PROGRESS REPORT

Grizzly Bear Population Ecology in the Western Brooks Range, Alaska

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Summary

An intensive grizzly bear capture effort conducted during 1986 and 1987 will provide important long-term data on changes in population structure and dynamics, productivity, mortality, movements, and home range. The Utukok Uplands of the North Slope contains a grizzly population that was studied in depth from 1977 to 1979 and has been monitored during subsequent years. Including the 49 captures during 1986 and 1987, 150 bears from the area have been marked. Radio contact has been maintained for 16 grizzlies since 1977-78 and 25 bears were monitored from 1977 until their deaths. Fifteen bears have been monitored since they were cubs and 10 of these are now adult females that have been observed consorting with males or produced offspring. Of 25 mature females in the area during 1987, 14 produced at least 24 cubs. Similarly, of the 29 females observed during 1987, 8 produced at least 14 cubs, for a 2-year mean litter size of 1.81 cubs/litter. This contrasted with the previous 3 years during which only 2 young were produced. Twenty-five of the 40 cubs (65.0%) died during 1986-87. Two adult females and one weaned yearling were killed and eaten by adult males, and 5 other females that died of unknown causes were eaten by other bears. Twelve young-aged females were followed subsequent to weaning; 10 or 11 remained in the vicinity of their mother's home range. Six young-aged males stayed within their maternal home ranges for 1-2 years after weaning, 3 left the year they were weaned, and only 2 were observed within the area after 7 years.

I. Background

During 1987, research studies of the population ecology of grizzly bears (Ursus arctos horribilis) in the western Brooks Range of Alaska continued. The basic rationale and direction of the study remains the same as reported for the 1986 season and is included here for purposes of better understanding. This report includes progress made in data collection and updating of the most important findings to date.

An understanding of the population biology of any species is crucial to maintenance and wise stewardship of that species, whether or not a particular population occurs in an area free from habitat destruction or heavy hunting pressure. Brown and grizzly bear populations throughout North America and the world have been particularly susceptible to loss of habitat and effects from human activities because their low productive capacities, relatively sparse distribution, and wide-ranging movements.

Grizzly bears inhabiting Alaska's North Slope live at the northern limit of grizzly bear range. Winters are long and severe, summers short and cool, and the tundra vegetation is relatively unproductive. Bears have only 4 to 5 months to accumulate fat reserves for 7 to 8 months of hibernation. Study of bears in this area may reveal aspects of population dynamics which would be more difficult to analyze in more complex or diverse ecosystems.

The Alaska Department of Fish and Game initiated a study of grizzly bears in the Utukok Uplands in 1977 as part of an assessment of natural resources for the National Petroleum Reserve-Alaska 105-C studies. Grizzly bear population size and structure was determined in 1978 after 2 years of an intensive capture and marking. From 1979 to the present, we have continued to monitor marked animals in the area and been able to maintain a reasonable sample of marked bears by recapturing bears in years when funds were available. We have collected data for 10 years on the movements, home ranges, survival, and reproduction of individual bears. An intensive capture effort, similar to that of 1977 and 1978

(Reynolds 1980), will provide additional information on the population dynamics of Brooks Range bears. The intensive capture effort and the monitoring of recently weaned young bears will provide insight into home range fidelity and how home ranges are established. This information will be helpful in determining how population reservoirs that occur in national parks influence grizzly bear abundance and population dynamics, both in and adjacent to these areas.

Natural history studies of grizzly bears in Alaska provide an adequate data base on some aspects of reproductive biology food habits, habitat use, and home range size (Dean 1976; Reynolds 1976, 1980, 1984; Murie 1981; Miller and Ballard 1984; Miller and McAllister 1982, 1984). These studies, however, were largely descriptive or were of relatively short duration (2-3 years). Grizzlies do not mature until 4 to 10 years of age, so observed (as opposed to extrapolated) measures of productivity, survival, and movement patterns must be collected over a 4- to 10-year period to be accurate and most useful (Craighead et al. 1974, 1976; Reynolds 1976, 1984; Bunnell and Tait 1980; Knight and Eberhardt 1985). Though long-term studies are necessary for understanding and accurately predicting grizzly bear population dynamics and responses to changing patterns of human use, none have been completed and few are presently ongoing in Alaska.

Two problems which require long-term study and are important to managers of grizzly bear populations are: (1) how observed variations in productivity, survival, emigration, and immigration affect population increases or declines, and (2) whether population reservoirs exist and what effects increased mortality outside such reservoirs would have on the reservoir population. Population reservoirs are those populations characterized by high productivity or survival rates which supplement adjacent populations; in other words, those populations which increase or remain stable even though emigration exceeds immigration. If reservoirs exist, it is important to determine if increased exploitation in adjacent areas constitutes compensatory or additive mortality in the reservoir population.

II. Objectives

1. Relate changes in grizzly bear population size and structure to long-term rates of, and variation in, productivity, survival, emigration, and immigration.

2. Determine the fidelity of grizzly bear offspring to their maternal home ranges.

3. Determine the relationship between fidelity to home range and productivity and survival.

4. Examine patterns of den selection by adult females in relation to production and survival of offspring.

III. Study Area

The 5,200 km2 study area lies in the mountains and foothills of the western Brooks Range. The approximate boundaries of the study area were: Archimedes Ridge (69° 10'N latitude) on the north, the Kokolik River on the west, the crest of the Brooks Range on the south, and a line running from Thunder Mountain to the Utukok River (160° 15'W longitude) on the east. The physiography of the southern 1/4 of the area is mountainous with elevations of about 600 m in river or creek valleys to 1,300 m for the highest peaks. The northern 3/4 of the area is characterized by a series of east/west-oriented rolling hills, ridges, and buttes of 600-900 m elevation which are cut through by 2 major north-south flowing rivers, the Utukok and Kokolik. The lowest elevation on the northern edge of the area is 400 m.

Tussock tundra characterized by cottongrass (Eriophorum sp.) and sedges (Carex sp.) was the predominant vegetative type on the area. In addition, wet sedge meadow communities were found on poorest drained sites, and Dryas sp. or fellfield communities on ridge slopes and mountains. Patches of willows (Salix sp.) are usually stunted but grow to heights of 0.5-2.5 m along broad braided river channels (Spetzman

1959, Hechtel 1985).

IV. Methods

Bears were captured from helicopters by dart guns using immobilizing drugs Sernylan (phencyclidine hydrochloride), M-99 (etorphine hydrochloride, D-M Pharmaceuticals, Inc., Rockville, Md.) or Telazol (Zoletil 100; 50% tiletamine and 50% zolazepam, Reading Laboratories, L'Hay les Roses, France or A. H. Robins Co., Richmond, Virginia). Acepromazine maleate (Ayerst Laboratories, New York, N.Y.) was used as a tranquilizer in conjunction with Sernylan injections. All bears captured were marked with individually coded ear flags visible from the air, and selected bears were fitted with radio collars (Telonics, Mesa, Ariz.). Offspring which accompanied their mothers were not collared until the year in which they were judged ready to be weaned (2-to 4-year-olds, depending on individual family group and year). Most bears were relocated from aircraft either by radio-tracking bears fitted with transmitters or bears through aerial searches. Relocations were used to construct minimum home range polygons, a standard method used in other grizzly bear studies (Craighead and Craighead 1972).

Age structure, age at 1st production of cubs, mean litter size, and reproductive interval were used as indicators of population productive potential. Ages were determined by examination of cementum annuli of premolar teeth (Mundy and Fuller 1964). In the discussion of age classes, the definitions were: "offspring" were cub, yearling, and 2-year-old cohorts, comprised of bears usually accompanied by their mothers; "young-age" bears, those 3 to 5 years of age; and adults, all cohorts 6 years of age and older. Reproductive status was estimated from (1) the size, coloration, and lactating condition of mammae; (2) observations of male-female pairing; and (3) the number and age of offspring observed in family groups.

Some mortalities were directly observed but others were assumed. Since we saw no evidence of survival of cubs or yearlings which were not accompanied by their mothers, we assumed that their absence from their

radio-collared mothers meant that these offspring had died. Also, we have not observed any abrupt shifts in the established home ranges of adult radio-collared females. Therefore, we presumed that those females which had known home ranges but which we were unable to relocate after 2 years of intensive aerial searches were dead. Although we recognize that there is a potential source of bias in treating these females as mortalities, our present data indicate that this bias is small, especially for bears older than 19 years. We did not treat males in the same way because of their larger home range sizes and wide-ranging movement patterns.

V. Results and Discussion

Captures

During 1986 and 1987, 49 bears were captured and marked in the study area (Table 1). Of those, 19 were males and 30 were females; 28 had not been previously captured, but 8 were offspring of previously marked bears. Of the bears which were originally captured in 1977-78, contact has been maintained until at least 1986 for 18 bears and until the time of their deaths for another 25 bears (Table 2). In addition, we have maintained contact with 15 bears from the time they were first observed with their mothers; 10 females which were originally captured with their mothers have either produced their own offspring or been observed consorting with adult males.

Population size

Population size during the 1977-79 period was determined using the direct count method (Reynolds 1980, Reynolds and Hechtel 1984). Capture of a sample size sufficient to calculate population size in the same manner will not be completed until summer 1988 or 1989. We recognize a number of biases inherent in this method of estimating population size; for instance, it is difficult to calculate a variance since the estimate is based in part on an estimated number of bears living in the area which were not captured. However, other methods such as capture-recapture ratios were not funded in this study and may also be biased especially in areas of low bear density such as the north slope of the

Brooks Range (Reynolds et al 1987). By marking a large proportion of the population, the degree of bias should be minimized when the direct count approach is used. In addition, if additional funding becomes available, estimates of population size and density will be calculated using other techniques for comparative purposes.

Population structure

Sixty-six individual males and 84 females have been captured during the study (Table 1). These figures probably do not reflect sexual structure of this unhunted population, but final analysis will not be completed until capture effort is completed in 1989. During tagging operations, bears were captured as they were encountered, so that, over time, structure based on occurrence in the capture sample should be representative of the population. The only exception to this practice occurred with offspring under maternal care; to avoid the effects of handling, those bears were not captured until just prior to weaning. Because of this practice, the number of offspring which died while under maternal care is unknown.

Productivity

During 1987, 29 potentially reproductively mature females were observed in the study area (Table 3). Of these, 8 were observed with cubs of the year, 5 were observed with older offspring, and 16 may have bred during 1986 but did not produce cubs in 1987. Of the 16 which did not produce cubs in 1987, 4 were mature and bred but did not have cubs, 4 were young and may not have actually been reproductively mature, 3 lost cubs in 1986 and may not have subsequently bred, the status of 3 was unknown in 1986, and 2 were found dead and cubs were not observed but was killed by an adult male before verification could be made.

For comparison, during 1986, 25 potentially reproductively mature females were observed in the study area. Of these, 14 were observed with cubs of the year, 5 bred during 1985 but did not produce cubs in 1986, 5 were young and may not have actually been reproductively mature, and 1 may have had cubs but was killed by an adult male before verification could be made.

More females were observed with cubs during 1986-87 than in any other 2-year period since the study was initiated (Table 3). Although there may be several plausible explanations for this observation, it is most likely the result of the availability of microtines during a high population cycle in 1986, access to the steadily increasing Western Arctic Caribou Herd, and moderate weather patterns. During 1983-85, 24, 13, and 10 adult females were observed in each respective year, but only 1, 1, and 0 young were produced. This pattern was likely due to unseasonably cold and/or long winters, perhaps aggravated by declines in vegetative food production. Another explanation for the high cub production during 1986 is that following several years when cubs were not being produced, fewer females were accompanied by older offspring and a larger proportion of adult females in the population bred in 1985.

The 21 females which produced cubs that were observed during 1986-87 had a mean litter size of 1.81 cubs/litter. This compares with the mean of 1.98 cubs/litter for the 1977-83 period, but is within the range reported for that time of 1.67 to 2.50 cubs/litter. The relationship between long-term production rates for the population and for individual females will be discussed more fully as additional data are collected.

Survival and mortality

During 1986-87, 34 mortalities were observed in the study area; 18 in 1986 and 16 in 1987. This compares with 43 or an average of 6.1 determined during the 1977-83 period (Reynolds and Hechtel 1984). Ten of the 34 mortalities occurred to adult bears. Observations indicate that 2 adult females and one weaned yearling were killed and eaten by adult male grizzlies; 5 were eaten by other bears, but the causes of their deaths were unknown. Hunters killed 2 bears and 1 apparently died in a rock-slide. At least 25 of the 40 cubs (65.0%) born in 1986 or 1987 died during the period, an expected pattern, since 44.1% of cubs died during the 1977-83 period (Reynolds and Hechtel 1984).

Movement patterns and fidelity to home range

The fidelity of young-aged bears to their maternal home ranges varied (Table 4). Females appear to be more likely to stay within the area of their mother's home range than do males. Of 12 young-aged females which we followed subsequent to weaning, 10 or 11 have apparently remained in the vicinity of their mother's home range. Female no. 1179 traveled 100 km south and used an area near the Noatak River, before coming back to her maternal home range and then returning south again. In 1987, she spent mid-summer near the Noatak River, but moved to her maternal home range in the spring and fall, apparently denning there. Another female, no. 1102, was located near her maternal home range until she was age 6 and produced a litter of cubs, but was not seen afterwards; she may have either moved or died. Six young-aged males stayed within their maternal home ranges for from 1-2 years after weaning, but only 2 were observed within the area after 7 years. In addition, 3 other young-aged males left their maternal home ranges the same year they were weaned. Certainly, there are biases in our collection of data on fidelity to maternal home ranges since we are more likely to determine whether bears stay in the study area than if they leave. Additional data collected during the study will improve our understanding of dispersal by young bears. Patterns of adult fidelity to the home ranges within the study area will be addressed in future reports.

Denning

Patterns of den selection by grizzlies in the study area will be analyzed in future reports.

VI. CONCLUSIONS

In 1986, a 3-year intensive capture and marking project was begun to estimate the size and sex and age structure of a grizzly bear population inhabiting the Utukok Uplands of the North Slope of the Brooks Range. Three more years of capture and tracking will allow us to refine our

population estimate based on the 1987 year and allow us to compare it with the estimate obtained 10 years ago. Long-term data collection on productivity, mortality, survival, movements, denning, home range fidelity, and fate of offspring is providing important insights into grizzly bear population ecology that cannot be obtained in studies of less than 10 years duration. Future reports will present and analyze this information in greater detail.

VII. ACKNOWLEDGMENTS

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Table 1. Capture and marking characteristics of 150 grizzly bears in the western Brooks Range, Alaska, 1977-87.

Bear No. and sex	Cem. age (yr)	Date of capture	Bear wt. (lb)	Location	Drug dosage[a]	Ear tags (left/right)	Marking[b]
1081M	5.5	5/24/77	175	Utukok R.	2.6/H	889/890	P/O
	7.5	9/17/79	430	N. Meat Mtn.	A/M	17827/17826	P/O
	8.5	7/7/80	380	Disappoint Cr.	2.8	504/503	P/O
		8/15/80	400	Utukok R.	3.0/L	504/503	P/O
	12.5	9/14/84	--	Utukok R.	1.8M99/L	504/503	P/O
		9/16/84	440	Utukok R.	4.0/M	338/339	1B/R
	15.5	6/19/87	360	Driftwood Cr.	6.0T/M	565/564	1B/R
1082M	13.5	5/25/77	370	Kokolik R.	2.0/M	892/893	O/G/O
		6/13/77	365	Kokolik R.	2.3/M	892/893	--
		6/25/77	380	Kokolik R.	2.7/M	892/893	--
		8/10/77	--	Kokolik R.	2.7/L	892/893	--
	14.5	6/27/78	425	Kokolik R.	2.8/L	892/893	Bk
	15.5	6/28/79	480	Kokolik R.	A/M	313/312	--
	16.5	8/17/80	520	Kokolik R.	5.0/L	538/539	dB/P
	23.5	6/18/87	370	Utukok R.	5.2T/H	554/555	W/R
1083M	7.5	5/25/77	265	Utukok R.	2.0/M	894/895	plaque
		6/2/77	--	Utukok R.	2.6/L	894/895	Bk
	8.5	7/2/78	360	Utukok R.	2.7/M	894/895	Bk
	9.5	6/30/79	355	Utukok R.	3.4/H	894/	--
	14.5	5/26/84	360[c]	Meat Mtn.	1.8M99/M	3350/3319	dB/1B
	15.5	6/4/85	345	Utukok R.	2.6/M	422/423	dB/1B
1084M	7.5	5/26/77	220	Utukok R.	A/L	897/896	P/P
		6/2/77	--	Driftwood Cr.	2.2/L	897/896	Bk/W
1085F	19.5	5/27/77	280	Meat Mtn.	A/L	899/898	--
1086F	16.5	5/29/77	205	Meat Mtn.	2.0/L	205/206	--
		6/24/77	235	Meat Mtn.	1.3/L	205/206	--
		8/8/77	265	Driftwood Cr.	1.9/M	205/206	--
	18.5	9/16/79	400[c]	N. Meat Mtn.	A/L	205/206	--
1087F	1.5	5/29/77	31	Meat Mtn.	0.13/M	207/208	/G
	3.5	6/30/79	170	Meat Mtn.	1.1/M	314/208	Bk/
	4.5	7/7/80	205	Meat Mtn.	A/M	506/505	1B/Bk
	8.5	5/25/84	220[c]	Meat Mtn.	2.0M99/M	3195/3237	1B/Bk
1088M	4.5	5/31/77	270	Eskimo Hill	2.0/M	210/209	--
1089F	4.5	6/1/77	122	Adventure Cr.	A/M	214/213	--
		6/10/77	126	Adventure Cr.	1.7/M	243/240	W/W
	12.5	6/4/85	245	Adventure Cr.	2.0/M	401/402	W/W
1090F	18.5	6/1/77	220	Utukok R.	A/H	215/216	--
1091M	19.5	6/4/77	350	Utukok R.	3.0/H	217/218	--
1092F	8.5	6/4/77	220	Ilingnorak	2.2/M	227/226	--
	11.5	8/19/80	320	Ilingnorak	4.0	549/548	O/G
	14.5	6/21/83	--	Ilingnorak	3.8M99/M	3389/3466	O/G
	16.5	9/6/85	375	Ilingnorak	A/L	356/357	O/G

Table 1. Continued.

Bear No. and sex	Cem. age (yr)	Date of capture	Bear wt. (lb)	Location	Drug dosage[a]	Ear tags (left/right)	Marking[b]
1093F	0.5	6/4/77	38	Ilingnorak	0.1/M	228/229	lB/
1094M	4.5	6/5/77	175	Meat Mtn.	2.0/H	225/230	lB/dB
1095F	6.5	6/5/77	200	N. Meat Mtn.	1.5/M	231/233	O/W
	16.5	6/24/87	220	Thunder Cr.	3.6/M	596/597	Y/Y
1096M	7.5	6/5/77	325	Meat Mtn.	2.6/M	236/237	--
	8.5	6/28/78	395	Utukok R.	2.8/M	774/775	lB
	9.5	6/28/79	--	N. Meat Mtn.	A/H	774/893	/lB
	10.5	8/17/80	505	Meat Mtn.	4.2/L	536/537	O/lB
1097F	8.5	6/5/77	225	Meat Mtn.	1.8/M	235/234	--
		6/19/77	--	Utukok R.	1.4/M	235/234	--
	11.5	7/6/80	300	Utukok R.	1.8/M	510/511	Pp/P
		8/16/80	270	Utukok R.	A/L	510/511	Pp/P
	14.5	9/19/83	305	Utukok R.	5.0M99/M	3236/3480	Bk/P
	16.5	6/5/85	220	Colville R.	1.7/M	432/433	Bk/R
	18.5	5/25/87	240[c]	Utukok R.	3.2T/M	594/429	R/Bk
1098M	3.5	6/8/77	108	Utukok R.	1.2/H	238/239	O/lB
1099M	10.5	6/11/77	365	Utukok R.	3.2/M	245/244	--
	11.5	6/27/78	450[c]	Kokolik R.	2.8/M	773/772	--
	12.5	6/26/79	450	Utukok R.	3.0/M	773/772	--
	16.5	9/20/83	495	Utukok R.	6.0M99/H	3238/3485	R/R
1100F	6.5	6/11/77	200	Meat Mtn.	2.4/M	247/246	--
	7.5	6/9/78	240[c]	Utukok R.	2.5/H	247/246	P
	8.5	7/1/79	220	Driftwood Cr.	1.9/M	247/246	P
1101M	2.5	6/12/77	145	Utukok R.	1.2/L	249/248	G/W
1102F	2.5	6/12/77	125	Utukok R.	1.2/L	251/250	W/G
	3.5	6/18/78	140	Utukok R.	1.4/M	251/250	--
	5.5	8/18/80	210	Kokolik R.	3.0	544/545	W/G
1103M	8.5	6/12/77	320	Utukok R.	2.6/H	253/252	--
	9.5	6/12/78	--	Utukok R.	A/H	253/252	--
	16.5	6/8/85	430	Utukok R.	2.4/L	202/201	O/mG
1104F	9.5	6/12/77	215	Utukok R.	1.6/M	255/254	--
		6/17/77	--	Utukok R.	1.2/L	255/254	--
	12.5	7/10/80	250	Nimwutik Cr.	1.5/L	517/518	P/G
	15.5	6/22/83	190	Nimwutik Cr.	3.8M99/M	3468/3471	G/G
	17.5	6/10/85	240	Utukok R.	1.5/L	203/204	mG/mG
	18.5	6/26/86	245[c]	Utukok R.	2.5T/M	254/204	Y/mG
1105F	7.5	6/13/77	225	Kokolik R.	1.5/M	257/256	--
		6/26/77	245	Tupikchak Mtn.	1.5/L	257/256	--
	8.5	6/28/78	285	Kokolik R.	1.7/L	257/301	--
	10.5	7/10/80	260	Iligluruk Cr.	1.8/M	522/521	W/O
	13.5	9/18/83	310	Tupikchak Mtn.	6.0M99/H	3309/3258	W/O
	15.5	6/7/85	185	Tupikchak Mtn.	2.0/M	209/210	W/O
1106F	11.5	6/14/77	210	Adventure Cr.	1.5/H	258/259	--

Table 1. Continued.

Bear No. and sex	Cem. age (yr)	Date of capture	Bear wt. (lb)	Location	Drug dosage[a]	Ear tags (left/right)	Marking[b]
1107F	0.5	6/14/77	7	Adventure Cr.	None	None	None
1108F	0.5	6/14/77	20	Adventure Cr.	None	/260	/W
1109F	0.5	6/14/77	18	Adventure Cr.	None	261/	W/
1110F	24.5	6/15/77	245	Ilingnorak	A/H	262/263	1B/P/1B
	25.5	7/1/78	--	Ilingnorak	1.9/L	262/263	dB
	26.5	6/30/79	235	Ilingnorak	1.7/H	262/263	--
1111F	14.5	6/18/77	240	Colville R.	1.7/M	269/268	--
1112M	4.5	6/18/77	250	Colville R.	1.7/M	267/266	dB/G
1113F	4.5	6/18/77	150[c]	Colville R.	1.5/M	270/271	G/dB
1114M	16.5	6/19/77	450	Utukok R.	1.7/L	273/272	O/G/O
1115M	5.5	6/22/77	175	Meat Mtn.	1.5/H	275/274	dB/O
1116M	5.5	6/23/77	175	Utukok R.	1.5/M	276/277	O/dB
1117M	19.5	6/23/77	315	Driftwood Cr.	A/M	279/278	Pp/W/Pp
1118F	17.5	6/23/77	185	Driftwood Cr.	1.3/H	281/280	W/Pp
	24.5	9/14/84	275	Driftwood Cr.	AM99/M	321/322	W/Pp
1119F	6.5	6/24/77	190	N. Meat Mtn.	1.7/L	282/283	O/P
1120M	16.5	6/24/77	390	N. Meat Mtn.	2.6/M	284/285	Pp/1B/Pp
1121F	11.5	6/25/77	245	Kokolik R.	A/H	287/286	--
	18.5	9/17/84	320	Kokolik R.	A/L	383/384	R/Y
1122M	0.5	6/25/77	30	Kokolik R.	0.12/M	/288	/G
1123F	0.5	6/25/77	27	Kokolik R.	0.12/M	289/	G/
1124M	17.5	6/26/77	360	Tupikchak Mtn.	2.6/M	291/290	dB/W/dB
	24.5	9/17/84	390	Tupikchak Mtn.	4.0/L	385/386	Y/Y
1125F	3.5	6/27/77	145	Utukok R.	1.4/H	/292	/W
1126M	13.5	6/28/77	345	Kokolik R.	2.7/M	293/294	O/W/O
1127F	26.5	6/28/77	295	Kokolik R.	1.5/L	295/	P/W/P
1128F	7.5	6/30/77	240[c]	Tupikchak Mtn.	1.8/M	297/296	P/P/P
1129F	1.5	6/30/77	90	Tupikchak Mtn.	0.5/M	299/298	P/P
1130F	21.5	6/30/77	255	Elbow Cr.	1.9/M	300/900	O/O/O
1131M	8.5	7/1/77	235	Driftwood Cr.	2.5/H	3085/3086	G/O
1132F	2.5	7/2/77	67	Archimedes	--	1498/3082	1B/P
1133M	2.5	7/2/77	80	Archimedes	--	3088/1499	P/1B
	4.5	6/27/79	150	Utukok R.	1.4/M	310/309	P/1B
1134F	14.5[c]	7/5/77	230[c]	Utukok R.	2.0/L	3089/3090	O
	17.5[c]	7/12/80	285	Utukok R.	2.8/H	526/527?	Bk/G
	20.5[c]	6/20/83	165	Utukok R.	A/H	--	--
1135M	1.5	7/5/77	57	Utukok R.	--	3091/3092	O/O
1136F	1.5	7/5/77	48	Utukok R.	--	3093/	O/
1137F	1.5	7/5/77	58	Utukok R.	--	/3094	/O
1138F	23.5	8/10/77	250	Kantangnak Cr.	1.9/M	None	O
	24.5	6/16/78	265	Kantangnak Cr.	A/L	759/758	dB/dB/dB
1139F	11.5	6/7/78	200[c]	Utukok R.	1.3/M	651/654	W
	16.5	6/22/83	180	Utukok R.	3.6M99/M	3226/3229	mG/G

Table 1. Continued.

Bear No. and sex	Cem. age (yr)	Date of capture	Bear wt. (lb)	Location	Drug dosage[a]	Ear tags (left/right)	Marking[b]
1140M	0.5	6/7/78	21	Utukok R.	None	/655	/O
1141F	0.5	6/7/78	16	Utukok R.	None	656/	O/
	2.5	7/13/80	165	Utukok R.	2.1	532/533	W/O
	6.5	9/16/84	260	Archimedes	2.6/L	397/398	W/O
	7.5	6/5/85	220[c]	Archimedes	1.8/M	397/398	W/O
	9.5	5/25/87	190[c]	Disappointment Cr.	3.0T/M	491/492	W/Y
1142F	14.5	6/9/78	250[c]	Utukok R.	A/H	658/657	Bk
1143F	9.5	6/9/78	210[c]	Utukok R.	1.8/H	704/705	lB/W
1144F	1.5	6/9/78	38	Utukok R.	0.4/H	717/718	Pp/G
	8.5	9/4/85	345	Elbow Cr.	A/H	260/261	mG/R
1145F	2.5	6/10/78	95	Elbow Cr.	1.7/H	720/719	lB/G
1146F	14.5	6/10/78	230[c]	Elbow Cr.	2.5/H	721/722	G/lB
1147M	3.5	6/10/78	205	Utukok R.	1.3/M	723/724	P/G
	5.5	7/10/80	305	Tupikchak Cr.	2.8/H	516/515	P/dB
	9.5	9/15/84	388	Utukok R.	4.0/L	327/328	R/dB
	11.5	6/30/86	395	Kokolik R.	3.2/M	242/243	R/lB
1148M	6.5	6/10/78	205	Utukok R.	1.3/M	725/728	dB/W
1149F	4.5	6/11/78	180	Utukok R.	1.3/M	736/733	W/dB
	13.5	6/24/87	245	Utukok R.	5.4T/M	558/559	Y/Pp
1150M	5.5	6/16/78	185	Utukok R.	1.2/M	751/747	Bk/P
1151F	3.5	6/16/78	112	Kantangnak Cr.	--	752/753	Bk/Bk
	8.5	6/22/83	165	Plunge Cr.	3.8M99/M	3469/	Bk/
1152M	3.5	6/16/78	142	Kantangnak Cr.	--	754/755	O/Bk
1153F	2.5	6/16/78	70	Kantangnak Cr.	--	756/757	Bk/O
	9.5	6/8/85	185	Utukok R.	1.8/M	215/216	R/O
1154F	12.5	6/21/78	220	Tupik Cr.	1.8/M	760/761	W/O/W
1155M	1.5	6/21/78	75	Tupik Cr.	0.50/M	763/762	G/W
1156F	6.5	6/21/78	205	Kogruk Cr.	2.0/M	765/764	P/Bk
	15.5	6/23/87	215	Elbow Cr.	3.4T/L	532/533	dB/Bk
1157M	5.5	6/24/78	210	Driftwood Cr.	A/H	766/767	P/G/P
	6.5	6/30/79	275	Driftwood Cr.	2.4/H	766/767	Bk/P
	14.5	6/23/87	260	Elbow Cr.	5.6T/M	538/539	W/dB
1158F	7.5	6/24/78	180	Elbow Cr.	1.4/M	769/768	P/W
1159M	10.5	6/24/78	295	Driftwood Cr.	1.7/M	770/771	G/P
	12.5	8/16/80	--	Utukok R.	A/L	535/534	G/P
	15.5	9/16/83	--	Utukok R.	--	--	--
1160M	0.5	7/1/78	25	Ilingnorak	None	303/	dB/
1161M	0.5	7/1/78	21	Ilingnorak	None	/302	/dB
1162M	2.5	7/1/78	95	Iligluruk Cr.	1.1/M	304/305	lB/Bk
1163M	2.5	7/3/78	92	Iligluruk Cr.	A/H	306/307	Bk/lB

Table 1. Continued.

Bear No. and sex	Cem. age (yr)	Date of capture	Bear wt. (lb)	Location	Drug dosage[a]	Ear tags (left/right)	Marking[b]
1164M	3.5	5/7/79	185	Meat Mtn.	1.3/M	308/311	G/Bk
	4.5	7/6/80	270	Meat Mtn.	1.9/M	512/311	Bk/G
	8.5	9/18/84	370	Meat Mtn.	4.0/L	584/419	lB/G
	10.5	7/1/86	350	Kokolik R.	2.8/M	510/509	lB/G
1165M	3.5	9/17/79	200[c]	N. Meat Mtn.	A/H	318/319	G/dB
	8.5	9/14/84	335	Meat Mtn.	AM99/M	332/333	R/W
1166F	10.5	9/18/79	390	N. Meat Mtn.	A/L	284/317	dB/O
	11.5	7/7/80	265	Utukok R.	2.1/H	502/317	lB/O
	14.5	6/22/83	--	Utukok R.	3.6M99/H	3221/3228	mG/lB
1167F	7.5	9/18/79	235	N. Meat Mtn.	2.8/H	271/315	O/dB
	15.5	6/18/87	200	Seismo Cr.	2.6T/L	551/600	mG/dB
1168F	0.5	9/18/79	55	N. Meat Mtn.	0.60/M	274/296	None
1169F	11.5	7/5/80	290	Kokolik R.	2.2/L	513/514	Bk/dB
	14.5	6/21/83	--	Plunge Cr.	3.8M99/M	3467/3465	mG/Bk
	17.5	9/6/85	360	Kantangnak Cr.	A/M	259/255	mG/Bk
1170F	0.5	7/5/80	34	Kokolik R.	0.10	114/112	dB/
1171M	0.5	7/5/80	32	Kokolik R.	0.10	115/113	Bk/
1172M	11.5	7/6/80	360	Utukok R.	3.2/H	509/508	W/lB
	15.5	9/16/84	400	Archimedes	4.6/H	325/326	W/lB
1173M	0.5	7/10/80	32	Kokolik R.	0.14	525/101	/O
	4.5	5/25/84	120[c]	Tupikchak Mtn.	1.8M99/H	--	--
	5.5	6/7/85	143	Tupikchak Mtn.	1.5/M	495/496	W/mG
1174F	0.5	7/10/80	28	Kokolik R.	0.14	501/507	O/
	4.5	5/25/84	110[c]	Tupikchak Mtn.	1.8M99/H	--	--
	5.5	6/7/85	113	Tupikchak Mtn.	1.5/M	222/221	mG/W
	6.5	6/27/86	195	Tupikchak Mtn.	1.8/M	222/293	mG/W
	7.5	6/19/87	175	Tupikchak Mtn.	A,T/M	575/574	lG/W
1175M	7.5	7/12/80	400	Iligluruk Cr.	2.6	528/529	lB/lB
1176F	18.5	7/13/80	345	Utukok R.	2.0/M	531/530	G/G
	22.4	9/16/84	280	Archimedes Rg.	A/H	399/400	G/B
	25.5	6/22/87	260	Archimedes Rg.	3.1T/L	502/501	lG/lG
1177F	1.5	7/10/80	91	Nimwutik Cr.	0.38/L	520/519	G/G
	4.5	9/18/83	195	Utukok R.	4.0M99/M	3262/	O
	6.5	6/10/85	170	Avingak Cr.	1.6/M	233/234	R/lB
	7.5	6/30/86	220	Nimwutik Cr.	1.6/M	389/390	R/lB
1178F	13.5	8/18/80	250	Utukok R.	3.0	540/541	lB/Bk
1179F	2.5	8/18/80	135	Utukok R.	1.4/L	542/543	lB/O
	5.5	6/22/83	--	--	3.8M99/L	3230/3231	dB/mG
	7.5	6/10/85	200	Utukok R.	1.9/L	439/438	lB/mG
	9.5	6/22/87	265	Noatak R.	3.1T/L	515/516	lB/G
1180F	0.5	8/18/80	31	Kokolik R.	0.30/L	/547	/lB

Table 1. Continued.

Bear No. and sex	Cem. age (yr)	Date of capture	Bear wt. (lb)	Location	Drug dosage[a]	Ear tags (left/right)	Marking[b]
1181F	0.5	8/18/80	34	Kokolik R.	0.40/M	546/	1B/
	3.5	9/15/83	225	Utukok R.	A/H	--	1B/dB
	4.5	5/26/84	145[c]	Nimwutik Cr.	1.8M99/H	546/-	1B/dB
	5.5	6/6/85	185	Meat Mtn.	A/M	3394/352	1B/dB
1232M	4.5[c]	9/18/83	190	Utukok R.	6.0M99/M	3399/3317	W/R
1233M	11.5[c]	9/18/83	430	Kokolik R.	6.0M99/M	3261/3395	dB/O
	13.5[c]	6/10/85	400	Utukok R.	A/L	207/208	dB/O
1234F	5.5[c]	9/18/83	280	Utukok R.	6.0M99/M	3253/3400	O/W
	7.5[c]	6/6/85	200	Utukok R.	2.0/M	3253/594	O/W
1261M	10.5	6/22/83	345	Utukok R.	5.0M99/M	3457/3470	mG/dB
1401M	11.5	5/25/84	370[c]	Tupikchak Mtn.	6.0M99/H	3042/3403	W/Bk
1402M	3.5	5/25/84	80[c]	N. Meat Mtn.	3.0M99/H	-- --	--
	4.5	6/5/85	115	Colville R.	1.2/H	218/217	Bk/dB
	5.5	6/29/86	180	Nuka R.	1.8/M	218/217	Bk/dB
1403F	3.5	5/25/84	95	N. Meat Mtn.	1.0M99/H	3475/3474	W/Bk
	4.5	6/5/85	125	Colville R.	1.2/L	206/205	W/Bk
	5.5	7/1/86	190	Utukok R.	2.6T/M	511/512	W/Bk
	6.5	5/25/87	170[c]	Amo Cr.	2.6T/M	484/485	W/Bk
1404M	3.5	5/25/84	90[c]	N. Meat Mtn.	1.0M99/H	3472/3487	Bk/W
	4.5	6/5/85	150	Colville R.	1.2/L	421/420	Bk/W
1405M	7.5	5/26/84	215[c]	N. Meat Mtn.	2.3M99/H	3047/3043	Bk/O
	10.5	6/20/87	330	Utukok R.	3.4T/M	478/479	R/Y
1406F	10.5	9/13/84	275	Utukok R.	5.0M99/L	324/323	R/mG
1407F	10.5	9/14/84	275	E. Meat Mtn.	AM99/M	334/335	G/O
	13.5	6/18/87	240	Meat Mtn.	3.0T/M	542/543	mG/Y
1408M	10.5	9/15/84	300[c]	Utukok R.	AM99/M	382/381	O/R
1409M	0.5	9/16/84	31	Archimedes	0.3/H	329/330	O/O
1410F	20.5	9/16/84	265	Archimedes	A/H	336/337	G/O
1411M	7.5[c]	6/4/85	410	Plunge Cr.	2.4/M	424/425	G/R
1412M	15.5[c]	6/4/85	360	Ilingnorak	2.4/L	403/404	mG/lG
1413F	9.5	6/8/85	200	Archimedes	1.9/2.0	223/224	lB/lB
1414F	2.5	6/8/85	105	Archimedes	1.4/1.0	213/214	dB/mG
1415F	14.5[c]	9/5/85	375	Utukok R.	A/L	244/245	lB/O
1416F	8.5[c]	9/5/85	405	Elbow Cr.	A/L	264/265	G/Bk
1417F	8.5[c]	9/6/85	355	Spike Cr.	A/L	266/267	mG/mG
1418M	17.5[c]	9/6/85	425[c]	Archimedes	A/M	263/262	R/G
1418F	15.5[c]	6/24/86	240	Squirrel R.	2.6T/M	377/376	Y/Y
1419M	9.5[c]	6/24/86	415	Squirrel R.	AT/M	--	--
1420M	7.5[c]	6/25/86	345	Kokolik R.	2.8/M	284/285	dB/W
1421M	13.5[c]	6/25/86	475	Kokolik R.	3.2/L	347/346	O/lB
1422F	0.5	6/26/86	15	Utukok R.	0.15/L	-/283	-/Y
1423M	0.5	6/26/86	11	Utukok R.	0.15/M	282/-	Y/-
1424F	8.5[c]	6/27/86	285	Kokolik R.	2.2/L	270/271	R/R

Table 1. Continued.

Bear No. and sex	Cem. age (yr)	Date of capture	Bear wt. (lb)	Location	Drug dosage[a]	Ear tags (left/right)	Marking[b]
1425F	7.5[c]	6/29/86	200	Kokolik R.	2.5T/M	350/351	O/dB
1426F	0.5	6/29/86	18	Kokolik R.	0.1/L	-/288	-/Y
1427M	0.5	6/29/86	22	Kokolik R.	0.25/M	289/-	Y/-
1428F	7.5[c]	6/30/86	240	Utukok R.	3.2T/M	290/291	dB/G
1429M	13.5[c]	7/2/86	380	Squirrel R.	5.0T/M	508/506	Bk/Bk
	14.5[c]	5/25/87	400[c]	Spruce Cr.	A,T/M	523/506	Bk/Bk
1430F	6.5[c]	5/22/87	190[c]	Kiana Hills	3.0T/M	547/546	R/R
1431F	8.5[c]	5/23/87	250[c]	Timber Cr.	A,T/L	540/541	mG/mG
1432M	9.5[c]	5/23/87	260[c]	Timber Cr.	3.2T/M	588/589	lB/lB
1433M	12.5[c]	5/23/87	400[c]	Timber Cr.	5.5T/M	552/553	Y/R
1434M	0.5	6/18/87	20	Seismo Cr.	0.14T/L	-/449	-/R
1435F	0.5	6/18/87	20	Seismo Cr.	0.14T/L	450/-	R/-
1436F	0.5	6/18/87	12	Seismo Cr.	0.8T/L	-/-	-/-
1437F	9.5[c]	6/19/87	160	Sulungatak Rg.	2.8T/H	563/562	dB/R
1438F	ad	6/20/87	220	Sulungatak Rg.	2.8T/L	586/587	dB/dB
1439F	14.5[c]	6/20/87	210	Sulungatak Rg.	4.0T/M	572/573	mG/dB
1440F	14.5[c]	6/20/87	220	Sulungatak Rg.	3.0T/M	387/388	R/Bk
1441F	15.5[c]	6/20/87	270	Kokolik R.	3.0T/M	556/557	W/Pp
1442M	0.5	6/20/87	24	Kokolik R.	--	583/-	R/-
1443M	0.5	6/20/87	25	Kokolik R.	--	-/582	-/R
1444M	0.5	6/20/87	24	Kokolik R.	--	588/589	-/-
1445F	1.5	6/20/87	60	Utukok R.	1.6T/M	568/569	dB/lB
1446M	15.5[c]	6/22/87	410	Utukok R.	5.0T/M	544/545	mG/O
1447M	4.5[c]	6/23/87	220	Utukok R.	3.4T/M	576/577	Bk/mG
1448M	8.5[c]	6/24/87	260	Spike Cr.	5.6T/M	434/435	dB/Pp
1449M	1.5	6/24/87	42	Spike Cr.	0.6T/M	578/579	lB/W
1450F	1.5	6/24/87	38	Spike Cr.	0.6T/M	592/593	R/W
1451F	14.5[c]	6/24/87	240	Utukok R.	3.2T/M	536/537	Y/R

[a] Dosage in ml of sernylan, Telazol, or M99; no designation indicates use of Sernylan, T of Telazol, and M99 of M99. A denotes multiple injections with unknown effective dosage. Drug effects were as follows: L = light, M = optimum, H = heavy.

[b] Marker designations:
Colors: P, pink; W, white; G, light green; mG, medium green; O, orange; dB, dark blue; lB, light blue; Bk, black; Pp, purple.
Marker types:
One or 2 color combinations were used for ear flags; e.g., O/W is orange in left ear, white in right ear; /G is no flag, left; green, right. Three flag combinations were used in nylon rope collars; e.g., OOW is 2 identical clusters of OOW flags on opposite sides of the collar.

[c] Estimate after close examination.

Table 2. History and status of grizzly bears marked in the western Brooks Range, Alaska study area 1977-87.

Bear no./sex	Initial capture Age	Initial capture Date	Recaptures	Date of last location	Locations/ year	Status, fall 1987
1081 M	5	5/24/77	9/17/79 7/7/80 8/15/80 9/14/84 9/16/84 6/19/87	9/17/87	2/1977 3/1979 14/1980 13/1981 5/1982 2/1983 1/1984 4/1985 2/1986 2/1987	Functional collar
1082 M	13	5/25/77	6/13/77 6/25/77 8/10/77 6/27/78 6/28/79 8/17/80 6/18/87	9/23/87	24/1977 20/1978 18/1979 3/1980 4/1981 2/1987	Functional collar
1083 M	7	5/25/77	6/2/77 7/2/78 6/30/79 5/20/84 6/4/85	6/18/87	24/1977 15/1978 6/1979 16/1980 1/1981 2/1984 5/1985 2/1986 1/1987	Functional collar
1084 M	7	5/26/77	6/2/77	9/1/84	4/1977	Dead, hunter kill
1085 F	19	5/27/77	--	8/20/80	20/1977 14/1978 9/1979 14/1980	Presumed dead
1086 F	16	5/29/77	6/24/77 8/8/77 9/16/79	7/19/80	33/1977 28/1978 25/1979 13/1980	Presumed dead

Table 2. Continued.

Bear no./sex	Initial capture Age	Initial capture Date	Recaptures	Date of last location	Locations/ year	Status, fall 1987
1087 F	1	5/29/77	6/30/79 7/7/80 5/25/84	9/23/87	10/1979 1/1980 3/1984 6/1985 5/1986 6/1987	Functional collar
1088 M	4	5/31/77	--	6/3/79	8/1977 1/1978 2/1979	Unknown
1089 F	4	6/1/77	6/10/77 6/4/85	9/23/87	10/1977 5/1978 1/1979 3/1986 4/1987	Functional collar
1090 F	18	6/1/77	--	10/12/78	20/1977 17/1978	Presumed dead
1091 M	19	6/4/77	--	10/12/78	19/1977 11/1978	Presumed dead
1092 F	8	6/4/77	8/19/80 6/21/83 9/6/85	9/20/87	20/1977 20/1978 2/1980 5/1981 5/1982 3/1983 1/1984 3/1985 3/1986 4/1987	Dead, hunter kill
1093 F	Cub	6/4/77	--	9/19/78	20/1977 20/1978	Unknown
1094 M	4	6/5/77	--	9/3/83	4/1977	Dead, hunter kill
1095 F	6	6/5/77 6/24/87	--	9/23/87	1/1977 1/1978 2/1987	Unknown

Table 2. Continued.

Bear no./sex	Initial capture Age	Initial capture Date	Recaptures	Date of last location	Locations/ year	Status, fall 1987
1096 M	7	6/5/77	6/28/78 6/28/79 8/17/80	9/19/81	23/1977 25/1978 4/1979 7/1980 15/1981	Probable hunter kill
1097 F	8	6/5/77	6/19/77 7/6/80 8/16/80 9/19/83 6/5/85 5/25/87	9/17/87	22/1977 20/1978 15/1979 19/1980 23/1981 13/1982 3/1984 4/1985 5/1986 9/1987	Functional collar
1098 M	3	6/8/77	--	7/9/78	2/1977 1/1978	Unknown
1099 M	10	6/11/77	6/27/78 6/26/79 9/20/83	10/26/84	20/1977 31/1978 11/1979 1/1980 1/1983 1/1984	Killed, DLP
1100 F	6	6/11/77	6/9/78 7/1/79	8/20/80	18/1977 13/1978 9/1979 12/1980	Unknown
1101 M	2	6/12/77	--	10/7/77	3/1977	Dead, killed by 1099
1102 F	2	6/12/77	6/18/78	6/14/82	3/1977 12/1978 2/1979 2/1980 6/1981 22/1982	Unknown
1103 M	8	6/12/77	6/12/78 5/8/85	6/30/86	20/1977 6/1978 1/1985 1/1986	Functional collar

Table 2. Continued.

Bear No./Sex	Initial capture Age	Initial capture Date	Recaptures	Date of last location	Locations/ year	Status fall 1987
1104 F	9	6/12/77	6/17/77 7/10/80 6/22/83 6/10/85 5/26/86	9/23/87	23/1977 17/1978 2/1979 9/1981 24/1982 2/1983 3/1984 7/1985 4/1986 4/1987	Dead, killed by adult male
1105 F	7	6/13/77	6/17/77 7/10/80 6/22/83 6/7/85	6/20/87	23/1977 21/1978 10/1979 5/1980 6/1981 13/1982 2/1984 3/1985 4/1986 3/1987	Functional collar
1106 F	11	6/14/77	--	5/4/79	23/1977 17/1978 1/1979	Killed by another bear, 1099?
1107 F	Cub	6/14/77	--	4/20/78	23/1977 1/1978	Dead, spring 1978
1108 F	Cub	6/14/77	--	5/4/79	23/1977 17/1978 1/1979	Presumed dead
1109 F	Cub	6/14/77	--	5/4/79	23/1977 17/1978 1/1979	Presumed dead
1110 F	24	6/15/77	7/1/78 6/30/79	5/7/81	2/1977 14/1978 3/1979 11/1980 2/1981	Presumed dead

Table 2. Continued.

Bear no./sex	Initial capture Age	Initial capture Date	Recaptures	Date of last location	Locations/ year	Status, fall 1987
1111 F	14	6/18/77	--	7/11/79	19/1977 14/1978 2/1979	Unknown
1112 M	4	6/18/77	--	6/24/78	10/1977 1/1978	Unknown
1113 F	4	6/18/77	--	10/5/77	9/1977	Unknown
1114 M	16	6/19/77	--	5/31/79	3/1977 3/1978 1/1979	Unknown
1115 M	5	6/22/77	--	6/27/77	3/1977	Unknown
1116 M	5	6/23/77	--	10/12/78	2/1977	Unknown
1117 M	19	6/23/77	--	6/23/77	1/1977	Presumed dead
1118 F	17	6/23/77	9/14/84	6/29/86	3/1977 1/1978 2/1984 3/1985 1/1986	Functional collar
1119 F	6	6/24/77	--	6/9/78	1/1977 1/1978	Unknown
1120 M	16	6/24/77	--	9/18/78	1/1977 1/1978	Unknown
1121 F	11	6/25/77	9/17/84	11/8/86	21/1977 11/1978 1/1980 1/1984 3/1985 3/1986	Dead; killed?, eaten by other bear fall 1986
1122 M	Cub	6/25/77	--	8/25/78	21/1977 11/1978	Unknown

Table 2. Continued.

Bear no./sex	Initial capture Age	Initial capture Date	Recaptures	Date of last location	Locations/ year	Status, fall 1987
1123 F	Cub	6/25/77	--	8/25/78	21/1977 11/1978	Unknown
1124 M	17	6/26/77	9/17/84	6/9/85	7/1977 1/1984 2/1985	Unknown
1125 F	3	6/27/77	--	7/1/77	2/1977	Unknown
1126 M	13	6/28/77	--	6/28/77	1/1977	Unknown
1127 F	26	6/28/77	--	7/14/77	2/1977	Presumed dead
1128 F	7	6/30/77	--	8/31/78	3/1977	Unknown
1129 F	1	6/30/77	--	7/27/77	3/1977	Unknown
1130 F	21	6/30/77	--	8/2/78	1/1977 1/1978	Presumed dead
1131 M	8	7/1/77	--	8/16/78	1/1977 2/1978	Unknown
1132 F	2	7/2/77	--	7/2/77	2/1977	Unknown
1133 M	2	7/2/77	6/27/79	6/2/83	2/1977 1/1978 1/1979	Dead, hunter kill
1134 F	14	7/5/77	7/12/80 6/20/83	6/20/83	18/1977 15/1978 1/1979 3/1980 1/1981 6/1982 3/1983	Dead, eaten by another bear, starved?
1135 M	1	7/5/77	--	5/5/79	18/1977 15/1978 1/1979	Unknown[a]
1136 F	1	7/5/77	--	5/5/79	18/1977 15/1978 1/1979	Unknown[a]

Table 2. Continued.

Bear no./sex	Initial capture Age	Initial capture Date	Recaptures	Date of last location	Locations/ year	Status, fall 1987
1137 F	1	7/5/77	--	5/5/79	18/1977 15/1978 1/1979	Unknown[a]
1138 F	23	8/10/77	6/16/78	10/27/78	2/1977 5/1978	Presumed dead
1139 F	11	6/7/78	6/22/83	5/25/85	16/1978 13/1979 1/1980 2/1984 1/1985	Dead
1140 M	Cub	6/7/78	--	7/11/79	16/1978 13/1979	Unknown
1141 F	Cub	6/7/78	7/13/80 9/16/84 6/5/85 5/25/87	9/23/87	16/1978 13/1979 4/1980 8/1981 9/1982 3/1985 4/1986 6/1987	Functional collar
1142 F	14	6/9/78	--	9/18/78	7/1978	Unknown
1143 F	9	6/9/78	--	7/28/79	2/1978 1/1979	Unknown
1144 F	1	6/9/78	9/4/85	10/1/86	2/1978 1/1979 1/1985 2/1986	Dead, killed by another bear ?
1145 F	2	6/10/78	--	5/4/80	15/1978 5/1979 1/1980	Unknown
1146 F	14	6/10/78	--	5/15/79	15/1978 1/1979	Unknown

Table 2. Continued.

Bear no./sex	Initial capture Age	Initial capture Date	Recaptures	Date of last location	Locations/ year	Status, fall 1987
1147 M	3	6/10/78	7/10/80 9/15/84 6/30/86	9/23/87	2/1978 1/1984 2/1985 1/1986 4/1987	Functional collar
1148 M	6	6/10/78	--	9/21/78	8/1978	Unknown
1149 F	4	6/11/78	6/24/87	7/17/78	3/1978 2/1987	Functional collar
1150 M	5	6/16/78	--	6/16/78	1/1978	Unknown
1151 F	3	6/16/78	6/22/83	5/18/84	1/1983 1/1984	Unknown, shed collar
1152 M	3	6/16/78	--	10/2/78	2/1978	Unknown
1153 F	2	6/16/78	6/8/85	8/8/85	2/1985 2/1986	Unknown; possible sighting with 2 cubs 1986
1154 F	12	6/21/78	--	6/9/80	2/1978 1/1979 1/1980	Unknown
1155 M	1	6/21/78	--	9/1/81	2/1978 1/1979	Dead, hunter kill
1156 F	6	6/21/78	6/23/87	9/23/87	1/1978 2/1987	Functional collar
1157 M	5	6/24/78	6/30/79 6/23/87	6/23/87	1/1978 2/1979 1/1987	Functional collar
1158 F	7	6/24/78	--	6/24/78	1/1978	Unknown
1159 M	10	6/24/78	8/16/80 9/16/83	9/16/83	2/1978 1/1980 1/1983	Unknown

Table 2. Continued.

Bear no./sex	Initial capture Age	Initial capture Date	Recaptures	Date of last location	Locations/ year	Status, fall 1987
1160 M	Cub	7/1/78	--	7/1/78	1/1978	Unknown
1161 M	Cub	7/1/78	--	7/1/78	1/1978	Unknown
1162 M	2	7/1/78	7/2/78	7/26/78	2/1978	Dead
1163 M	2	7/3/78	--	7/3/78	1/1978	Unknown
1164 M	3	5/7/79	7/6/80 9/18/84 7/1/86	9/30/86	1/1979 1/1980 1/1984 4/1985 3/1986	Functional collar
1165 M	3	9/17/79	7/13/80 9/14/84	9/23/87	1/1979 1/1980 2/1984 2/1985 3/1986 1/1987	Functional collar
1166 F	10	9/18/79	7/7/80 6/22/83	9/30/86	2/1979 1/1980 1/1983 2/1984 2/1985 4/1986	Unknown
1167 F	7	9/18/79	6/18/87	9/23/87	1/1979 5/1987	Functional collar
1168 F	Cub	9/18/79	--	9/18/79	1/1979	Unknown
1169 F	11	7/5/80	6/21/83 9/6/85	5/26/86	1/1980 1/1983 1/1984 3/1985 1/1986	Dead, killed by male bear
1170 F	Cub	7/5/80	--	7/5/80	1/1980	Dead
1171 M	Cub	7/5/80	--	7/5/80	1/1980	Dead

Table 2. Continued.

Bear No./Sex	Initial capture Age	Initial capture Date	Recaptures	Date of last location	Locations/ year	Status fall 1987
1172 M	11	7/6/80	9/16/84	8/9/85	1/1980 1/1984 2/1985	Unknown, shed collar
1173 M	Cub	7/10/80	5/25/84 6/7/85	6/27/86	1/1980 2/1985 1/1986	Dead
1174 F	Cub	7/10/80	5/25/84 6/7/85 6/27/86 6/19/87	9/17/87	1/1980 1/1984 3/1985 6/1986 4/1987	Unknown, shed collar
1175 M	7	7/12/80	--	7/12/80	1/1980	Unknown
1176 F	18	7/13/80	9/16/84 6/22/87	9/23/87	2/1980 1/1984 3/1985 3/1986 6/1987	Functional collar
1177 F	1	7/10/80	9/18/83 6/10/85 6/30/86	6/18/87	2/1980 1/1983 4/1984 5/1985 3/1986 2/1987	Functional collar
1178 F	13	8/18/80	--	8/18/80	1/1980 8/1981 22/1982	Unknown
1179 F	2	8/18/80	6/22/83 6/10/85 6/22/87	9/23/87	1/1980 7/1981 1/1983 1/1984 5/1985 2/1986 4/1987	Functional collar
1180 F	Cub	8/18/80	--	8/20/80	1/1980	Presumed dead

Table 2. Continued.

Bear no./sex	Initial capture Age	Initial capture Date	Recaptures	Date of last location	Locations/ year	Status, fall 1987
1181 F	Cub	8/18/80	9/15/83 5/26/84 6/6/85	9/30/86	1/1980 1/1983 4/1984 6/1985 6/1986 1/1987	Dead at 1986/87 den
1232 M	4	9/18/83	--	9/18/83	1/1983	Unknown
1233 M	11	9/18/83	6/8/85 6/10/85	7/1/86	1/1983 1/1985 1/1986	Unknown, shed collar
1234 F	5	9/18/83	6/6/85	9/23/87	1/1983 1/1985 1/1986 2/1987	Functional collar
1261 M	10	6/22/83	--	6/22/83	1/1983	Unknown
1401 M	11	5/25/84	--	5/25/85	2/1984 2/1985	Unknown
1402 M	3	5/25/84	6/5/85 6/29/86		2/1985 1/1986	Dead, hunter kill
1403 F	3	5/25/84	6/5/85 7/1/86 5/25/87	9/23/87	2/1985 2/1986 5/1987	Functional collar
1404 M	3	5/25/84	6/5/85	11/8/86	1/1984 2/1985 2/1986	Unknown, shed collar
1405 M	7	5/26/84	6/20/87	9/23/87	1/1984 2/1987	Unknown, not collared
1406 F	10	9/13/84	--	9/13/84	1/1984	Dead, eaten by another bear
1407 F	10	9/14/84	6/18/87	9/23/87	1/1984 3/1985 3/1986 6/1987	Functional collar

Table 2. Continued.

Bear no./sex	Initial capture Age	Initial capture Date	Recaptures	Date of last location	Locations/ year	Status, fall 1987
1408 M	10	9/15/84	--	9/15/84	1/1984	Unknown, not collared
1409 M	Cub	9/16/84	--	9/16/84	1/1984	Presumed dead
1410 F	20	9/16/84	--	6/27/86	1/1984 3/1986	Unknown
1411 M	7	6/4/84	--	6/4/85	1/1985	Unknown, not collared
1412 M	15	6/4/85	--	5/5/86	1/1985 2/1986	Dead, hunter kill
1413 F	9	6/8/85	--	9/17/87	2/1985 3/1986 3/1987	Functional collar
1414 F	2	6/8/85	--	6/8/85	1/1985	Unknown, not collared
1415 F	15	9/5/85	--	9/5/85	1/1985	Unknown
1416 F	9	9/5/85	--	7/1/86	1/1985 3/1986 2/1987	Functional collar
1417 F	9	9/6/85	--	5/16/87	2/1986 1/1987	Functional collar
1418 M	17	9/6/85	--	9/6/85	1/1985	Unknown
1420 M	7	6/25/86	--	6/21/87	2/1986 1/1987	Functional collar
1421 M	13	6/25/86	--	9/23/87	1/1986 4/1987	Functional collar
1422 F	Cub	6/26/86	--	6/30/86	2/1986	Dead by 9/30/86
1423 M	Cub	6/26/86	--	6/30/86	2/1986	Dead by 9/30/86

Table 2. Continued.

Bear no./sex	Initial capture Age	Initial capture Date	Recaptures	Date of last location	Locations/ year	Status, fall 1987
1424 F	8	6/27/86	--	6/18/87	2/1986 1/1987	Functional collar
1425 F	7	6/29/86	--	9/23/87	3/1986 5/1987	Functional collar
1426 F	Cub	6/29/86	--	6/29/86	2/1986	Dead by 9/30/86
1427 M	Cub	6/29/86	--	6/29/86	2/1986	Dead by 9/30/86
1428 F	7	6/30/86	--	7/1/86	2/1986	Unknown
1434 M	0.5	6/18/87		9/23/87	3/1987	
1435 F	0.5	6/18/87		9/23/87	3/1987	
1436 F	0.5	6/18/87		6/18/87	1/1987	
1437 F	9[e]	6/19/87		9/17/87	3/1987	Functional collar
1438 F	ad	6/20/87		9/20/87	3/1987	Functional collar
1439 F	14[e]	6/20/87		9/17/87	2/1987	Functional collar
1440 F	14[e]	6/20/87		9/17/87	3/1987	Functional collar
1441 F	15[e]	6/20/87		9/17/87	3/1987	Functional collar
1442 M	0.5	6/20/87		9/17/87	3/1987	With mother 1441
1443 M	0.5	6/20/87		9/17/87	3/1987	With mother 1441
1444 M	0.5	6/20/87		9/17/87	3/1987	With mother 1441
1445 F	1	6/20/87		9/17/87	4/1987	Dead, killed by no. 1447
1446 M	15[e]	6/22/87		6/22/87	1/1987	Functional collar
1447 M	4[e]	6/23/87		9/17/87	2/1987	Functional collar
1448 M	8[e]	6/24/87		9/2/87	2/1987	Functional collar
1449 M	1	6/24/87		6/24/87	1/1987	Functional collar

Table 2. Continued.

Bear no./sex	Initial capture Age	Initial capture Date	Recaptures	Date of last location	Locations/ year	Status, fall 1987
1450 F	1	6/24/87		6/24/87	1/1987	Functional collar
1451 F	14[e]	6/24/87		6/24/87	1/987	Functional collar

[a] One of 1134's 3 offspring (either 1135, 1136, or 1137) disappeared between 9/16/77 and 5/18/78 and is presumed dead. We do not know, however, which 2 of the 3 young survived until 5/5/79.

Table 3. Reproductive history and litter size for female grizzly bears in the western Brooks Range, Alaska, 1977-87.[a]

Bear No.	Age[b] in 1987	Reproductive history and litter size[c]										
		1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
1085	23	B	B	NB?	NB	PD	--	--	--	--	--	--
1086	19	2yl	2 2y	2 3y/B	2c/PD	--	--	--	--	--	--	--
1087	10				NB	B	B	UN	B	B	2c/B	1c
1089	14	NB	B	2c	UN	UN	1c?	UN	UN	B	2c	1yl
1090	23	3yl	3 2y	3 3y/?B	UN	UN	PD	--	--	--	--	--
1092	18	1c	1 yl	1 2y	B	B	B	B	B?	B?	B?	B/D
1095	16	?B	?B	UN	UN	UN	UN	UN	UN	?/B	2+c	2 yl
1097	18	B	B	2c/B	2c/B	3cb	3yl	3 2y	3 3y	3 4y/B	B	B
1100	16	NB	B	2c/B	B	UN	UN	UN	UN	UN	UN	UN
1102	12	NB	NB	B	2c	B	1c	UN	UN	UN	UN	UN
1104	19	2 2y/B	1c/B	1c	1yl	1 2y/B	B	B	B	B	2cb	B/D
1105	17	B	B	1c/B	2c	2yl	2 2y	2 3y	2 4y	2 5y/B	B	1+c/B
1106	13	3c	2yl	2 2y/D								
1110	28	B	2c	2yl	2 2y	2 3y/PD	--	--	--	--	--	--
1111	24	2 4y/B	B	3c/B	UN	UN	UN	UN	UN	UN	UN	UN
1118	27	B	2c	2yl	UN	UN	UN	UN	UN/B?	B	B?	UN
1119	16	B	B	UN	UN	UN	UN	UN	UN	UN	UN	UN
1121	21	2c	2yl	2y/B	2c	UN	UN	UN	UN	B	1c/B	D
1127	28	B	UN	PD	--	--	--	--	--	--	--	--
1128	17	1yl/B	3c	UN	UN	UN	UN	UN	UN	UN	UN	UN
1130	26	2c	1yl	UN	UN	UN	PD	--	--	--	--	--
1134	20	3yl	2 2y	2-3y/B?	c?/B?	B	3c	B?D				
1138	26	2 2y, 1yl	2 3y, 1 2y	UN	PD	--	--	--	--	--	--	--
1139	18	UN/B	2c	2yl	2 2y/B	3c	3yl	2 2y	B	D		
1141	8					NB	B	UN	UN	B	1c	c?/B
1142	23	UN/PO	B	UN	UN	UN	1 2y?	UN	UN	UN	UN	UN
1143	18	2c	2yl	2 2y	UN	UN	UN	UN	UN	UN	UN	UN
1146	23	1-2yl	1 2y	1 3y/B	UN	UN	UN	UN	UN	UN	UN	UN
1149	13	NB	NB	UN	UN	UN	UN	UN	UN	UN	UN	B

Table 3. Continued.

Bear No.	Age[b] in 1987	Reproductive history and litter size[c]										
		1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
1151	12							NPO/NB	UN	UN	UN	UN
1153	11									NPO/B?	2c?	UN
1154	21	1c	1yl	1 2y	1 3y/B	2c	UN	UN	UN	UN	UN	UN
1156	15		B	UN	UN	UN	UN	UN	UN	UN	UN	B
1166	18		NPO	B?	B	3c	1yl	1 2y/B	B?	B	1c	UN
1167	15		UN/B	1c	B	B	B	UN	UN	UN	UN/B	3c
1169	17		UN	B	2c	B	2c	2yl	?/B	3c/B?	D	--
1174	7				NPO/NB	NB	NB	NB	NB	NB	B	B
1176	25				UN/B	2c	1yl	UN	2c	B	1c	1yl/B
1177	8							NPO/NB	NB	NB	B	B
1178	20				1 2y	1 3y/B	2cb/B	UN	UN	UN	UN	UN
1179	9									NPO/B	B	B
1181	7									NPO/B	2c/B?	D
1234	9[d]									B	2c	B
1403	6									NB	NPO/B	B
1406	11								D			
1407	13								NPO	B	2c/B	B
1410	23								B	UN	UN	UN
1413	11									NPO/B	3c/B?	UN
1415	16[d]									PO/B?	UN	UN
1416	10[d]								UN	B	1c/B?	3c
1417	10[d]								UN	NPO/B?	B	B
1424	9[d]									UN	PO/B	1c
1425	8[d]								UN	UN/B	2c/B?	B
1428	8[d]									UN	NPO/B	UN
1437	9[d]										B	1c
1438	--[d]								B	3c	3yl	3 2y
1439	14[d]								B	3c	3yl	3 2y
1440	14[d]											PO/B
1441	15[d]										B	3c
1451	14[d]										B?	PO/B

Table 2. Continued.

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[a] Designations are as follows: PO, evidence of previous offspring; NPO, no evidence of previous offspring; UM, unmarked; UN, unobserved; B, bred during that season; NB, did not breed; D, documented death; PD, presumed dead after intensive search of home range or because of advanced age; c, yl, 2y, 3y, female accompanied by cub, yearling, 2-year-old, 3-year-old young; c/B, cubs lost prior to breeding season, subsequent breeding by female; yl/B, 2y/B, etc., offspring weaned, then subsequent breeding by female.

[b] These ages were determined from cementum annuli during the year of capture, but the ages reported here include years subsequent to the bear's capture. However, in cases of bears known or presumed dead, the data listed represent their ages in the year of their death.

[c] Litter sizes should be viewed as minimum since mortality to other offspring may have occurred prior to observation.

[d] Estimate after close examination.

Table 4. Movement of grizzly bears from maternal home ranges subsequent to weaning, western Brooks Range, Alaska, 1977-87.

Maternal female no.	Bear No.	Sex	Year	Age and movement pattern
1086	1087	F	1979	3 yr when weaned; within maternal home range (MHR)
			1980-87	4-11 yr; within MHR
1086	1164	M	1979	3 yr when weaned; within MHR
			1980	4 yr; within MHR
			1981-83	5-7 yr; unknown
			1984-86	8-10 yr; home range included MHR
			1987	11 yr; killed by hunter 38 km W of MHR
1097	1402	M	1985	4 yr when weaned; moved approx. 30 km SE MHR
			1986	5 yr; home range approx. 40 km SE MHR; killed by hunter, September 1986
1097	1403	F	1985	4 yr when weaned; within MHR
			1986-87	5-6 yr; within MHR
1097	1404	M	1985	4 yr when weaned; located approx. 64 km W MHR by September 1985
			1986	5 yr; located 64 km WSW MHR October 1986
1104?	1101	M	1977	2 yr when weaned; established restricted home range; killed by adult male 6 October 1977
1104?	1102	F	1977	2 yr when weaned; established restricted home range
			1978-81	3-6 yr; continued using expanded home range which included 1977 range
			1982-86	7-11 yr; unknown
1104	1177	F	1981	2 yr when weaned
			1982-84	3-5 yr; within MHR
			1985	6 yr; moved 42 km N MHR, then returned
			1986-87	7-8 yr; within MHR
1105	1173	M	1985	5 yr when weaned; died in MHR fall 1985
1105	1174	F	1985	5 yr when weaned; remained within MHR
			1986-87	6-7 yr; within MHR

Table 4. Continued.

Maternal female no.	Bear No.	Sex	Year	Age and movement pattern
1138	1151	F	1978	3 yr when weaned; within MHR
			1979-82	4-7 yr; no sightings
			1983	8 yr; 14 km S original capture site
1138	1152	M	1978	3 yr when weaned; within MHR
			1979-84	4-7 yr; no sightings
			1985	9 yr; 32 km ENE original capture site
			1986-87	No sightings
1138	1153	F	1978	2 yr when weaned; within MHR
			1979-84	No sightings
			1985	9 yr; 42 km ENE original capture site
			1986-87	No sightings
1139	1140	M	1980	2 yr when weaned; no sightings
1139	1141	F	1980	2 yr when weaned; remained within MHR
			1981-82	3-4 yr; within MHR
			1983	5 yr; no sightings
			1984-87	6-9 yr; used MHR
1143	1144	F	1979	2 yr; with mother
			1980-84	3-7 yr; no sightings
			1985	8 yr; recapture within MHR
			1986	9 yr; killed by another bear, vicinity of MHR
1154	1155	M	1979	2 yr when weaned; no subsequent sighting
			1981	4 yr when killed by hunter 45 km W MHR
1178	1179	F	1981	3 yr when weaned; stayed within MHR
			1982	4 yr; within MHR
			1983	5 yr; moved 100 km S; denned
			1984	6 yr; 100 km S MHR; denned
			1985	7 yr; returned to MHR; then moved back 100 km S; denned
			1986	8 yr; remained 100 km S MHR; denned
			1987	9 yr; moved 100 km N to MHR by May; back to Noatak in June; return to MHR in September
Unknown	1133	M	1977	2 yr when weaned; observed 20 km S of capture site
			1978	3 yr; observed within 20 km capture site
			1979	4 yr; observed within 25 km capture site

Table 4. Continued.

Maternal female no.	Bear No.	Sex	Year	Age and movement pattern
Unknown	1147	M	1978	3 yr; 1 subsequent sighting 26 km SW capture site
			1979	4 yr; no sightings
			1980	5 yr; 12 km W original capture site
			1981-83	6-8 yr; no sightings
			1984	9 yr; 11 km E original capture site
			1985-87	10-12 yr; remained in vicinity of original capture site
Unknown	1149	F	1978	4 yr; 3 sightings in vicinity of capture site
			1987	13 yr; vicinity of original capture site
Unknown	1156	F	1978	6 yr
			1987	15 yr; vicinity of original capture site
Unknown	1157	M	1978-79	5-6 yr; 3 sightings in vicinity of capture site
			1987	15 yr; captured in vicinity of original capture site

Table 5. Observed presence or absence of marked grizzly bears in the western Brooks Range study area, by sex and age class, 1977-86. A = alive, in study area; M = moved from study area; D = dead; PD = presumed dead; FG = with mother in family group; Unk = unknown status.

Bear No.	Age first observed	Age[a] in 1987	Presence in population during year										
			1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Adult[b] Females													
1085	19	23	A	A	A	A	PD						
1086	16	19	A	A	A	A/PD							
1090	18	23	A	A	Unk	Unk	Unk	PD					
1092	8	18	A	A	A	A	A	A	A	A	A	A	A/D
1095	6	16	A	A	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	A
1097	8	18	A	A	A	A	A	A	A	A	A	A	A
1100	6	16	A	A	A	A	Unk	Unk	Unk	Unk	Unk	Unk	Unk
1104	9	19	A	A	A	A	A	A	A	A	A	A	A/D
1105	7	17	A	A	A	A	A	A	A	A	A	A	A/D
1106	11	13	A	A	D								
1110	24	28	A	A	A	A	PD						
1111	14	24	A	A	A	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk
1118	17	27	A	A	Unk	Unk	Unk	Unk	Unk	A	A	A	Unk
1119	6	16	A	A	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk
1121	11	21	A	A	A	A	Unk	Unk	Unk	A	A	A/D	
1127	26	28	A	Unk	PD								
1128	7	17	A	A	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk
1130	21	26	A	A	Unk	Unk	Unk	PD					
1134	14	20	A	A	A	A	A	A	A/D				
1138	23	26	A	A	Unk	PD							
1139	11	18		A	A	A	Unk	Unk	A	A	A/D		
1142	14	23		A	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk
1143	9	18		A	A	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk
1146	14	23		A	A	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk
1154	12	21		A	A	A	Unk	Unk	Unk	Unk	Unk	Unk	Unk
1156	6	16		A	Unk								A
1166	10	18			A	A	A	A	A	A	A	A	A

Table 5. Continued.

Bear No.	Age first observed	Age[a] in 1987	Presence in population during year										
			1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
1167	7	15			A	Unk	Unk	Unk	Unk	Unk	Unk	Unk	A
1169	11	17				A	A	A	A	A	A	A/D	
1176	18	25				A	A	A	A	A	A	A	A
1178	13	20				A	Unk	Unk	Unk	Unk	Unk	Unk	Unk
1406	10	10								A/D			
1407	10	13								A	A	A	A
1410	20	23								A	A	A	Unk
1413	9	11									A	A	A
1415	14[c]	16[c]									A	Unk	Unk
1416	8[c]	10[c]									A	A	A
1417	8[c]	10[c]									A	A	A
1424	8[c]	9[c]										A	A
1425	7[c]	8[c]										A	A
1428	7[c]	8[c]										A	Unk
1437	9[c]	9[c]											A
1438	ad	ad											A
1439	14[c]	14[c]											A
1440	14[c]	14[c]											A
1441	15[c]	15[c]											A
1451	14[c]	14[c]											A
Young-aged Females													
1087	1	11	FG	FG	A	A	Unk	Unk	A	A	A	A	A
1089	4	14	A	A	A	A	Unk	Unk	Unk	Unk	A	A	A
1093	Cub	8	FG	FG	FG	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk
1102	2	12	A	A	A	A	A	A	Unk	Unk	Unk	Unk	Unk
1113	4	14	FG	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk
1125	3	13	A	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk
1129	1	11	A	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk

Table 5. Continued.

Bear No.	Age first observed	Age[a] in 1987	Presence in population during year										
			1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
1132	2	12	A	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk
1136	1	11	FG	FG	FG	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk
1137	1	11	FG	FG	FG	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk
1141	Cub	9		FG	FG	A	A	A	Unk	Unk	A	A	A
1144	Cub	9	FG	FG	FG	Unk	Unk	Unk	Unk	Unk	A	A/D	
1145	2	11		FG	A	A	Unk	Unk	Unk	Unk	Unk	Unk	Unk
1149	4	13		A	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	A
1151	2	12	FG	FG	Unk	Unk	Unk	Unk	A	A	Unk	Unk	Unk
1153	1	11	FG	FG	Unk	Unk	Unk	Unk	Unk	Unk	A	A	A
1174	Cub	7				FG	FG	FG	FG	FG	A	A	A
1177	Cub	8			FG	FG	A	A	A	A	A	A	A
1179	2	9				FG	A	A	A/M	M	A/M	M	A
1181	Cub	7				FG	FG	Unk	A	A	A	A	A/D
1234	5[c]	9[c]							A	Unk	A	A	A
1403	Cub	6					FG	FG	FG	FG	A	A	A
1414	2	4									A	A	Unk
1445	1	1											D
1449	1	1											A
Adult[b] Male													
1082	13	23	A	A	A	A	A	Unk	Unk	Unk	Unk	Unk	A
1083	7	17	A	A	A	A	A	Unk	Unk	A	A	A	A
1084	7	14	A	Unk	Unk	Unk	Unk	Unk	Unk	M/D			
1091	19	21	A	A	A/D								
1096	7	17	A	A	A	A	A	Unk	Unk	Unk	Unk	Unk	PD
1099	10	16	A	A	A	A	A	Unk	A	A/ M/D			
1103	8	18	A	A	Unk	Unk	Unk	Unk	Unk	Unk	A	A	A
1114	16	26	A	A	A	Unk	Unk	Unk	Unk	Unk	Unk	Unk	PD
1117	19	26	A	Unk	Unk	Unk	Unk	Unk	Unk	PD			

Table 5. Continued.

Bear No.	Age first observed	Age[a] in 1987	Presence in population during year										
			1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
1120	16	26	A	A	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	PD
1124	17	26	A	Unk	Unk	Unk	Unk	Unk	Unk	A	A	PD	
1126	13	23	A	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk
1131	8	18	A	A	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk
1148	6	15		A	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk
1159	10	19		A	Unk	A	Unk	Unk	A	Unk	Unk	Unk	Unk
1172	11	18				A	Unk	Unk	Unk	A	A	Unk	Unk
1175	7	14				A	Unk	Unk	Unk	Unk	Unk	Unk	Unk
1233	11[c]	15[c]							A	Unk	A	A	Unk
1261	10	14							A	Unk	Unk	Unk	Unk
1401	11	14								A	A	Unk	Unk
1405	7	10								A	Unk	Unk	A
1408	10	13								A	Unk	Unk	Unk
1411	7[c]	9[c]									A	Unk	Unk
1412	15[c]	16[c]									A	A/M/D	
1418	17[c]	19[c]									A	Unk	Unk
1420	7[c]	9[c]										A	A
1421	13[c]	15[c]										A	A
1446	15[c]	15[c]											A
1448	8[c]	8[c]											A
Young-aged Males													
1081	5	15	A	Unk	A	A	A	A	A	A	A	A	A
1094	4	10	A	Unk	Unk	Unk	Unk	Unk	M/D				
1098	3	13	A	A	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk
1101	2	2	A/D										
1112	4	14	A	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk
1115	5	15	A	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk
1116	5	15	A	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk

Table 5. Continued.

Bear No.	Age first observed	Age[a] in 1987	Presence in population during year										
			1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
1133	2	9	A	A	A	Unk	Unk	Unk	M/D				
1147	3	12		A	Unk	A	Unk	Unk	Unk	A	A	A	A
1148	6	15		A	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk
1150	5	14		A	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk
1152	2	11	FG	A	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk	Unk
1155	Cub	4	FG	FG	FG	Unk	M/D						
1157	5	14		A	A	Unk	Unk	Unk	Unk	Unk	Unk	Unk	A
1164	1	11	FG	FG	A	A	Unk	Unk	Unk	A	A	A	D
1165	3	11			A	A	Unk	Unk	Unk	A	A	A	A
1173	Cub	5				FG	FG	FG	FG	FG	A/D		
1232	4	8							A	Unk	Unk	Unk	Unk
1402	Cub	5				FG	FG	FG	FG	FG	A/M	M/D	
1404	Cub	6				FG	FG	FG	FG	FG	A/M	M	Unk
1447	4[c]	4[c]	A										A
1450	1	1	A										A

[a] Age determined from cementum annuli. Age reported represents age in 1986 or in year of death or presumed death.

[b] Adult bears were 6 or more years old when initially captured.

[c] Estimate after close examination.