damage to cabins, camps, and food caches.

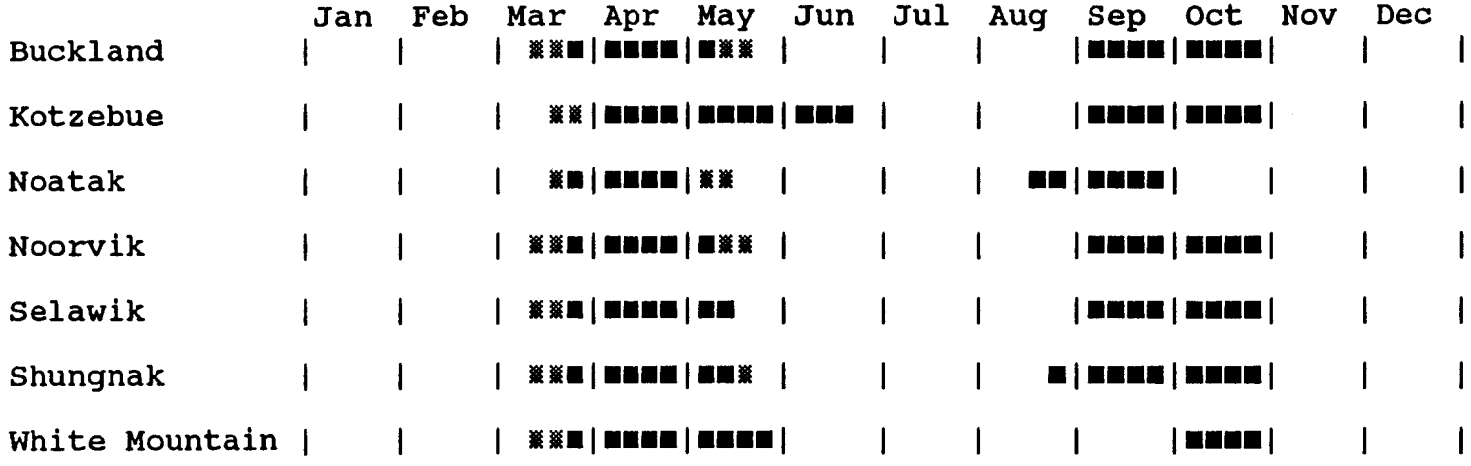
TRADITIONAL HUNTING SEASONS

Brown bear hunting in northwest Alaska occurs predominantly in spring and fall, with minor variations among study communities and among individual hunters. For instance, spring bear hunting begins earlier in inland areas than on the coast, where winter conditions persist later into the year. Some Buckland hunters do not hunt bears in fall because the animals feed on sea mammal carcasses along the coast at this time. Other Buckland men, however, hunt fall bears but only in upriver areas. Figure 2 summarizes the harvest months for brown bear in the study communities.

For most northwest Alaska residents, the fat is the most prized brown bear product. Local hunters, therefore, time their bear harvests to correspond with periods when bears are fat and their meat is of high quality. One Kiana elder, Jenny Jackson, said (NANA Region Elders' Conference 1983), "[Bears] are caught for the oil, especially for the people upriver -- even around here -- who do not have seals." Local subsistence hunters also consider the quality of the bear hide in timing their hunts, but usually the hide is in good condition at the same time a bear is fat.

Northwest Alaska hunters harvest brown bears as soon as the animals emerge from their dens in spring. Bears are still fat at this time, before gradually becoming lean. Most interviewed hunters said subsistence brown bear harvests occur from the time the bears emerge from their dens until snowmachine travel is no longer possible. One Kotzebue Sound camp resident said brown bears are sometimes shot in June by seal hunters camped along the coast who desire fresh meat. In a previous Division research project (Thomas 1980), a Golovin resident said, "The season should open by April 1 as the bears are best when they first come out. The big ones way inland even come out in March sometimes."

FIGURE 2. BROWN BEAR SEASONAL ROUND FOR STUDY COMMUNITIES IN GMUs 22 and 23.



■ Frequent Harvest
▒ Occasional Harvest

Local residents also harvest brown bears in fall that have been feeding on berries, roots, fish, or caribou. These give the meat a good flavor. Many hunters prefer to take bears in late fall just before hibernation because the animals are fat at this time.

Northwest Alaskans today rarely hunt brown bears in winter (November to early March) or summer (late June to mid-August). Hunters said summer bears are lean and their hides are in poor shape. In addition, local people said bears are often dangerous at this time of year because they are hungry, and so people avoid hunting them.

In the past, the northwest Iñupiaq hunted denning bears in winter. Hunters knew from experience that bears in dens did not fight. Before firearms were available, a sleepy bear in a den was probably easier to kill with a spear than an alert bear roaming in search of food in summer or fall. Denning bears were probably also a good source of winter meat in years when other game was not available. Although some elders have hunted denning bears in past years, this practice is rare in northwest Alaska today.

Current state hunting regulations provide for a spring and a fall subsistence brown bear season in northwest Alaska (Table 10). Although much local bear hunting probably occurs within these established seasons, some spring bear hunting in GMU 23

TABLE 10. 1988 SUBSISTENCE HUNTING SEASONS FOR BROWN BEAR IN GMUS 22 AND 23.

GMU	SEASON
22(A)	September 1-October 31 April 15-May 25
22(C)	September 1-October 31 May 10-May 25
22(B),(D),(E)	September 1-October 31 April 15-May 25
23	September 1-October 10 April 15-May 25

occurs before the opening date, especially in years when bears emerge early from their dens. In coastal areas, bear hunting extends into June. Some bear hunting in inland areas takes place in late August prior to the fall season.

HUNTING AREAS

In 1985 and 1986, the Division of Subsistence in cooperation with Maniilaq Association documented the hunting, fishing, trapping, and gathering areas of ten villages in GMU 23 (Schroeder, Andersen, and Hildreth 1987a). The project mapped areas that community members have used over their lifetimes to harvest a variety of resource categories, including bear. This information was compiled in an atlas (1:250,000 scale) available at the Department's Kotzebue office and at other local offices throughout northwest Alaska (Schroeder, Andersen, and Hildreth 1987b). Figures 3 and 4 summarize this information. Because harvest areas for brown bear and black bear were not mapped separately, the areas shown in the figures include both species. Figure 3 depicts the hunting areas for Buckland, Noatak, and the upper Kobuk River communities (Ambler, Shungnak, and Kobuk). Figure 4 depicts the hunting areas for Selawik and the lower Kobuk River communities (Noorvik and Kiana). Mapped information is not available for Kotzebue.

Anderson et al. (1977:345-346) described general hunting areas used by the upper Kobuk River communities. In spring, hunters travel widely in search of tracks when bears first emerge from their dens. In fall, hunters watch for bears along salmon spawning creeks and in areas of heavy berry concentrations. At this time, some hunters travel to the headwaters of the Kobuk River to hunt bears. Older hunters often had favored locations they visited each fall to hunt bears.

The present study found that hunters in the study communities travel varying distances to harvest brown bears. Some bears are killed near villages or camps, while

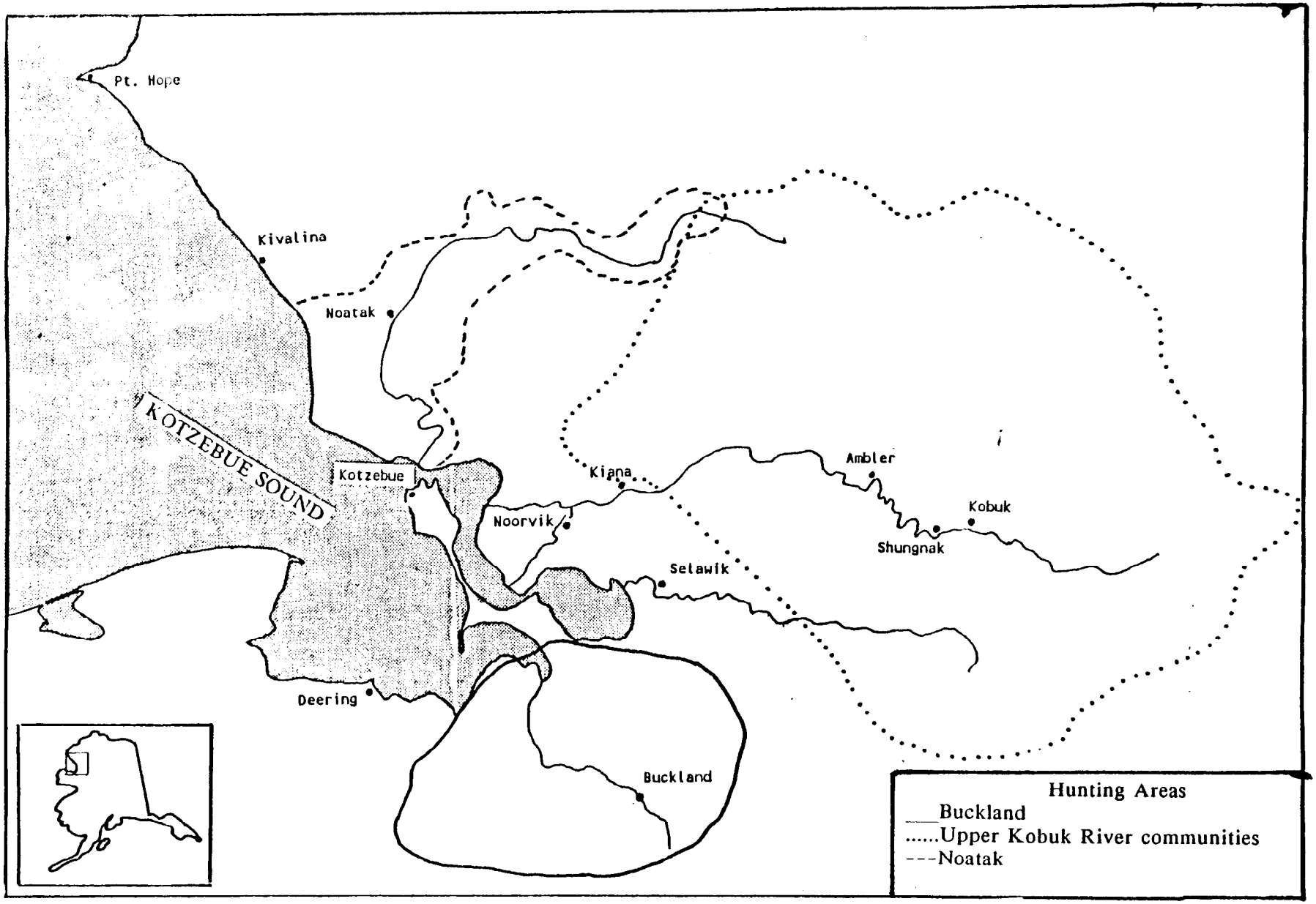


Figure 3. Bear Hunting Areas For Buckland, Noatak, and Upper Kobuk Communities.

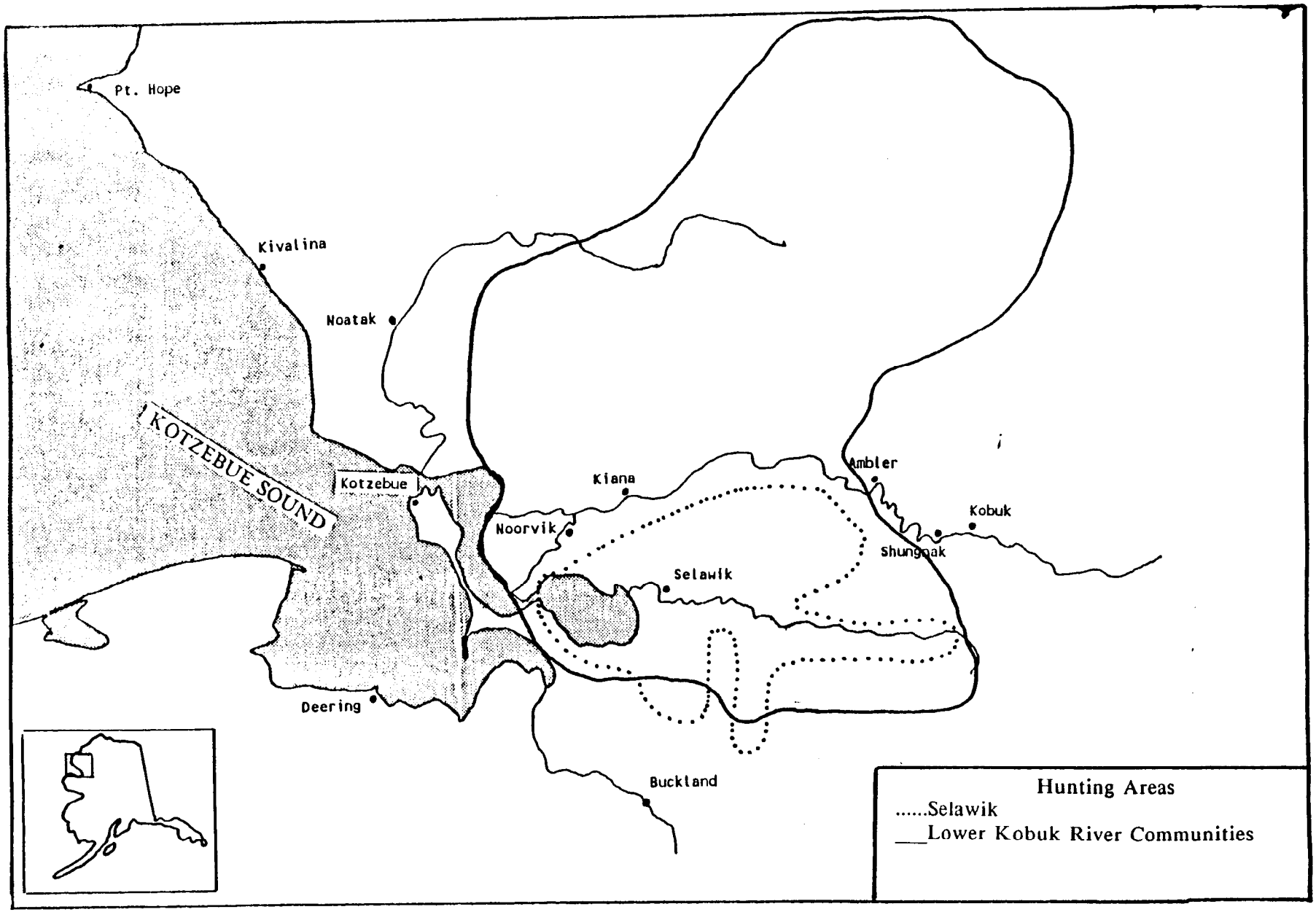


Figure 4. Bear Hunting Areas for Selawik and Lower Kobuk River Communities.

others are taken further away as hunters travel for other purposes. Residents of communities near the coast such as Buckland, Kivalina, and White Mountain usually only kill inland bears for subsistence purposes because these have not been feeding on sea mammal carcasses. Noatak men seldom hunt bears in the upper Noatak because the bears' diet of squirrels in this area gives the meat a poor flavor. Interviewed hunters in the study communities reported taking brown bears in the following areas.

BUCKLAND
- Sugar Mountain
- Buckland River
- Munz Mountain
- Bear Creek
- Mountains near Buckland
- Head of Selawik River

KIVALINA
- Kivalina River

NOATAK
- Two miles behind the village
- Noatak River
- Mountains near Noatak

NOORVIK
- Near Kiana
- Between Selawik and Noorvik
- Salmon River above Kiana

SELAWIK
- Mountains between Upper Kobuk and Selawik
- Selawik River
- Mountains at head of Selawik River
- Fish River
- Singiagruk
- Hills between Kiana and Selawik
- Tagragvik River
- Old camps near Selawik

SHUNGNAK
- Rabbit Mountain
- Kobuk River
- Mauneluk River
- Bornite
- Around Shungnak
- Mountains near Kobuk River

WHITE MOUNTAIN
Fish River north of White Mountain
Niukluk River between Council and White Mountain
Between White Mountain and Solomon

HUNTING METHODS

Brown bear hunting methods vary among individuals and communities and with the season and traveling conditions. Many interviewed hunters said they usually take bears opportunistically, and seldom hunt specifically for them. Other hunters, however, use strategies designed specifically to catch brown bears, especially in fall. Men are usually, if not always, the sole participants in bear hunting.

Before the introduction of firearms, the northwest Alaska Iñupiaq hunted bears with spears and arrows. Several written accounts of this hunting method exist, including Anderson et al. (1977:343-344) and Thomas (1982:236-237). A Shungnak elder, Wilson Tickett, Sr., described this hunting method in a story about *Siqiññaaluuraq*, a respected Shungnak hunter of the past (NANA Region Elders' Conference 1983):

> When he goes hunting for bears, he shoots the bear with his arrow. He doesn't hide around like some do. He just watches the bear moving....The bear sees the man and moves around. The man has a long pole about six or eight feet. When the bear starts running towards him and gets close, he throws the sharpened pole at the bear. He aims at the throat where the soft spot is. When the pole hits the spot, he puts his pole in the ground. And keeps it that way until the bear dies.

Interviewed hunters from Shungnak and Selawik said that in earlier times hunters staked dens found in late fall. In winter, a hunting group traveled to the staked den by dogteam, pulled out the bear, and killed it with a spear or gun. Anderson et al. (1977:345) related a story by Charlie Lee, a now deceased Shungnak elder, of a similar winter hunt in the upper Noatak valley. After discovering the den of a hibernating bear, Charlie poked a rod through the snow into the den until it rested on something soft and moved up and down slightly. A rifle was fired alongside the rod into the den, killing the bear. As Charlie climbed into the den, the other hunters with him stood

ready with rifles. He tied a rope around the dead bear and had the men pull it out, then killed three full-grown cubs also in the den.

Only one interviewed man (from Noatak) reported hunting denning bears during the decade covered by this study (1978-1987). Some interviewed hunters said they have not taught their sons to take denning bears because hunting with a rifle in spring and fall is more effective. Before firearms were available, it was probably easier to kill denning bears than to kill them with a spear in other seasons.

Several methods are commonly used today for hunting brown bears. According to one retired Shungnak hunter, when bear tracks are found near a den in spring, hunters urge the bear from its den by spitting on a willow and tossing it near the den's entrance. Sometimes the hunter throws his gloves at the entrance instead. The bear smells the human scent and exits, looking for the intruder. It stands up and looks sideways. In the meantime, the hunter hides behind the den and quickly shoots the bear.

In Noatak, men routinely hunt brown bears at night in the fall. Hunters select places along rivers or sloughs where bears regularly come to feed on salmon or other fish. They wait in darkness, sitting very close to where a bear might appear. When a bear is heard nearby, hunters flash a light to see where to aim and immediately shoot the bear. This technique can be quite dangerous and unnerving, and requires other hunters for backup in case the bear charges. One elderly Noatak man said he quit hunting this way after one particularly frightening incident. Two Noatak hunters--one in his 30s and one in his 50s--told the researchers they hunt bears this way every fall.

Upper Kobuk River men also hunted bears at night along spawning creeks. Lawrence Gray, an elder from Shungnak, told the following story (NANA Region Elders' Conference 1983):

> The men also go to the spawning creeks to hunt for the bear. The old men told us they would teach us how to hunt. In fall at dusk they brought us over there [to a spawning creek]. The creek...was narrow,

> maybe about twelve feet wide. At some parts it was wider, but it was very shallow. They told Homer and I to camp there. The men told us to sit right in the middle of these paths, they told us that we are going to spend the night here....There were many spruce trees there. The men...left us....Pretty soon it got really dark so we could not see very far except the creek directly below us....Just at midnight or near that time we heard the bear coming out...
>
> When the men are sitting out in the night to wait for the bear, they would be armed with a gun. In front of the barrel, they would tie a piece of white cloth or something so you can see where you are aiming. They let me tie a piece of white cloth to the front. This will let you see where you aim even though it is dark outside.
>
> The bear came really close to me but I couldn't see it. I could only see a dark thing in front. I shot at it and it went toward us and I shot again. I listened to the bear, as the old man had instructed me earlier. The bear moved around and then it died. This is how they hunted the bear in the spawning creeks.

In addition to these specialized techniques, men use more general hunting methods to catch brown bears such as tracking them in snow, stalking their dens, or shooting them when sighted near camps or during travels for other purposes. Spring brown bear hunting takes place with snowmachines, while in fall boats are used.

In Buckland, Noatak, Kotzebue, Selawik, and Shungnak, several interviewed hunters said they prefer to hunt small bears because the meat is tender. A Shungnak hunter said residents of his village do not care for the meat of big, old bears, though the fat is sometimes still good. One man in Buckland preferred large bears.

In summary, northwest Alaska residents use several strategies to hunt brown bears for subsistence purposes. The most common method is to shoot bears opportunistically as hunters travel in spring and fall. Sometimes hunters track bears on snow during these seasons. At other times, hunters seek bears in places where they are known to feed, such as spawning creeks and thick berry patches. Denning bears were hunted in the past, but this is uncommon today. However, hunters sometimes urge spring bears from their dens, or sneak up to bears sleeping outside their dens. Local hunters generally prefer small bears for subsistence use.

TRADITIONAL IÑUPIAQ HUNTING LAWS

When hunting brown bear, Iñupiaq hunters follow certain prescribed practices to show the bear respect. Interviewed hunters from Shungnak, Selawik, and Noorvik said hunting success usually depends on following these traditional laws.

Iñupiaq hunters believe bears have good hearing even during hibernation, and hunters therefore should not talk about their intentions to hunt these animals. A hunter should not brag about how many bears he has caught, nor should he talk about the bear in a threatening manner. To avoid harm to himself or his family, a hunter should not "act big." Interviewed hunters and elders in this study repeatedly emphasized these rules of behavior.

During a 1983 NANA Region Elders' Conference, Grace Outwater from Kiana said, "They say the bears can hear. They say every animal can hear. When a bear is sleeping in the winter, it hears better. They always told us not to talk badly about the animals. [The animals] sense these things."

Lawrence Gray, a Shungnak elder, said, "Men are not supposed to talk wisely like, 'I can get one.' They shouldn't talk like that. A person will not even say, 'I want to eat bear meat.' The man has to only go out and hunt." Gray told a story of what happens when a hunter does not follow these traditional Iñupiaq laws (NANA Region Elders' Conference 1983):

> These animals are not to be made fun of....My in-law told me about the time when a bear attacked him. In fall time when they saw a grizzly bear they were in kayaks. My son-in-law said that he has room for a bear in the kayak. After he said that, he and the other men docked their kayaks. They started to to go toward the bear....They went to it and tried to kill it but just wounded it and the bear ran into the brush and the men followed it. They all went in separate directions....Not too long after they were in the brush the bear stood up suddenly in front of the guy who said that he has room in his kayak. The bear met him and played around with him instead of killing him instantly. The bear wanted him to know that he can hear what the man said. The bear cut up his stomach with his paw but the man was still alive. The only way the man escaped the mauling was that he begged the bear to let him go.

> Right there the bear proved to the men that he can hear what they say. The bear is never to be challenged because they can hear....The bear can sense smart remarks from hunters....The hunter should not say that it is no sweat to kill a bear....You have to be careful about what you say but, still, you can go out and hunt. Just remember not to make fun of the animals.

Northwest Alaska elders offer additional instructions for bear hunting. Minnie Morris of Noorvik said (NANA Region Elders' Conference 1983), "My father told us that after you have shot a bear, when it goes down you should not go directly to it but throw something at it to see if it will get up. Going directly to it is very dangerous." According to Anderson et al. (1977:347), Kobuk River hunters touch a bear's eye with a gun barrel to make sure it is dead. Bears sometimes fool hunters and pretend to be dead until the men get close. Although its hearing is keen, a bear's eyesight is poor, and hunters can sneak up to one if the wind is not blowing in the bear's direction. Interviewed hunters also reported that bears do not fight in their dens.

When an Iñupiaq hunter kills a brown bear, the first thing he does during butchering is remove the hyoid bone (*qupilgua*) beneath the bear's tongue. This remains a widespread practice among northwest Alaska's subsistence hunters. In Shungnak, Selawik, and Noorvik, the *qupilgua* is placed between willow branches. Noatak hunters remove the bone and discard it. Interviewed hunters in Buckland said they place the bone on a tussock. In Kotzebue recently, a non-Native bear hunter told Department staff that he buried the hyoid bone at the request of a local resident who had agreed to take the bear meat under this condition. These actions ensure that the spirit of the bear has gone elsewhere, and retaliation to the hunter is avoided.

During butchering, the hunter handles the bear meat carefully. The head was traditionally given to the eldest member of the community, or hung on a tree or pole. One hunter said he has frequently seen bear skulls hanging in camps, though this practice is not as common as it once was. However, subsistence hunters usually still leave bear skulls in the field as they have in the past. When bear meat is served at home, family members should not make comments about the meal.

Interviewed hunters in Shaktoolik, Unalakleet, or Nome had little to say about traditional practices pertaining to brown bears. One White Mountain hunter said he leaves the head of the bear on the tundra facing west.

In summary, Iñupiaq hunters in northwest Alaska believe bears have good hearing regardless of the distance, and hunters must therefore speak carefully about these animals. Knowledgeable hunters advise that the bear's hyoid bone be removed during butchering, and disposed of properly. The head is traditionally left in the field or in camps. Normally, when hunters follow these practices, they believe they will not have bad luck, their camps will not be bothered, and they will not feel threatened by bears in the future.

SHARING

Sharing has always been an integral part of hunting by northwest Alaskans, valued by the Iñupiaq for survival reasons and out of respect for other community members. All interviewed hunters in this study shared their brown bear harvests, in the same way that all wild food is shared among the region's residents.

When a bear is killed, the carcass is usually divided among the hunting group. A hunter commonly keeps only a small amount of the bear meat and fat for his family's personal use. The rest is given to elders, widows, sick people, and neighbors in the community.

Brown bear is shared in many ways. A Shungnak man said if a hunter camped along the river kills a bear, it is customary to give other campers along the river a piece of meat and fat. A Kotzebue hunter similarly said that when a bear is killed along the Noatak River, a piece of bear meat with fat is given to any boat that stops by. Another Kotzebue hunter, who does not care for bear meat, kills bears as opportunity allows to

give to sick people and to others who like the meat. In spring camps at *Sisualik*, hunters announce bear kills over the CB radio, inviting everyone to come get fresh meat.

Brown bear meat and fat are also shared among villages and with other regions of the state. For example, an elderly Noorvik man received brown bear fat from a Shungnak woman. A Selawik woman brought bear fat to her sister in Anchorage who longed for Eskimo food.

Brown bear hides are not divided among the hunting group in the same way as the meat. Instead, hunters usually give the entire hide to the eldest hunter in the group or to the person who shot the bear, or else decide among themselves who should keep it.

PRESERVATION AND PREPARATION

In the past, the danger of starvation required the Iñupiaq people to preserve seasonally available wild food for future use. Brown bear was one of the meats preserved. Women interviewed in Shungnak and Noorvik said bear meat was dried in late fall. In Selawik and White Mountain, women said they half-dried the meat, then boiled it before eating. Hunters in Selawik and Unalakleet said people used to dig holes in the ground and store bear meat in permafrost near the kill site. Later, the hunters retrieved the meat with dogteams. An elderly Kotzebue man said hunters used to build a cache to store the carcass when a bear was taken in late fall. The cache prevented wolverines from taking the meat. After freeze-up, the hunters retrieved the carcass with dogteams. Long ago, taboos prevented women and female children from eating bear meat, but this is no longer practiced today. Bear meat was traditionally not fed to dogs because it made dogs vicious.

Today bear meat is usually brought back to the village as soon as the animal is killed. With refrigeration available, women can now freeze bear meat at any time of year, although drying, aging, and other forms of traditional preservation are still used.

Most interviewed women agreed that bear meat tastes better when aged in a cool place. Bear fat is also aged, then cooked before being eaten. If the fat is fresh, it must be boiled a long time to be safe to eat. Some examples from the study communities on the preparation of bear meat and fat are presented below.

A Shungnak woman cleans the intestines of the bear and hangs them to dry. She freezes meal-sized portions of the meat. She fries meat with large amounts of fat, then removes the meat and allows the fat to harden on the surface of the broth. The fat is then stored in jars or cans. Most of the meat and bones are boiled. The feet (*isigaanich*), when boiled, are particularly well-liked. The kidneys are also boiled.

A Selawik woman learned to prepare bear from her late aunt. She scrapes the bear's stomach and intestines of their contents and cleans them with water. The intestines are woven around a Y-shaped stick and baked on an open fire. A pan is set under the roasting intestines to collect the dripping oil. The stomach can be roasted in the same method. In fall, she often half-dries the bear meat. She boils bear feet and other parts, and stores Eskimo potatoes (*masru*) and bearberries (*tinnik*) in bear fat. Another Selawik woman substitutes processed bear fat for butter. Her grandchildren eat bear fat with bread or oatmeal.

A Noorvik woman freezes brown bear meat, preferably after it has aged outside in a cool place. She fries bear meat with large amounts of fat, then stores bearberries in the bear fat for future use.

A Buckland woman said her children like bear meat when harvested in the right season. She cooks it as soup or in a meat-and-gravy style. She fries the fat, storing this oil in cans.

In White Mountain, an elderly woman stored bear fat in jars with Eskimo potatoes. She used to half-dry the meat, though no longer cares much for bear meat since her husband's death. She occasionally roasts bear meat if she shares a meal with someone. A retired bear hunter in White Mountain enjoys eating bear fat for lunch.

In Shungnak, Noatak, and White Mountain, some interviewed residents said they boil -- rather than fry -- bear fat to process it. A Noatak woman said all parts of the bear are edible by boiling including the paws. Nearly all those interviewed said dried fish and meat are eaten with bear fat similar to the way seal oil is used.

Elders advise hunters not to eat bear liver. During a 1983 NANA Region Elders' Conference, Robert Mulluk, Sr., said, "When a person has killed a bear and is very hungry for this, he should not eat the liver. *Masraun* told me this a long time back. One time when he was hunting he caught a bear and he gutted it and took the liver and baked or cooked it somehow and ate it. After he ate this, he barely escaped death..."

In Noatak, hunters have recently become concerned about the safety of eating bear meat. They worry that the drugs used to immobilize bears during research by the Department and the National Park Service remain in the meat, making it risky to eat. Despite assurances from state and federal agencies, Noatak hunters' fear persists. Some have stopped eating bear meat. They report having found bears dead from unknown causes which they attribute to the drugs.

MEDICINAL USES

In addition to providing food, brown bears have been a source of medicine to the northwest Iñupiaq for centuries. In the study communities of Shungnak, Selawik, Buckland, Noatak, Noorvik, White Mountain, and Kotzebue, bear fat remains a highly valued remedy, particularly among elders, for curing illnesses and sores. Some interviewed hunters said they search for bears when an old person is sick and no bear fat is available.

Interviewed Shungnak residents said bear fat cures bad colds, itchy throats, and coughs when small amounts are taken internally or when applied to the chest. Cooked bear meat with fat stimulates the appetite of ill people who cannot eat or drink. In

Selawik, where several elderly people recently died of pneumonia, one woman recovered from the flu by taking small amounts of unprocessed bear fat. She melted the fat slowly in her mouth. She also used bear fat as an appetite stimulant.

A Noorvik man hunted brown bear one spring for medicinal reasons. He said he uses the hide of the bear as a quick, relaxing remedy when he feels weak. He simply lies on the hide for a few minutes and recovers his strength. He said dying elders are forbidden to use bear hides because they will live longer and suffer more. He advised that sick people should never be given large pieces of bear fat because they may become more ill. They should be given only a small amount. It is customary to apply a small amount of bear oil to the lips of a dying person upon request. A tribal doctor in Noorvik highly recommends feeding sick people small amounts of prepared bear meat for an appetite stimulant.

A Buckland woman, also a tribal doctor, recommends bear fat as a cure for persistent sores. In this case, the fat is used as an ointment. This woman agreed that dying people can recover when bear fat is given to them. In addition, bear fat keeps a person warm. In White Mountain, one woman's late husband used brown bear bile for medicine. He dried the bile, then shaved a small piece to eat when suffering from stomach problems. An interviewed Kotzebue resident described a similar practice.

A Noatak woman remembered a story from the upper Kobuk River communities where a hunter boasted about the number of bears he had caught. One day a brown bear mauled the man, tearing off most of his scalp. Hunters killed and skinned the bear, putting the raw hide on the man's wounds. The next morning the injured man felt better.

According to Arthur Douglas, an Ambler elder, bear fat was used to cure boils (Mauneluk Association 1976:29). When a boil was soft and ready to burst, a cross was cut on it. A specially prepared flat stick was used to pull out the pus, then twisted until

the core of the boil was taken out. Bear fat was spread thinly over the affected area until the remaining pus had drained out.

CRAFTS AND OTHER USES

Since early times, northwest Alaskans have utilized non-edible bear parts as basic necessities for hunting, traveling, and camping. In contemporary times, bear hides and other parts continue to be used by the Iñupiaq as described below.

Elders in Shungnak and Selawik said the narrow bone of the bear's foreleg was used in the past for spearheads and snares. In White Mountain and Noatak, elders said the knee joints of brown bears were made into scraping tools. Bear teeth and nails were carved into fishhooks for grayling. An upper Kobuk River elder said (NANA Region Elders' Conference 1979), "Long ago, I have seen people harvesting many fish with fishhooks made of beaver and porcupine teeth. The fishhooks made of teeth were used when ivory was not available. Larger fishhooks were made of black bear or grizzly bear teeth."

In the past, brown bear hides were made into ropes and snowshoe bindings. Elders said rope made of bear hide was tougher and lasted longer than rope of caribou or bearded seal skin. Early people preferred bear hides for dog harnesses because the dogs did not chew them. Clothing such as skin boots and ruffs were also made from bear hides. Interviewed individuals said bear hides provided warm bedding, and did not shed hair like caribou skins. Hunters and travelers commonly carried bear hides to use for mattresses and as doors in sod houses.

Bear hides continue to be used today for bedding and rugs both at home and at camp. Hunters often carry bear hides in their sleds as survival gear when traveling in winter. If hunters are unable to return to the village that day, they spend a warm night in their sleds on the hides.

In Shungnak, Noorvik, and Selawik, interviewed residents said brown bear hides are used for parka ruffs and for crafts such as Eskimo masks. One Noorvik woman said the hide is cut into strips and sewn into the sides of a mukluk (*natiguaq*). In Noatak, the hide is also used in mukluks. Bear claws are used for necklaces.

In White Mountain, bear teeth were still being used for fishhooks. During one interview, an elderly woman, who was preparing to go fishing, had a hook made of bear teeth specially designed to catch pike through the ice.

In summary, northwest Alaskans have traditionally found many uses for bear hides and other non-edible parts. In the past, bear hides, bones, teeth, and claws were used for spearheads, fishhooks, rope, snowshoe bindings, dog harnesses, scraping tools, doors, mattresses, ruffs, and mukluks. Today bear hides are used primarily for mattresses, rugs, ruffs, mukluks, and Eskimo masks. Bear claws are used for necklaces. In White Mountain, fishhooks made of bear teeth were still in use.

TRADITIONAL IÑUPIAQ KNOWLEDGE AND BELIEFS

Through generations of hunting and traveling, the northwest Alaska Iñupiaq have acquired extensive knowledge of brown bear habits and behavior. These animals are the most feared and respected, and have a prominent physical and symbolic role in northwest Iñupiaq life. Many important Iñupiaq beliefs about brown bears have evolved, some of which were discussed in the section on traditional hunting laws. Interviewed elders were asked to describe other Iñupiaq beliefs about brown bear. Selected responses are presented below.

A Selawik woman knew a legend about a brown bear that adopted a child, who then became a bear the Iñupiaq knew. Brown bears like to adopt children. The Selawik woman had always been instructed not to let children cry when on the tundra gathering berries or plants for fear a brown bear might adopt them.

An elderly Shungnak man said brown bears sometimes transform themselves into other animals or objects when shot at. Several years ago, when a Shungnak man shot a brown bear, the bear became a rock, and later the man died. When brown bears change into other animals or objects, it foretells death for the hunter or members of his family. A Buckland man said an empty bear den is also a sign of death for a hunter or his family members.

Residents of Selawik and the Kobuk River villages believe bears are left-handed. In a 1983 NANA Region Elders' Conference, Lawrence Gray from Shungnak said, "The bear is a left-handed animal. When a person is being attacked by a bear, he should always stay or go toward the bear's right hand side. The left hand is dangerous....Earlier someone mentioned a person being ripped. The bear only clawed with his left hand and cut the man up. He did not use his jaws. That is how he will fight. A person shall always defend himself toward the bear's right hand." Anderson et al. (1977:298) similarly report that older hunters in the upper Kobuk advise shooting attacking bears in the left shoulder or foreleg because bears are unable to fight without the use of their left arm.

The Iñupiaq believe that bears will not bother a person who is humble and who does not hurt or fool with a bear. However, they also know these animals can be dangerous. Selawik and Shungnak elders said bears understand when people speak to them. If a person is in a situation where a bear is very close, the person should tell the bear not to harm him and should humbly say he is not a good meal. To avoid harm, the person should stay very still until the bear is out of sight.

Alfred Wells, a Noorvik elder, also advises not to run from bears. He told this story at a 1983 NANA Region Elders' Conference:

> On his way home, he met a bear and he did not have any kind of weapon but he kept on walking towards it. When the bear stood up, *Aqsravatnaq* looked at it eye to eye. They stared at each other eye to eye for at least half an hour. *Aqsravatnaq* did not try to run away and the bear did not try to go either, then finally the bear started to go. After he went for

> quite a while he looked back and ran toward *Aqsravatnaq* as if to attack him. I guess the bear wanted the man to run away but *Aqsravatnaq* did not budge. He just stood there. The bear did this twice and since the man did not run away from the bear, the bear finally left him for good. This is one of the many advices of the old people and we should remember them because we may use them one day.

A Shungnak resident said bears are shy animals. If a woman is approached by a brown bear, she is advised to expose her breast, causing the bear to turn away.

Bears are often attracted to food caches or drying racks. A bear can easily destroy a carefully preserved season's catch, making people disappointed or angry. A Kiana elder, Jennie Jackson, said (NANA Region Elders' Conference 1983), "My grandfather, *Sapiqsuaq*, always told us not to be stingy and be hurt...when the bears eat what we dry or store away because someday when a hunter is out he may kill a bear and you can have that meat instead."

A Selawik man told a story about a hunter, *Yaayyii*, who shot a large brown bear:

> The bullet did not kill the bear. As the bear charged, *Yaayyii* said, "Don't take me! Take this!" *Yaayyii* threw his gun to the bear who bit it and walked away.
>
> *Yaayyii* wanted his gun and yelled, "Don't take it far away! Leave it there!"
>
> The bear dropped the gun in the creek. *Yaayyii* later retrieved it.
>
> *Yaayyii's* grave is along the Selawik River. Hunters try to maintain the grave marker, but brown bears always knock it down. Perhaps *Yaayyii* hunted too many brown bears.

The belief that fooling with or hurting bears leads to harm makes some local residents uncomfortable with the Division of Wildlife Conservation's ongoing bear research in northwest Alaska. In this research, bears are darted from helicopters, then weighed, sexed, measured, tattooed, and in some cases radio-collared. A Noatak resident felt that handling bears like this made them more dangerous. Another hunter believed that collared bears carry a retaliatory attitude (*uumitchaun*), and are a greater threat. The researchers have heard villagers express concern about the safety of biologists and their families after engaging in what villagers believe is disrespectful behavior.

Traditional Iñupiaq knowledge and beliefs about brown bears persist today. In conducting interviews for this study, the researchers found many village residents uncomfortable with the mere mention of *akłaq* (brown bear). After describing the study, the researchers subsequently referred to the brown bear as "that animal" to ease people's discomfort.

CHAPTER 3

DISCUSSION

This study found that northwest Alaska communities exhibited different harvest and use patterns for brown bear. In GMU 23, the use of brown bear for food and raw material was prevalent in all the inland study communities (Noatak, Noorvik, Shungnak, Selawik, and Buckland). Similar use patterns most likely occur in the other Kobuk River communities of Kiana, Ambler, and Kobuk.

In contrast, the GMU 23 coastal communities of Deering, Kivalina, and Point Hope only occasionally use brown bear for food. Bears in these areas feed on sea mammal carcasses along the shore, giving the meat an undesirable taste. Still, a few families in Deering eat bear meat, and hunters in Kivalina and Point Hope occasionally take brown bears for food if found feeding upriver on fish and berries. The regional center of Kotzebue displayed mixed brown bear harvest patterns as a result of the heterogeneous backgrounds of its residents.

In GMU 22, use of brown bear for food was less widespread than in GMU 23. Of the communities for which the researchers had information, only White Mountain and Golovin continue to use bear meat regularly today. Many communities, however, used brown bear for food in the past. Little evidence was found of contemporary brown bear use for food in Nome.

Most study communities using brown bear for food took from two to six bears in 1987. Harvest levels undoubtedly vary from year to year due to weather, traveling conditions, and the number of bears available. The researchers do not know how the 1987 harvest compares with other years, though nothing indicated it was other than an average harvest.

An estimated 35-48 brown bears were harvested for food in GMU 23 in 1987, many of which were not reported to the Department. In the GMU 23 study

communities, only 14-19 percent of the 1987 brown bear harvest was reported. No estimates were made of the subsistence brown bear harvest in GMU 22 because few communities used brown bear for food, and information for some communities was not available.

Northwest Alaska residents kill brown bears primarily in spring and fall, and rarely in summer or winter. Several strategies are used to hunt brown bears, including tracking them on snow, stalking them near their dens, and waiting in the dark near their feeding areas along spawning streams. However, brown bears are most frequently taken opportunistically when a hunter comes across one or sights one near camp. Because brown bears are believed to have good hearing, Iñupiaq hunters do not openly discuss their bear hunts.

Brown bear meat is preserved in a variety of ways, including dried, half-dried, frozen, and aged. Bear fat is particularly prized as both a food and a medicine. Bear hides are used for bedding and for clothing such as ruffs and skin boots.

With centuries of hunting experience, northwest Alaskans have an intimate knowledge of brown bear behavior, and an extensive array of traditional laws and lore regarding human and bear interactions. These laws cover hunting strategies, butchering processes, personal conduct, methods of defense, and appropriate attitudes. The lore offers examples of severe consequences to the hunter and his family if these laws are not heeded.

Most northwest Alaska hunters think the region's brown bear population is high. The Department reports the GMU 23 brown bear population to be stable and healthy (Larsen 1988). A recent study in a portion of GMU 23 found a brown bear density considered high for an arctic ecosystem, but this area was among the best bear habitat in the unit (Larsen 1988). Local residents frequently express concern about the growing number of bears in the region and the hazard they pose to children, cabins, camps, and food caches.

Brown bear hunting regulations in northwest Alaska are established by the state. In 1988, they allowed hunters in GMUs 22 and 23 to harvest one brown bear every four regulatory years. Residents must purchase a $25 tag before killing a brown bear. Hunters must salvage the skull and the hide of the bear and have them sealed by a department representative within 30 days. Unlike most other big game species, which have strict requirements on meat salvage, discarded brown bear meat is not considered waste in the current regulations.

Upon request, Department biologists in Kotzebue fly to communities to seal bears as a service to village residents. By sealing hides and skulls, biologists obtain standard data on the size, age, and sex of bears. Although harvest numbers are essential, biologists debate the necessity of obtaining some of the other information sealing provides.

Legal seasons in northwest Alaska range from six to nine weeks in fall (September-October) and from two to six weeks in spring (April-May) depending on the unit. Except for unit 22(A), non-residents can hunt brown bear by drawing permit only. Appendix B has the relevent excerpts from state regulations.

Perhaps more than for any other species, current brown bear regulations are incongruous with customary and traditional hunting practices in contemporary northwest Alaska communities. Consequently, many village residents hunt "discreetly," as one Noatak man described. A Buckland hunter said people no longer talk about their brown bear harvests out of fear of arrest or citation. The incongruity between regulations and practices is evident in bag limits, seasons, salvage and sealing requirements, and tag fees. A discussion of these regulations and how they conflict with local practices is presented below.

1. *Bag limits.* Some northwest Alaska hunters typically harvest brown bears every year during the course of their spring and fall subsistence pursuits. Others kill bears less frequently or not at all. In most villages, only a small number of men actually

harvests bears, and these men share their harvests throughout the community. In this type of system, an individual limit of one bear every four regulatory years does not match normal practice. This bag limit is perceived by village hunters as arbitrary and irrelevant, and is generally unobserved, particularly when bears are abundant.

2. *Seasons.* Spring and fall are the seasons preferred by northwest Alaskans for hunting brown bears. Hunters frequently take bears as soon as they emerge from their dens which, in inland areas, can be as early as March or as late as May. Hunters also begin hunting bears again in late August--the beginning of the arctic fall--through October. Brown bear hunting may shift several weeks in either direction from one year to the next because of the annual variations in the onset of the seasons. These traditional hunting times do not correspond with the current open seasons, which in GMU 23 run from April 15 to May 25 and from September 1 to October 10. A season running continuously from the fall through the spring would enable hunters to harvest bears as soon as they emerge in spring, and would more satisfactorily accommodate traditional hunting practices.

3. *Salvage and sealing requirements.* Some GMU 23 residents retrieve both the meat and the hide of their brown bear harvests, while others retrieve only one or the other. Some subsistence hunters traditionally leave the head in the field at the kill site or at camp as a sign of respect. Requiring hunters to salvage the skull conflicts with this practice. In addition, requiring the salvage of the hide and skull does not accommodate hunters who hunt for the meat and fat only. Requiring hunters to transport the hide and skull back to the village and notify the Department for sealing places an additional burden on subsistence hunters. From the subsistence hunter's perspective, *not* requiring the salvage of the bear meat is objectionable.

4. *Tag fees.* Many Iñupiaq residents in GMU 23 communities have strongly held beliefs about the proper manner in which to treat brown bears. Perhaps foremost among these is the prohibition on speaking openly about brown bears. Hunters should not "act

big," brag about their bear hunting abilities, or even speak of their intentions to hunt. Brown bears are believed to have keen hearing, and to retaliate against hunters who violate these rules. Requiring local hunters to purchase a tag before hunting brown bear, and thereby deliberately make their intentions known, is incompatible with traditional Iñupiaq hunting practices. The concept that a person must pay extra to hunt a particular species, even if that animal is being taken for food, is peculiar and unfamiliar to many Iñupiaq hunters.

The incongruity between current hunting regulations and traditional hunting practices in northwest Alaska is primarily due to differences in how brown bear is used. These differences are culturally based, that is, they are learned differences which derive from the social values of the hunter's community. The current state regulations, rooted in the Euro-American hunting tradition, presume that the primary use of a brown bear is for a trophy hide or mount. The Iñupiaq rules presume that the primary use of a brown bear is as a source of food and raw material.

The attitudes and assumptions built into the hunting regulations are inappropriate for most northwest Alaska hunters and contribute to non-compliance with legal seasons and bag limits. Hunters tend not to report their harvests when their traditional practices for taking wildlife are in substantial conflict with existing state regulations, as is the case with brown bear hunting in northwest Alaska today. This impedes the state's ability to obtain adequate harvest data and to understand current use patterns for effective brown bear management. Hunters would be more likely to report their bear harvests if regulations accommodated their hunting practices and the reporting procedure was simple. An abundant bear population in northwest Alaska today and an absence of acrimonious allocative conflicts make this a particularly auspicious time for evaluating the regulations under which local residents hunt brown bears.

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APPENDIX A

QUESTIONNAIRE FOR HUNTERS
GRIZZLY BEAR USE

_____
Interview No.

_____
Date

The existing regulation allows any hunter to harvest one brown bear every four years. The Alaska State Board of Game, who makes decisions regarding this regulation is considering changes. My job is to find out if brown bear is hunted in this community. If so, how do the residents use brown bear? All the interviewees names will not be used. Codes are used. If there are certain questions you wish not to answer, I will respect that. These questions are for the past ten years.

1. Do you hunt for brown bear?

2. How often do you hunt them? (Every year, twice a year, three times in the past ten years, etc.)

3. What areas or place have you used to hunt for brown bear in the last ten years?

4. Do you specifically hunt for brown bear? Or, do you take it when you see it?

5. By what means do you take brown bear? Do people hunt denning bears? If not, why not?

6. What months do you normally hunt for brown bear?

7. Can you remember how many brown bears you have taken in the last ten years? Were any of those taken to protect your property or life? If so, how many?

8. How is brown bear shared when taken?

9. Can you guess how many brown bears the village took in the past year? Is that more or less than usual?

10. What parts of the bear do you normally use? What do you use them for?

11. What are the traditional laws which the hunters must follow when hunting or butchering the bear?

12. It's said that a person shouldn't talk about his plans to hunt brown bear—is it true? Why?

13. It's said that if the qupilgua is not removed from the brown bear's jaw, something will happen to member of the immediate family, is it true? Why?

14. Has your use of brown bear changed over the past ten years? If so, how?

15. Are there any suggestions or concerns you have about the brown bear?

16. How is the brown bear population doing in this area: growing, declining, lean, healthy, or acting differently?

17. With whom else should I talk?

18. The present regulation allows a hunter to get one bear every four years. You must get a $25 brown bear tag before the hunting takes place. How do you feel about this regulation?

SEX_____ AGE_____ RESIDENCY_____

MARITIAL STATUS	NO. OF CHILDREN	AGE OF OLDEST CHILD
_____	_____	_____

Prepared by Loon and Georgette for Brown Bear Research.
Kotzebue Subsistence Division 1987

QUESTIONNAIRE FOR WOMEN
GRIZZLY BEAR USE

_____
Interview No.

_____
Date

I am writing a project on brown bear use in your community. I have interviewed hunters. More informatiton is needed from the women. It would help, if you can provide information how you and those before you have used the brown bear.

1. How is brown bear normally prepared?

2. Does brown bear meat and fat taste differently at different times of the year?

3. How is brown bear shared?

4. Is there a preference for males over females, or younger over older bears, for food or fur?

5. What parts of the brown bear are edible?

6. What parts of the brown bear are used for medicine?

7. What parts of the brown bear are used for tools?

8. What is the fur mainly used for?

9. What parts of the bear are used for decorations (belt) by women?

10. What are some of the restrictions that Inupiaq people follow regarding the brown bear?

11. Can you think of any spiritual significances regarding the brown bear?

12. What age group (elders, young people) mostly eat bear?

13. With whom else should I talk?

SEX_____ AGE_____ RESIDENCY_____

MARITAL STATUS NO. OF CHILDREN AGE OF OLDEST CHILD

_____ _____ _____

Prepared by Loon and Georgette for Brown Bear Research.
Kotzebue Subsistence Division 1987

APPENDIX B

1988 BROWN BEAR HUNTING REGULATIONS: GMUS 22 AND 23

RESIDENT BIG GAME TAGS AND FEES
(Tags are valid only from January 1 through December 31)

Bear, brown or grizzly ..... each 25.00
(Not required in Unit 20(E))

No license is required of an Alaskan resident under 16 years of age, for hunting or trapping. Licenses and big game tags are required of all nonresidents, regardless of age, for hunting and trapping. However, all residents, regardless of age, intending to hunt brown/grizzly bear, are required to possess a resident brown/grizzly bear tag. Brown/grizzly bear tags expire on December 31 of the year for which they are issued.

(c) No resident may take a brown or grizzly bear (except as provided in 5 AAC 92.014), or a musk ox, without possessing a numbered, nontransferable, appropriate tag, issued to that person. The tag must be affixed to the animal immediately and must remain affixed until the animal is prepared for storage, consumed or exported.

5 AAC 92.165. SEALING OF BEAR SKINS AND SKULLS. (a) No person may possess, transport, or export from Alaska, the untanned skin or skull of a bear unless the skin and skull have been sealed by an authorized representative of the department within 30 days after the taking, or a shorter time if requested by the department. The seal must remain on the skin until the tanning process has begun. A brown bear taken in Unit 8 or 12 may not be transported from the unit where taken until it has been sealed. A brown bear taken in Subunit 20(E) may not be transported from that subunit, except to Tok, until it has been sealed.

(b) Except as provided in (c) of this section, a person who kills a bear must personally present the skin and skull to an authorized representative of the department for sealing within 30 days after the taking, or a shorter time if requested by the department, and must sign the sealing certificate at the time of sealing.

(c) A person who takes a bear but is unable to present the skin and skull in person must complete and sign a temporary sealing form and ensure that the completed temporary sealing form, along with the bear skin and skull, are presented to an authorized representative of the department for sealing within 30 days after the taking.

(d) If a person kills a bear while on a guided hunt or while hunting with a resident relative under AS 16.05.407, both the hunter and the guide or resident relative who accompanied the hunter must sign the sealing certificate. If a temporary sealing form is used, both the hunter and the guide or resident relative must sign the temporary sealing form.

(e) A person who possesses a bear shall keep the skin and skull together until a representative of the department has removed a rudimentary premolar tooth from the skull and sealed both the skull and the skin. The department may require that the skull of the bear be skinned and that the skin and skull not be frozen at the time of sealing.

(f) No person may falsify any information required on the sealing certificate or temporary sealing form provided by the department.

(g) As used in this section, "bear" means brown and grizzly bear in all units, and black bears of all color phases taken in Units 1—7, 11—16, and 20. The term "temporary sealing form" means a form available at department offices for providing information regarding date and location of bear kill, species of bear, name and address of the hunter, name of the guide, and other information requested by the department on the form. The term "sealing certificate" means a form used by the department for recording information when sealing a bear.

5 AAC 92.220. SALVAGE OF GAME MEAT, FURS, AND HIDES. (a) Subject to additional requirements in 5 AAC 78-5 AAC 88, a person taking game shall salvage the following parts for human use:

(2) the hide and skull of a brown/grizzly bear;

5 AAC 92.260. TAKING CUB BEARS AND FEMALE BEARS WITH CUBS PROHIBITED. No person may take a cub bear or a female bear accompanied by a cub bear.

5 AAC 92.200. PURCHASE AND SALE OF GAME. (a) Except as provided in (b) of this section, the purchase, sale, or barter of game or parts of game is permitted.

(b) Except as provided in AS 16.05.930(e) (relating to the barter of subsistence taken game), no person may purchase, sell, or barter the following:

(2) any part of any bear; or an unsealed beaver, land otter, lynx, wolf, wolverine, or marten from Units 1-5, 7 and 15;

Units and Bag Limits by Species	Subsistence Open Seasons	Resident Open Seasons	Nonresident Open Seasons
Unit 22(A) One bear every four regulatory years.	Sept. 1—Oct. 31 Apr. 15—May 25	Sept. 1—Oct. 31 Apr. 15—May 25	Sept. 1—Oct. 31 Apr. 15—May 25
Unit 22(C)			
SUBSISTENCE AND RESIDENT HUNTERS: One bear every four regulatory years.	Sept. 1—Oct. 31 May 10—May 25	Sept. 1—Oct. 31 May 10—May 25	
NONRESIDENT HUNTERS: One bear every four regulatory years by drawing permit only. 20 permits will be issued for this hunt in combination with remainder of Unit 22.			Sept. 1—Oct 31 May 10—May 25
Remainder of Unit 22			
SUBSISTENCE AND RESIDENT HUNTERS: One bear every four regulatory years.	Sept. 1—Oct. 31 Apr. 15—May 25	Sept. 1—Oct. 31 Apr. 15—May 25	
NONRESIDENT HUNTERS: One bear every four regulatory years by drawing permit only. 20 permits will be issued for this hunt in combination with the hunt in Unit 22(C).			Sept. 1—Oct. 31 Apr. 15—May 25
Unit 23			
SUBSISTENCE AND RESIDENT HUNTERS: One bear every four regulatory years.	Sept. 1—Oct. 10 Apr. 15—May 25	Sept. 1—Oct. 10 Apr. 15—May 25	
NONRESIDENT HUNTERS: One bear every four regulatory years by drawing permit only. 25 permits will be issued.			Sept. 1—Oct. 10 Apr. 15—May 25