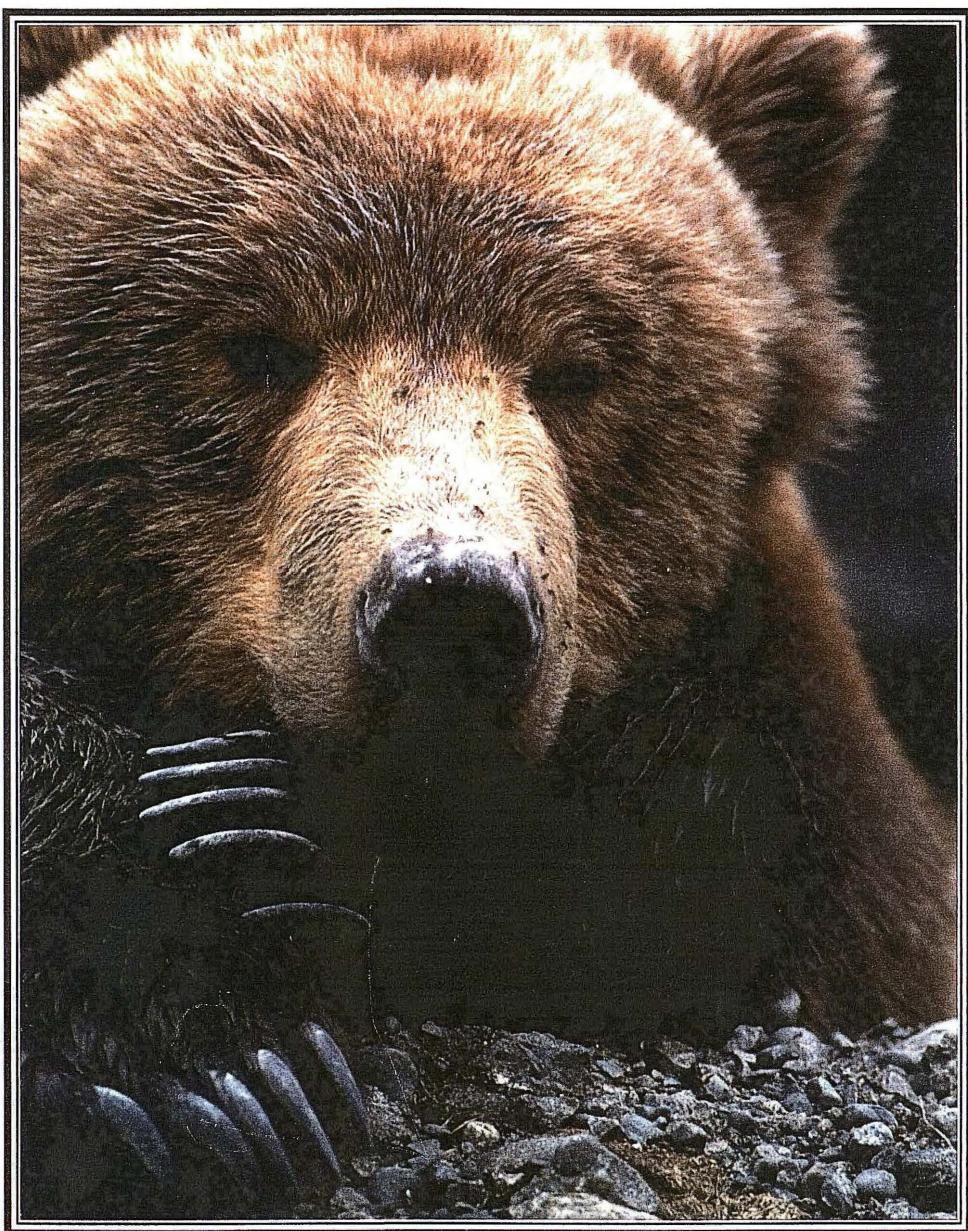


**Alaska Department of Fish and Game
Division of Wildlife Conservation**

**Federal Aid in Wildlife Restoration
Research Progress Report
1 July 1996- 30 June 1997**

**Impacts of Heavy Hunting Pressure on the
Density and Demographics of Brown Bear Populations
in Southcentral Alaska**

Sterling D. Miller



Ken Whitten

**Grant W-24-5
Study 4.26
December 1997**

STATE OF ALASKA
Tony Knowles, Governor

DEPARTMENT OF FISH AND GAME
Frank Rue, Commissioner

DIVISION OF WILDLIFE CONSERVATION
Wayne L. Regelin, Director

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RESEARCH PROGRESS REPORT

STATE: ALASKA STUDY No: 4.26
COOPERATORS: JEFF SELENGER
GRANT NO: W-24-5
STUDY TITLE: Impacts of Heavy Hunting Pressure on the Density and Demographics of Brown Bear Populations in Southcentral Alaska
PERIOD: 1 July 1996 to 30 June 1997

SUMMARY

Brown bear (*Ursus arctos*) populations have been exposed to intensive harvest pressure in Alaska's Game Management Unit (GMU) 13. Since 1980 Alaska's Board of Game has adopted varying kinds of liberal brown bear hunting regulations in Unit 13. The objective for these regulations was to reduce bear abundance in the hope this would increase moose (*Alces alces*) calf survivorship and numbers of moose available for hunters. This predator reduction effort was accelerated, starting fall 1995 with adoption of the most liberal brown bear hunting regulations in Alaska for Unit 13. These new regulations were adopted primarily in response to the state's new intensive management law (AS 16.05.255): "An act relating to the powers of the Board of Game and to intensive management of big game to achieve higher sustained yield for human harvest." The primary objective of the current brown bear research is to document changes in abundance, composition, and dynamics of brown bear populations in the Unit 13A study area where moose populations are being studied by Testa (1997).

In this study bear populations are evaluated in a newly initiated study in Subunit 13A designed to document trends in bear abundance in an area where intensive moose studies are ongoing. The moose studies are also to evaluate effects of any changes in bear abundance on moose calf survivorship and moose abundance. This bear project also includes evaluations of changes in bear abundance in a portion of Subunit 13E where bear studies have been ongoing since 1980 (Miller 1997).

During spring 1997, 14 unmarked females and 11 unmarked males were captured and marked in Unit 13A. Sex ratio at capture during 1996 and 1997 indicates a preponderance of females in Unit 13A similar to that found during recent studies in Unit 13E. In a sample of captured bears ≥ 5 years old, there were 50 males/100 females during the last 2 years in Unit 13A. Between 1993 and 1995 in Unit 13E, we captured 42.9 males/100 females ≥ 5 years old; this was a significant decline from the proportion of males in the population of captured bears a decade earlier in this same area (Miller 1997). The decline in males in Unit 13E was attributed to intensive hunting pressure for brown bears. Based on preliminary capture data, probably a similar shift in population composition away from males is occurring in Unit 13A.

Survivorship of radiomarked bears ≥ 2 in Unit 13E was calculated for the period 1980–1995. Survivorship for radiomarked females was 0.92 (95% CI = 0.88–0.94). Survivorship for

radiomarked males during this period was 0.80 (95% CI = 0.68–0.92). Survivorship for adult (≥ 5) females during this period was 0.92 (0.88–0.95). We also calculated minimum survivorship rates by including as dead bears those animals likely to have been killed by hunters. Minimum survivorship calculated in this way was 0.89 (0.85–0.93) for females and 0.76 (0.63–0.88) for males. Mortality rate from natural (nonhuman) causes was very low (survivorship = 0.98 for females > 5) from 1980 to 1995.

Although not enough data have accumulated to show significant differences, available data are consistent with a conclusion that the “intensive management” regulations in effect during 1996–1997 have increased mortalities of radiomarked females in Unit 13.

Key words: Alaska, brown bear, cub survivorship, grizzly bear, hunting impacts, intensive management, mortality rate, population composition, survivorship rates, Unit 13, *Ursus arctos*.

CONTENTS

SUMMARY	i
BACKGROUND.....	1
OBJECTIVES.....	2
METHODS.....	2
RESULTS	3
CAPTURES AND SEX RATIO IN CAPTURED BEARS.....	3
COMPARISONS OF BEARS SEEN PER HOUR OF SEARCH EFFORT.....	3
SURVIVAL RATES OF RADIOMARKED BEARS	4
ACKNOWLEDGMENTS	6
LITERATURE CITED	6
FIGURES.....	9
TABLES	11
APPENDIX A. Listing of Mortalities to Brown Bears Marked in Gmu 13, 1980-1997	34
APPENDIX B. Listing of Radiomarked Bears in Subunit 13E, 1980-1997, Used To Estimate Survivorship Rates.....	38
APPENDIX C. Listing of Radiomarked Bears in Subunit 13A, 1996-1997, Used To Estimate Survivorship Rates.....	52

BACKGROUND

The predator-prey research conducted in Unit 13 during the late 1970s and early 1980s indicated brown bears were killing many moose calves and that an experimental reduction in bear densities increased calf survivorship (Ballard and Larsen 1987, Ballard and Miller 1990). This research was completed in the early stages of the moose population's recovery from the severe winters of the early 1970s (Ballard et al. 1991). These calf mortality study results led the Alaska Board of Game to increase opportunity to hunt brown bears in Unit 13 starting in 1980 with initiation of a spring hunting season. This and subsequent liberalizations of seasons, bag limits, and resident tag fee requirements were designed to decrease the number of bears in Unit 13 in the expectation this would increase the number of moose available for hunters.

In fall 1995 still more liberal bear hunting regulations were implemented in Unit 13. Regulations adopted by the Board of Game changed the bag limit from 1 every 4 years (the limit in most portions of Alaska) to 1 every year and eliminated the need for resident brown bear hunters in Unit 13 to purchase a \$25 tag. These regulations opened the fall hunting season on August 10 (instead of September 1) to encourage August caribou hunters to take bears. The intent of these regulations was to further augment brown bear harvests by encouraging incidental and nondiscriminatory harvests, thereby causing a reduction in bear abundance which would lead to increased moose survivorship and a corresponding increase in harvests of moose by hunters. Effects of liberalized bear hunting seasons on moose populations is being evaluated in ongoing moose studies in Unit 13A (Testa 1996, 1997).

In 1986 for this project, we began evaluating the response of the brown bear population to liberalized regulations and increasing harvests in Unit 13. The first phase of this project occurred in Subunit 13E in the northern portion of Unit 13. A brown bear density estimate was completed

in 1995 and compared with a 1985 estimate in the same area. Contrary to expectations (Miller 1993a), this work indicated no decline in bear density in spite of heavy hunting pressure. However, a significant shift in population composition had occurred with fewer males present in the 1995 population than in the 1985 population (Miller 1997). The number of males/100 females (all ages) changed from 70 to 21 between 1985 and 1995 ($P = 0.03$) (weighted snapshot approach) (Miller 1997). The primary objective of the current brown bear research is to document changes in abundance, composition, and dynamics of brown bear populations in the Unit 13A study area where moose populations are being studied by Testa (1997).

My studies in a heavily hunted portion of Unit 13 complement studies in Unit 20A where brown bear populations were intentionally reduced and are now being allowed to recover (Reynolds 1990, 1995). It also complements studies in Unit 9 where bear populations have recovered to desired levels following heavy harvests in the late 1960s (Sellers and Miller 1990, Sellers 1994). The work in Unit 13 correlates with work in Minnesota where a heavily hunted black bear (*Ursus americanus*) population was found to withstand heavier than expected harvests by hunters (Kontio et al. 1997).

Miller (1997) presented a final report on the results of recent brown bear studies in Unit 13. The present report summarizes work accomplished in the year following this final report.

OBJECTIVES

Objectives for this study were to: 1) document changes in density and in the sex and age composition in a brown bear population subjected to heavy rates of harvest by hunters; 2) monitor changes in individual bear reproductive performance and survivorship in a population subjected to heavy harvest rates; and 3) investigate the hypothesis that brown bear cub survivorship is inversely related to hunting pressure or the proportion of adult males in the population.

METHODS

Bears were captured using standard helicopter darting techniques (Miller 1997). Aircraft pilots searching for bears to capture kept track of their active search time (excludes commuting time and circling bears before capture to verify bears were radiomarked). The same 2 aircraft and pilots were used to search for bears in 1997 as during 1996 so comparison data were obtained on the number of independent bears seen/hour of search effort (Miller 1997). For these comparisons an independent bear was defined as any bear seen, except for offspring still accompanying their mothers. Both members of a female and male mating pair or a pair of siblings recently separated from their mother, for example, would be counted as an independent bear. A female accompanied by 3 two-year-old offspring, however, would be counted as an observation of 1 independent bear. Bears located as a consequence of radiotracking were not included as sightings of independent bears. Accordingly, unmarked bears accompanying a marked bear located by radiotracking was not counted as a sighting of an independent bear.

Survivorship of marked bears (both radiomarked and without radiomarks) has been previously reported by Miller (1997:Table 3). In this report we calculate survivorship based just on radiomarked bears using the method of Pollock et al. (1989) which permits staggered entries when new

animals are marked and censoring when radiomarked individuals shed their transmitters, animals disappear, or transmitters are removed. When animals were censored, I used the date of last location as the date of the censor. Mortalities included radiomarked animals shot by hunters, natural mortalities, and research-related mortalities. If a bear died in its den, death was assumed to occur in December. Survivorship was calculated for bears ≥ 2 years old. A second, maximum, mortality rate was also calculated that included animals (9 females, 2 males) that may have been shot but never reported. These possible human-suspected mortalities included animals with radio-collars that should have had adequate battery life when the bears disappeared (usually during an open hunting season) and were not yet recaptured.

RESULTS

CAPTURES AND SEX RATIO IN CAPTURED BEARS

Capture efforts were conducted during May 16–21. In the 13A study area during this period, 14 unmarked females and 11 unmarked males were captured (Table 1). During the previous year in this 13A study area, 20 unmarked females and 15 unmarked males were captured during the period May 15–21, 1996 (Table 1). During captures in 1997 and 1998, 36 bears ≤ 5 years old were captured, 24 females and 12 males. This is a ratio of 50 males/100 females in the population of bears ≤ 5 years old at time of capture. Comparison data based on captures in other study areas was presented by Miller (1997: Table 9). In the Mid-Su study area in Unit 13E, there were 75 males/100 females captured during 1980–83 compared to 42.9 males/100 females captured during 1993–95. During this latter period in this 13E study area, a significant decline in the proportion of males in the population occurred between 1985 and 1995 (Miller 1997). The sex ratio in the data based on captures of bears ≤ 5 years old in the 13A study area indicates a similar imbalance in population sex ratio. This will be tested during the density estimate scheduled for spring 1998.

In a population with a 50:50 sex ratio, data on population sex ratio obtained by searching and capturing bears in a defined study area should indicate more males than females. This is because males have larger home ranges so males from a wider area will overlap the search area. Correspondingly, the overall population sex ratio is probably even more skewed toward females than indicated in the data presented above.

In addition to these new captures during spring 1997 in Subunit 13A, we recaptured 5 bears to evaluate or expand their radio collars. We also recaptured 5 bears in the Unit 13E study area to replace radio collars. No mortalities occurred during the captures in 1997.

COMPARISONS OF BEARS SEEN PER HOUR OF SEARCH EFFORT

A major expense of the CMR density estimation technique (Miller et al. 1997) is the cost of capturing and marking bears. If methods could be found to track changes in bear abundance without the need to mark bears, significant savings could be realized. Available data were analyzed to evaluate the potential to utilize replicated CMR fixed-wing search techniques to estimate bear density in areas without the presence of marked bears. Two sets of data were utilized to examine this potential. The first used the relationship between bears/hr and estimated density obtained during CMR density estimation procedures. The second approach used data from search efforts to capture unmarked bears in 1996 and 1997 in Unit 13A. The second approach is

based on the presumption that consistency observed in bears seen/hour supports the potential of using bear/hr during CMR-like searches to estimate density and trends in abundance.

A regression was plotted to illustrate the relationship between independent bears seen per hour of search and density (Fig. 1). This relationship was based on 3 data points obtained during CMR density estimates in the MIDSU (Su-hydro) area (1985 and 1995) and in the UPSU (Denali Highway) area in 1987. These points are based on complete searches of quadrats at a search intensity of approximately 1 minute/km².

This relationship was used to make a rough estimate of density in the Unit 13A study area based on independent bears seen per hour during the 7 days of effort to find bears for capture during spring 1996 and the 7 days in spring 1997 (Table 2, Fig. 1). During the capture efforts in each of these 2 years, the fixed-wing pilots found 0.5 independent bears/hour (Table 2). These data include only the time spent actively searching for bears (Table 2).

Based on bears/hour seen during the density estimates in Unit 13, this location frequency resulted in a density estimate of 32 independent bears/1,000 km² (Fig. 1). The data included in this analysis did not include bears seen as a consequence of radiotracking bears and offspring accompanying their mothers (dependent bears).

The relationship based on sighting rates during density estimates overestimates bear density in the Unit 13A search area, based on sighting rates during capture efforts. As a result, the density estimate during the scheduled Unit 13A density estimate in 1998 should be <32 independent bears/1,000 km². The search pattern used during the capture effort in Unit 13A should have a relatively higher sighting rate because:

- searches to find bears for captures involve more of a high-grading approach than the complete searches of a study area used during CMR density estimates,
- the habitat in the 13A study area is relatively more open than habitats in either the MIDSU or UPSU habitats, and
- the pilots used during the capture efforts in the 13A study area (Harley and Chuck McMahon) were among those I consider most skilled at finding bears (pilot Jerry Lee is in the same category). These same fixed-wing pilots, along with some less skilled at finding bears, participated in the CMR density estimates. The consequence of this is a partial dilution of the observation efficiency during the CMR density estimates by inclusion, in the CMR statistics, of pilots less skilled at finding bears.

SURVIVAL RATES OF RADIOMARKED BEARS

Survival rates of radiomarked female and male brown bears in Subunit 13E are presented in Table 3. During 1980–1995, survival rate for females ≥2 years old was 0.91 (95% CI = 0.88–0.95) (Table 3d) and for males it was 0.80 (95% CI = 0.67–0.92) (Table 3h).

Data for the period 1980–1995 were based on 298 bear-years for radiomarked females and 63 for males (Appendix B). Mortalities during this period to radiomarked females included 16 bears shot

by hunters and 6 bears that died of apparent natural causes or capture-related mortalities (Appendix B). Mortalities to radiomarked males in Subunit 13E during 1980–1995 totaled 6 shot by hunters and 3 apparent natural mortalities or capture-related deaths (Appendix B).

In addition to known mortalities, a number of radiomarked bears disappeared prematurely (prior to expected battery failure). When this occurred, the missing bears were censored from the data reported in Table 3. However, some of these bears were probably shot by hunters and not reported. Instances of a lost signal from a bear's being shot permitted calculation of a "minimum" survivorship rate (Table 4). Such suspected mortalities occurred when the batteries were premature to failure, when the bear did not appear in the harvest data for a subsequent year, and, in most instances, when the bear disappeared during an open hunting season. Inclusion of these possible missing bears as mortalities instead of as censored animals added 11 additional females and 2 additional males in 13E during 1980–1995. The minimum survivorship rate calculated in this way was 0.89 (95% CI = 0.85–0.93) for females (Table 4d) and 0.76 (95% CI = 0.62–0.88) for males (Table 4h). Inclusion of these possible mortalities did not result in significant changes from the results reported for just the bears known to have died.

Survivorship rates were also calculated for adult bears (≥ 5 years old) in Subunit 13E (Table 5). Survivorship for adult females during 1980–1995 was 0.92 (Table 5d), about the same as for females ≥ 2 during the same period (Table 3d). The similarity of these measures reflects the paucity of data from radiomarked subadults; there were 298 bear-years evaluated for females ≥ 2 compared to 257 for bears ≥ 5 (Tables 3d, 5d).

A new radiotracking study was begun in Subunit 13A in 1996. Because of small samples sizes, survivorship data from this study have large confidence intervals (Table 6). During 1996–1997, survivorship of radiomarked females in 13A was 0.86 (Table 6a) compared to 0.79 in 13E (Table 3e). Because of the large confidence intervals, these differences are not significant. However, these values are consistent with the interpretation that bear harvests in Subunit 13E are the most intensive in GMU 13 (Miller 1997) and in central portions of Alaska (Miller 1993b).

In 20 years of studying radiomarked female brown bears, I found only 4 cases of mortality that I felt fairly confident could be attributed to nonhuman causes.

1. Female 331 was marked in May 1981 and was tracked regularly until June 29, 1982. She was found dead, some distance from her last location, on August 3, 1982; it appeared she had been dead for some time.
2. Female was marked in May 1981 and located regularly until she entered her den in 1988. Her collar was last replaced in June 1987. This bear was missed during summer and fall 1988 but located in a collapsed den in July 1989. I originally thought the collar was shed but when retrieved, in October 1989, we found it in a collapsed den. We dug far enough into the den to verify that the bear was still in there with her collar (we dug until we hit the carcass). I attribute this to mortality from a collapsed den during the winter of 1988/89 when she was 13 years old, but it is possible the bear was wounded before entering the den.
3. Female 423 was marked at age 21 in 1984 and tracked continuously through 1993 when she was 30 years old upon entering her den. She last separated from a litter of 2 years olds in 1986, had a COY in 1987 which she lost. She had no other COY subsequently although she

was frequently seen with males in the spring. In the spring of 1994, I tracked her collar to the edge of the Susitna River but was never able to retrieve the collar which was, apparently, hung up on the river bottom some 10 feet offshore in exceptionally swift current. Although I never found the carcass, I believe this bear probably died of old age in the spring of 1994 and her carcass washed into the Susitna River during spring floods.

4. Female 281 first marked in April 1980. She was 18 years old and had a litter of newborn cubs at the end of July 1995 when last seen alive. Her carcass was found buried under 2 tall spruce trees. I interpret this mortality as most likely occurring when this female was defending her cubs, which had retreated up the spruce trees, from an attacking brown bear. The way her carcass was buried was typical of the way a bear caches its kill. Little meat had been eaten from the bear.

Overall survivorship (including only probable natural mortality) during 1980–1995 for females ≥ 2 was 0.99 (0.97–1) (Table 7a). For females ≥ 5 , survivorship was 0.98 (0.97–1.0) (Table 7b).

Intensive management regulations have been in effect in Unit 13 during regulatory years 1995/1996 and 1996/1997. During these years of intensive management regulations, the apparent trend in survival of females in Subunit 13E is downward (Fig. 2). Because of large confidence intervals, these differences are not significant; however, they are consistent with an interpretation of an increased mortality rate for females since initiation of the intensive management regulations.

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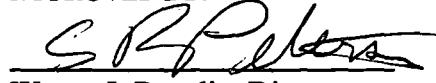
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RELATIONSHIP BETWEEN BEARS SEEN/HOUR AND
DENSITY IN THREE GMU 13E STUDIES

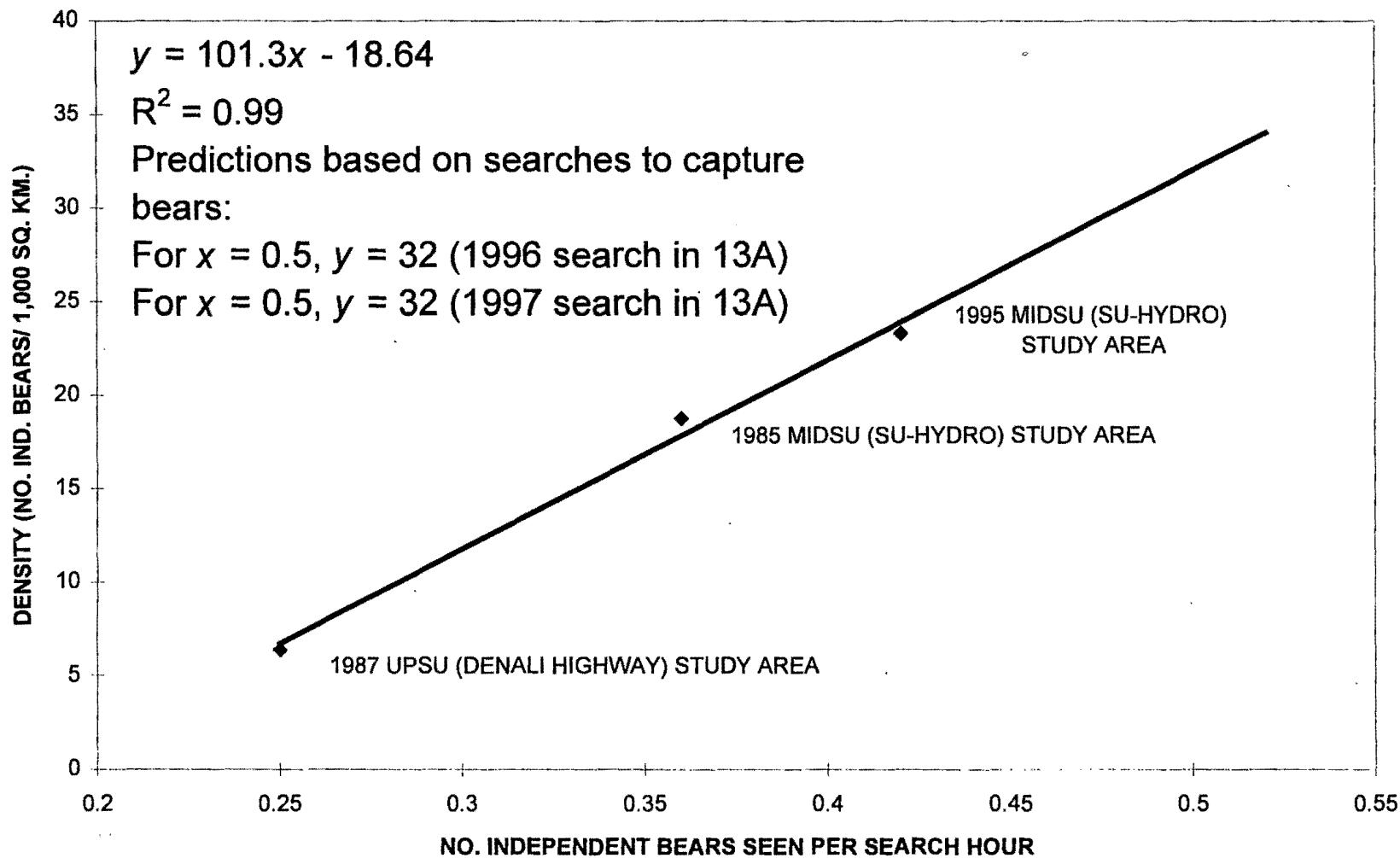


Fig. 1. Relationship between number of independent bears seen per hour of search effort during CMR density estimation procedures in GMU 13 and estimated density. This relationship was used to "predict" density based on bears/hour seen during 1996 and 1997 searches to mark bears in the 13A study area.

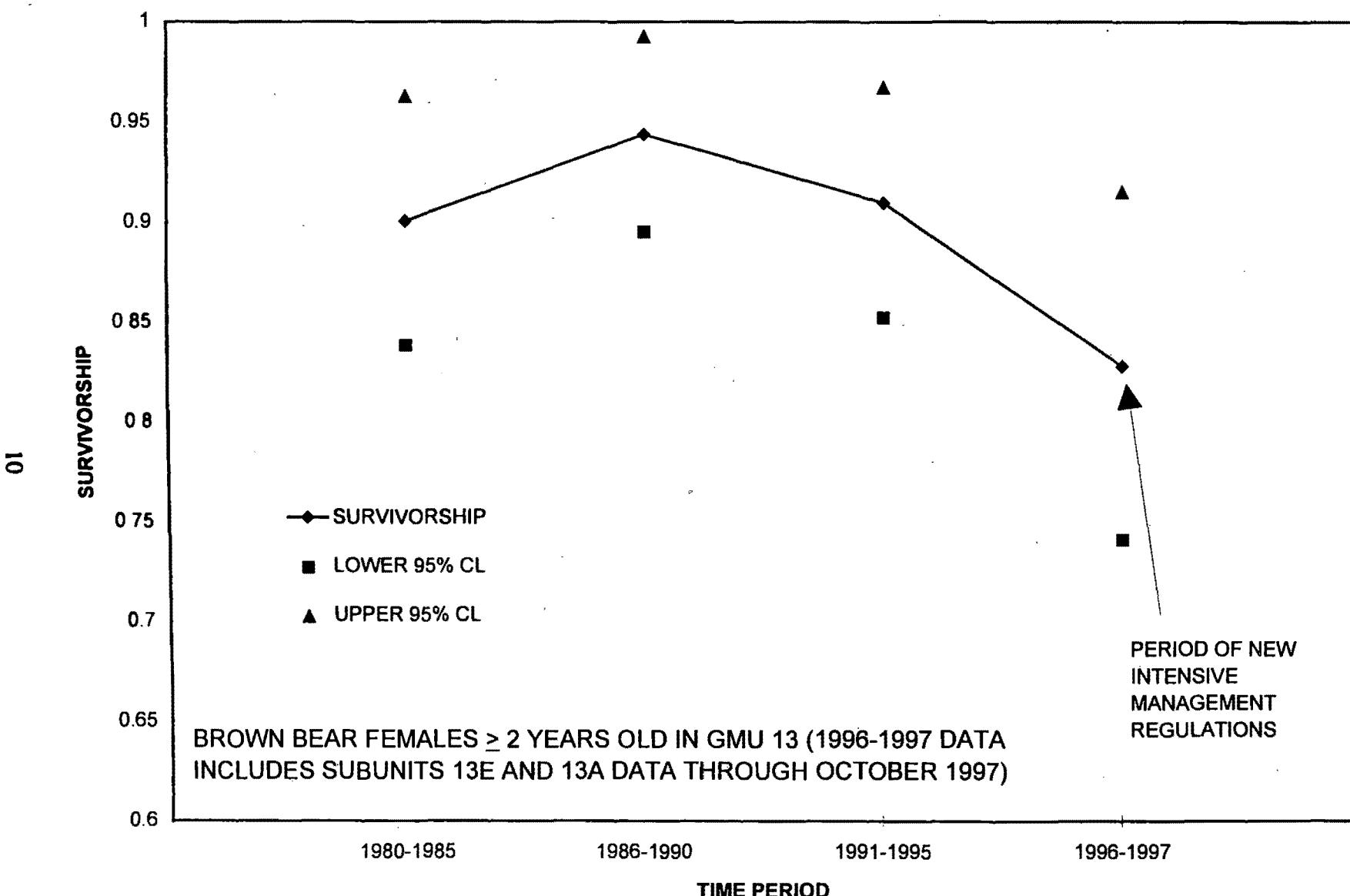


Fig. 2. Survivorship rates of radiomarked brown bear females \geq 2 years old in GMU 13 during different periods. Indicated survivorship is the maximum rate as missing bears were treated as censored even though some of these were suspected to have been shot. All radiomarked bears were in Subunit 13E before 1996; for 1996–1997, data from new intensive management study in Subunit 13A was combined with data from 13E. Survivorship calculations were based on Kaplan-Meyer approach (Pollock et al. 1989).

Table 1 Status of brown bears captured in GMU 13 studies 1980–June 1997.

<u>Capture</u>							
Tattoo	Sex	Age**	Wt.	Date	Serial #	Ear Tags	Comments
(277)	F	10.5	225*	4/10/80		1065/1066	w/2ylgs, not marked, collar shed 80/81 den capture mortality
(278)	M	9.5	375*	4/19/80		--	capture mortality
(279)	M	9.5	400*	4/20/80		1100/1099	collar shed by 6/12/80, recaptured 5/18/83, shot 9/84
280	M	5.5	300*	4/20/80		1097/1098	recollar next spring, recaptured 5/94
(214)	M	4.5	300*	4/22/80		1072/1071	collar shed 9/9/80, recaptured 6/85, shot fall 91
281	F	3.5	250*	4/22/80		16175/15950	not turgid, see 5/81 & 5/94 recaptures
(282)	M	4.5	325*	4/22/80		1079/1080	see 6/82 recapture, shot spring 92
283	F	12.5	280*	4/22/80		690/689	w/2@ 2.5: 284 and 285
(284)	M	2.5	180*	4/22/80		(1074/1073)	w/283 see 5/5/81 recapture
285	M	2.5	180*	4/22/80		687/688	w/283
286	M	3.5	264	5/1/80		1081/1082	
(292)	F	3.5	174	5/2/80		1322/1321	Turgid, shot 5/89
(293)	M	(3.5)	277	5/2/80		1116/1115	recaptured 8/81, 5/83, shot spring 85
(294)	M	10.5	607	5/2/80		--	died on 8/6/81 recapture
(295)	M	12.5	589	5/3/80		1303/1304	collar shed by 5/4/80
299	F	13.5	285	5/4/80		1109/1110	w/2 ylgs, turgid, recaptured 5/7/81
(297)	M	1.5	65	5/4/80		(1301/1302)	w/299, shot by hunter on 9/18/81
298	M	1.5	65	5/4/80		1318/1317	w/299
(306)	F	3.5	163	5/4/80		1319/1320	turgid, see 5/13/93 recapture, shot 9/95
(308A)	M	6.5	480	5/6/80		(1126/1125)	shot 9/83
(308B)	F	5.5	240	5/6/80		1096/1095	turgid (?) - died on 8/6/81 recapture
(309)	M	12.5	600	5/6/80		(1117/1118)	collar shed by 5/14/80, recaptured 6/85, shot spring 90
(312)	F	10.5	319	5/7/80		1312/1311	w/311
(311)	M	2.5	227	5/7/80		--	w/312, shot on 9/16/80
313	F	9.5	286	5/7/80		1119/1120	w/314 @ 2.5
314	F	2.5	154	5/7/80		(1049/1050)	w/313, recaptured 6/1/85, 6/87
(315)	F	2.5	90*	5/7/80		(1127/1128)	alone, recaptured 5/18/83, shot 9/86
(284 #2)	M	3.5	125	5/5/81		(1074/1073)	near 283 w/2c, shot by hunter on 5/18/81
(331)	F	6.5	172	5/5/81		(1296/1295)	w/332 and 333, died August 1982
(332)	M	2.5	79	5/5/81		(1215/1216)	w/331 and 333, shot by hunter on 9/5/82
(333)	M	2.5	67	5/5/81		(1240/1239)	w/331 and 332, shot by hunter on 9/3/81
334	F	10.5	325	5/5/81		1292/1291	estrus, missing in 1982, recaptured 5/96
335	F	3.5	194	5/5/81		(1220/1219)	w/334?, recaptured 5/14/83
281 #2	F	4.5	-	5/5/81		1201/1202	estrus? recaptured 5/15/83
283 #2	F	13.5	261	5/6/81		1089/1090	w/338 and 339 @ 0, recaptured 5/14/83
338	F	0.5	12	5/6/81		1224/1223	w/283, sex switched to female
(339)	M	(0.5)	13	5/6/81		1222/1221	w/283, recaptured 6/85, sex switched to male; shot 9/85
312 #2	F	11.5	280	5/6/81		1300/1299	w/2c @ 0.5 (not captured), recaptured 5/14/83
313 #2	F	10.5	284	5/6/81		1120/1119	w/336, recaptured 5/14/83

continued

Table 1 Continued

Tattoo	Sex	Age**	Wt.	Capture		Serial #	Ear Tags	Comments
				Date				
336	F	0.5	—	5/6/81		1237/1238	w/313, not drugged (abandoned)	
(337)	F	13.5	321	5/6/81		1294/1293	w/3c reunited on 5/9/81, recaptured 5/14/83, 5/94, died '96	
(340)	F	3.5	190	5/6/81		1225/1218	not estrus, recaptured 5/15/83, Rt. eartag replaced 5/90	
280 #2	M	6.5	394	5/7/81		1097/1267	w/F341, recaptured 5/16/83	
(341)	F	6.5	224	5/7/81		(1208/1207)	w/M280, collar failed, recaptured 6/82; died in 88/89 den	
299#2	F	14.5	291	5/7/81		1109/1110	w/2@2.5 (297 & 298 - not recaptured), recaptured 8/81	
(342A)	M	2.5	220	5/7/81		1228/1227	alone, see 5/25/82 recapture, died 7/84	
344	F	5.5	—	5/8/81		1204/1203	w/2 cubes subsequently, recaptured 5/14/83	
(345)	M	7.5	495	5/8/81		—	capture mortality	
(308B) #2	F	6.8	—	8/6/81		—	recapture mortality	
299#3	F	14.8	—	8/6/81		1109/1110	collar replaced, recaptured 5/18/81	
(293 #2)	M	(4.8)	—	8/6/81		1115/1116	collar replaced, recaptured 5/18/83, shot spring 85	
(294 #2)	M	11.8	—	8/6/81		—	recapture mortality	
347	M	14.8	500*	8/6/81		(1234/1233)	collar shed 9/81, recaptured 6/9/85	
(342A #2)	M	3.5	250*	5/25/82		1228/1227	collar replaced, died 7/84	
(373)	M	9.5	450*	6/11/82		—	no tattoo, w/G283 (F), collar shed 6/83	
(282#2)	M	6.5	350*	6/11/82		(529/1643)	recap. marked bear, shed collar, recap. 5/84 & 6/86, shot sp. 92	
(379)	F	(5.5)	300*	6/11/82		(1595/1585)	w/2@c, Downstream study, shot 9/85	
(380)	F	15.5	275*	6/12/82		(1588/532)	w/2@1, not captured, shot 9/83	
(381)	F	(3.5)	200*	6/12/82		(533/1592)	alone, recaptured 5/18/84 & 6/86, shot 9/89	
313 #3	F	12.5	300*	5/15/83	6259	same	w/2@1	
(382)	M	1.5	66	5/14/83	12546	2135/2134	w/313 and 383, recaptured 5/18/84, implant, shot 5/9	
(383)	F	1.5	53	5/14/83	12542	(2490/2491)	w/313 and 382, died unknown causes, implant	
283#3	F	15.5	—	5/14/83	(6340)	same	w/cub #3, recaptured 6/86	
(003)	F	0.5	—	5/14/83	1024	(1360/1359)	w/283, special cub collar, no tattoo, cub eaten	
337#2	F	15.5	—	5/14/83	6309	same	w/385@2	
(312 #2)	F	13.5	350*	5/14/83	(6342)	(1299/1300)	w/386@2, died 5/16/84	
(385)	F	2*	60	5/14/83	(15210/15248)	1695/1694	linplant radio & collar w/ breakaway, recapt. 6/85, shot 6/85	
(386)	M	2.5	200*	5/14/83	(15212-12545(lmp))	2146/2141	w/312, breakaway 5B collar, dispersed, implant, shot 5/84	
344 #2	F	7.5	325*	5/14/83	10445	same	w/2@0, not captured	
335 #2	F	5.5	—	5/14/83	—	same	no radio in chopper	
335#3	F	5.5	236	5/16/83	(15276)	same	alone, one year added to 81 age based on 83 tooth	
(388)	F	14.5	450*	5/14/83	(6988)	((2478/2477))	w/389 and 390@2, recap. 5/84 & 6/86, eartags gone 5/90, shot 9/93	
(389)	M	(2.5)	135	5/14/83	(15214-12544	2170/2171	w/388 and 390, breakaway 5B collar, died 10/83, implant	
390	M	2.5	125*	5/14/83	15211-12543	2148/2147	w/388 and 389, breakaway 5B collar-shed, implant	
340 #2	F	5.5	250*	5/15/83	(15285)	same	recaptured 5/17/84, collar replaced 6/85, shot fall 95	
384	F	12.5	300*	5/15/83	15279	2499/2500	w/391, 392, 393@2	
(391)	M	2.5	140*	5/15/83	(15213)	(2078/2079)	w/384 et al., breakaway 5B collar, shot 9/84	
(392)	M	2.5	140*	5/15/83	(15246)	(2111/2110)	w/384 et al., breakaway 4B collar, shot 5/84	
(393)	F	2.5	105	5/15/83	(15247)	(1589/1598)	w/383 et al., breakaway, recapt. in 13A, 5/96, shot 9/97	

Table 1 Continued

<u>Capture</u>							
Tattoo	Sex	Age**	Wt.	Date	Serial #	Ear Tags	Comments
(293# 3)	M	(6.5)	439	5/15/83	15291	same	--, shot spring 85
(394)	F	6.5	250*	5/15/83	(15277)	(1693/1692)	w/cub #4, shot 9/84
(004)	F	0.5	10	5/15/83	—	(1358/1357)	w/394, chewed on, no tattoo, died later
(395)	F	3.5	175*	5/15/83	(15289)	(2415/2416)	alone, regular 6B collar, shot 9/4/83
281 #3	F	6.5	325*	5/15/83	(15284)	same	w/2@0 (#5 and #6), recollared 5/17/84, 9/94
(005)	M	0.5	8.5	5/15/83	(1023)	(1350/134)	w/281, expandable cub collar, no tattoo, eaten
(006)	F	0.5	8.3	5/15/83	(1026)	(1346/1345)	w/281, expandable cub collar, no tattoo, eaten
280#3	M	8.5	482	5/16/83	(15290)	same	recaptured 6/85
396	F	13.5	274	5/16/83	(14885)	1685/1684	w/2@2, (397,398), recaptured 6/86, 9/94
(397)	F	(2.5)	132	5/16/83	—	(2493/2492)	w/396, recaptured 6/4/85, shot 9/85
(398)	F	(2.5)	135*	5/16/83	—	2105/2104	w/396, shot 6/86
(399)	M	(9.5)	600*	5/17/83	(15278)	2087/2108	recaptured 5/15/84, shot 5/87
(400)	M	(20.5)	542	5/17/83	(15281)	2132/2133	recaptured 5/18/84, shot 5/93
299 #4	F	16.5	275*	5/18/83	15283	same	w/3@0, darted in den, recaptured 5/15/84
418	M	0.5	13*	5/18/83	1024	1347/1348	w/G299, special cub collar, shed 10/83, old #7
(279 #2)	M	12.5	700*	5/18/83	(10339)	1653/1100	recapture, previous shed collar, recaptured 5/16/84
(315 #2)	F	5.5	203	5/18/83	(15288)	same	estrus, alone, just marked previously, shot 9/86
(403)	F	6.5	275*	5/18/83	15275	(1564/1565)	w/2@0, not captured, Downstream. Shot DLP 8/95
(407)	F	4.5	220*	5/19/83	(2905)	(2401/1543)	alone, downstream, recaptured 6/85, shot 9/17/91
299 #5	F	17.5	308	5/15/84	—	same?	w/3@1, 417-419
(417 #2)	M	1.5	94	5/15/84	12080	same	w/G299 & siblings, small implant, shot 5/86
418 #2	M	1.5	86	5/15/84	12081	same	w/G299 & siblings, large implant
419 #2	M	1.5	84	5/15/84	12076	same	w/G299 & siblings, small implant
(399)#2	M	(10.5)	662	5/15/84	(6405)	same	alone, shot 5/87
(388 #2)	F	15.5	400*	5/16/84	same	same	w/2c, replaced 6/86, shot 9/93
(16)	M	0.5	—	5/16/84	(1389)	(1389/1390)	w/G388, capture-induced separation, died/shed 6/84
(17)	F	0.5	00	5/16/84	(1623)	(40/50)	w/G388, capture-induced separation, died 5/84
312 #3	F	14.5	300*	5/16/84	(6332)	same	w/3c, old and new radio failures, capture mortality on 5/17/84
312 #4	F	14.5	300*	5/17/84	—	—	Shot during recapture, Dennis bitten
(279 #3)	M	13.5	800*	5/16/84	(6339/18884)	same	large implant, shot 9/84
281 #4	F	(7.5)	350*	5/17/84	(6407)	same	w/2c, recaptured 6/87, 5/94
(21)	M	0.5	14	5/17/84	(1703)	1386/1383	w/G281, drowned?
(22)	M	0.5	14	5/17/84	(1710)	(1385/1384)	w/G281, killed by BrB
337 #3	F	16.5	325	5/17/84	same	same	w/2c, recaptured 6/85
(08)	F	0.5	12	5/17/84	1708	(1338/1337)	w/337, shot spring 90
09	F	0.5	12	5/17/84	1711	1340/1339	w/337
340 #3	F	6.5	375*	5/17/84	same	same	w/2c, recaptured 6/85, 6/87, shot fall 95
(23)	F	0.5	17	5/17/84	(1713)	(45/28)	w/340, shot 4/89, sex determined @ sealing
(24)	M	0.5	14	5/17/84	(1706)	(44/27)	w/340, shot, Clearwater Mts. 9/91, sex determined at sealing
420	F	19.5	350*	5/17/84	6335	2447/2057	w/2@1, one is 421

Table 1 Continued

<u>Capture</u>							
Tattoo	Sex	Age**	Wt.	Date	Serial #	Ear Tags	Comments
(421)	M	1.5	78	5/17/84	(3984/1886)	(1644/2086)	w/420 & uncapt. sibling, implant, ff sib 437, cap. 6/85, shot 9/88
422	M	4.5	205	5/18/84	18716	2136/2137	alone near camp
381 #2	F	(5.5)	263	(5/18/84)	(6341)	same	alone, collar replaced on 6/86, shot 9/89
(40 #2)	M	(21.5)	600*	5/18/84	(6325)	same	alone, shot 5/93
(382 #2)	M	2.5	148	5/18/84	(15289)	same	w/G313, old implant breakaway, picked up 6/86, shot 5/93
423	F	21.5	300*	5/18/84	(6306)	none	w/4c, drug problem, recaptured 6/86
25	M	0.5	7	5/18/84	1712	39/32	smallest cub w/G423
-	F	0.5	-	5/18/84	-	49/48	other sibling w/G423 not marked or sexed
425	F	14.5	-	6/01/84	(6344)	2486/2413	w/282 M, recaptured 6/86. 3 teeth misplaced
(282 #3)	M	8.5	-	6/01/84	(-)	same	w/425, recap. of shed collar, recap. 6/86, shot spring 92
342#3	M	5.6	-	7/28/84	-	-	capture mortality
(427)	M	(3.5)	195	6/01/85	(6322)	(1697/2113)	rot-away canvas spacer used, shot fall '86
(398 #2)	F	(4.5)	200*	6/01/85	(6315)	same	396's offspring @2 in 1983, shot 6/86
314 #2	F	7.5 K	285*	6/01/85	-	SAME/2498	w/ 429 @1, replaced collar
(429)	F	1.5	104	6/01/85	-	-	w/ mom 314; shot 9/86
(214 #2)	M	9.5	600*	6/03/85	(xx46)	(1071/1649)	previously shed collar, recaptured 5/86, shot fall 91
437	F	2.5	175*	6/03/85	1036	2082/2083	w/G421, probably sibling, rot-away collar, recaptured 5/95
(309/440#2)	M	17.5	700*	6/04/85	(6298)	(2193/1523)	old collar shed, tattoo 440, RA, shot spring 90
(442)	M	(13.5)	750*	6/04/85	-	(1627/2117)	"Harley" yellow flag in rt. ear, shot 9/86, ear tag gone
443	M	8.0*	400*	6/04/85	-	2172--	red flat in right, blond
(397 #2)	F	(4.5)	300*	6/04/85	6449	(1534/1597)	estrus w/443, was w/G396 in 1983@2, shot 9/85
(447)	F	7.5	400*	6/05/85	(10337)	(2430/2429)	breakaway, shot 9/94
347#2	M	18.5	650*	6/09/95	-	2184/2181	orange flags in ears, old eartags gone
(339/450 2)	M	(4.5)	150*	6/09/85	-	(1221/2130)	originally captured in 1981 @0 w/G283, sexed as F switched w/sex of sibling? tattoos = 450, shot 9/85
(385 #2)	F	4.5	130*	6/09/85	-	(1507/1592)	green flag on visual drop-off, old ear tags replaced, shot 9/95
(407 #2)	F	6.5	200*	6/09/85	same	same	alone drop-off feature added to collar, shot 9/91
337 #4	F	17.5	200*	6/09/85	6440	same	w/2@1 - these have no collars
273 #2	F	9.5	200*	6/09/85	(6342)	same	age = 3 in 1979, transported, returned, see 6/87
(340 #4)	F	17.5	250*	6/10/85	(6333)	same	replaced collar, w/2@1, recaptured 6/87, shot fall 95
280 #4	M	10.5	400*	6/10/85	-	same	collar removed
388 #3	F	17.5	425*	6/05/86	(6348)	same	w/2@1, not captured, collar replaced, shot 9/93
335 #4	F	8.5	300*	6/05/86	(6288)	same/2481	w/1@2 = G466, collar replaced
466	F	2.5	150*	6/05/86	-	2097/2056	w/mom - 335
396 #2	F	16.5	300*	6/06/86	(6343)	same	estrus, collar replaced
(381 #3)	F	(7.5)	225*	6/06/86	(15285)	--/same	w/2@1, not captured, collar replaced, shot 9/89
(214 #3)	M	10.5	600*	6/06/86	-	none/2062	collar removed, shot fall 91
283 #4	F	18.5	300*	6/06/86	(6340)	same	w/2@1, not captured, collar replaced
423 #2	F	22.5	275*	6/06/86	(6306)	1540/1541	w/3@2, not captured, collar replaced

Table 1 Continued

Capture

Tattoo	Sex	Age**	Wt.	Date	Serial #	Ear Tags	Comments
425 #2	F	16.5	250*	6/06/86	6449	same	w/2@1, not captured, last tooth pulled, lost 9/89
(282 #4)	M	10.5	550*	6/06/86	—	(2129/same)	alone, collar removed, neck bad
453	F	4	250*	6/03/86	6345	2443/2363	UPSU w/2@0, lost 1c but successfully reintroduced next day
(468)	F	0.5	15	6/03/86	—	562/561	UPSU w/G453, shot spring 91
—	F	0.5	17	6/03/86	—	558/559	UPSU w/G453
454	F	4	175*	6/03/86	6278	2358/2353	UPSU alone, no tattoo
(455)	M	8	525	6/03/86	6351	(2058/1700)	UPSU alone, drop-off collar, removed all tags 6/87, shot 9/89
(456)	M	6	250*	6/04/86	(15290)	(2441/2352)	UPSU w/2@0, one captured, shot 5/87
—		0.5	33	6/04/86	—	551/552	UPSU w/uncaptured sibling & 456
457	M	7	525	6/04/86	15291	(2129/2066)	UPSU w/458, drop-off collar, removed all tags 6/87
(458)	F	17	200*	6/04/86	6443	2421/2446	UPSU w/457, drop-off collar, shed, shot spring 90
459	F	3	100*	6/04/86	—	2435/2407	UPSU alone, recaptured 6/87
460	F	7	300*	6/04/86	6349	(560/564)	UPSU w/2@0, no ear flags, roto tags, recaptured 5/90, 5/96
—	M	0.5	30	6/04/86	—	—	UPSU capture mortality
(—)	F	0.5	30	6/04/86	—	553/554	UPSU w/460 & sibling, shot 9/88
(461)	F	5	275*	6/05/86	(15284)	(1529/2427)	UPSU w/1@0, shot 8/95
—	M	0.5	26	6/05/86	—	567/555	UPSU w/461
462	F	7	275*	6/05/86	6298	2412/2487	UPSU w/1@1, magnet left on? in 86, okay in 87
463	M	1.5	90*	6/05/86	—	2193/2198	UPSU w/G462
(464)	M	2	150*	6/05/86	—	2185/2177	UPSU alone, recapt. 5/93 when cementum age at 10, shot 9/94
465	F	3	250*	6/05/86	(6309)	1525/2442	UPSU alone, collar removed 6/87
(466)	F	2	150*	6/05/86	—	2097/2056	UPSU offspring w/G335 (Su-Hydro), shot spring 91
467	M	3	190	6/05/86	—	2144/2138	UPSU alone
(340 #5)	F	19.5	342	6/05/87	(6293)	same	alone, replaced collar, shot fall 95
337 #5	F	19.5	288	6/05/87	(27816)	same	estrus, replaced collar, recaptured 5/90
281 #5	F	10.5	300*	6/05/87	(27814)	same	estrus, replaced collar
314 #3	F	9.5	320*	6/05/87	(6295)	2498/3071	w/3@0, L. ear tag replaced, recap. 5/93
273 #3	F	11.5	300*	6/05/87	(27821)	676/3082	w/3@0, replaced left ear tag, replaced collar
(001)	F	0.5	16	6/05/87	—	581/584	w/273 & uncaptured sibling, shot 4/92
(002)	M	0.5	18	6/05/87	—	585/578	w/273 & uncaptured sibling, shot 4/92
341 #3	F	12.5	313	6/05/87	(6324)	same	w/1@1, replaced collar, died in 88/89 den
(468)	F	1	70	5/30/87	(27826)	(558/559)	UPSU w/mom 453 & sibling, glue-on transmitter, shot 9/1/89
459 #2	F	4	198	5/30/87	6344	(same)	UPSU alone, rot-away collar, shed summer 88
					27827		UPSU glue-on radio (mod. 300)
469	F	6	275*	5/30/87	19053	2364/2424	UPSU w/2@1, 85 radio
					1023		UPSU glue-on transmitter (mod. 200), 19-50 ppm
(470)	M	2	185	5/30/87	(3.930**)	(2176/2179)	UPSU alone, glue-on transmitter, shot 9/87
(470 #2)	M	2	—	6/08/87	—	—	UPSU removed transmitters, shot 9/87
471	M	5	450*	5/30/87	—	2099/1699	UPSU w/girlfriend 472

Table 1 Continued

<u>Capture</u>							
Tattoo	Sex	Age**	Wt.	Date	Serial #	Ear Tags	Comments
471 #2	M	5	—	6/08/87	—	—	UPSU removed radio
(472)	F	(12)	375*	5/30/87	—	(3076/3045)	UPSU estrus, w/boyfriend (471) and 1@1 (475), shot 8/96
(472 #2)	F	(12)	—	6/08/87	—	—	UPSU removed radio, shot 8/96
(473)	F	6	295	5/30/87	—	3075/3045	UPSU alone
(473 #2)	F	6	—	6/08/87	—	—	UPSU removed radio, shot 9/88
474	M	3	335	5/31/87	6302 27828	2512/2658 —	UPSU alone, 85 radio UPSU glued-on radio (mod. 300)
475	M	1	70*	5/31/87	1022	2637/2504	UPSU w/472 and stepdad, glue-on radio
475 #2	M	1	—	6/08/87	—	—	UPSU removed transmitter, checked teeth
476	M	2	150*	5/31/87	19048 27852	2067/2065 —	UPSU w/477 (sibling?) UPSU glue-on radio
476 #2	M	2	—	6/08/87	—	—	UPSU w/476 (sibling?)
(477)	F	2	125*	5/31/87	—	2654/2699	UPSU removed radio, shot 9/87
(477 #2)	F	2	—	6/08/87	—	—	UPSU w/2@1
478	F	9	340*	6/01/87	X988 1700	3026/3046 —	UPSU glue-on radio (mod. 300) UPSU alone, shot 1994
(479)	M	2	224*	6/04/87	—	(2503/2681)	UPSU removed collar
(479 #2)	M	2	—	6/08/87	—	—	UPSU w/3@1, old 85 radio
480	M	2	205	6/04/87	—	2649/2635	UPSU alone
480 #2	M	2	—	6/08/87	—	—	UPSU removed collar
481	F	14	282	6/05/87	6287	3016/3064	UPSU w/3@1, old 85 radio
482	F	7	300*	6/06/87	—	3093/3080	UPSU w/3@1
482 #2	F	7	—	6/08/87	—	—	UPSU removed radio
457 #2	M	8	600*	6/07/87	—	—	UPSU removed collar & eartags, both badly infected
455 #2	M	9	550*	6/08/87	—	—	UPSU removed collar & eartags, both badly infected
465	F	4	310*	6/08/87	—	(same)	UPSU alone, removed collar
No bears captured in 1988 & 1989							
340 #6	F	22.5	—	5/27/90	(6350)	(215/214(R))	replaced collar and rt. Ear tag, shot fall 95
(388 #4)	F	21.5	—	5/27/90	6440	181/183(R)	replaced collar and 2 missing cartags, shot 9/93
335 #5	F	12.5	—	5/27/90	15286	same	w/2@1, not captured, replaced radio, recaptured 5/94
281 #6	F	13.5	—	5/27/90	19048	same	estrus, replaced collar, recaptured 5/94
273 #4	F	14.5	—	5/27/90	19049	same/320(Y)	estrus, replaced collar & rt. eartag, recaptured 5/93
314 #4	F	12.5	—	5/27/90	19045	same	w/1 coy capt.-induced separation, replaced collar
423 #3	F	26.5	—	5/27/90	6353	same/212(W)	estrus, replaced collar & rt. eartag, see 5/93 recapture
(337 #6)	F	22.5	—	5/27/90	6346	304/213(W/R)	alone, replaced collar & both eartags, recapt. 5/94, '96
283 #5	F	22.5	—	5/27/90	(19020)	same/193R	w/2@1, replaced collar & rt. eartag, recaptured 5/93
396 #3	F	20.5	—	5/27/90	19046	same	w/3@1, replaced collar
460 #2	F	15.5	—	5/27/90	6322	same	UPSU w/2@1, replaced collar, recaptured 5/93, 5/96
483	M	11A	525*	5/12/93	10636	155R/-	canvas spacer
484	F	4A	270	5/12/93	(10666)	168Y/168R	see 5/96

Table 1 Continued

<u>Capture</u>							
Tattoo	Sex	Age**	Wt.	Date	Serial #	Ear Tags	Comments
485	F	5A	250	5/12/93	(19040)	151Y/171Y	recaptured 5/96
486	F	6A	270	5/12/93	(10652)	180Y/180R	recaptured 5/96
487	M	5A	475	5/12/93	19054	160Y/160R	recaptured 6/94
(488)	(F)	(12A)	325*	5/13/93	18099	(088Y/089Y)	w/2@0, collar shed post capt., shot 9/13/96
(306 #2)	F	16.5	390	5/13/93	(6349)	(163/170Y)	old tags gone, see 5/80 capture, shot 5/95
(489)	M	4A	380	5/13/93	(10655)	(241R/242R)	canvas spacer, suspect shot 8/26/97
(490)	M	2A	160	5/13/93	—	(178R/179R7)	w/491 sibling, shot 4/94
491	F	2A	100	5/13/93	—	93Y/94Y	w/490 sibling, recaptured 6/95
(423 #4)	F	29.5	290	5/13/93	(19052)	165Y/212W	w/492, replaced collar, 1 tag gone, prob.nat.mort. 94
(492)	M	3A	350*	5/13/93	—	(135/186R)	w/423, breeding, shot 10/4/97
493	M	6A	390	5/13/93	(27816)	227/226	canvas spacer, shed 94, recapt. 5/93
(494)	M	5A	390	5/13/93	(6446)	372/356R	alone, shot 9/93
(495)	F	2A	210	5/13/93	(19054)	(216/213G)	canvas spacer, recpat. 5/94, shot fall 95
496	F	7B	265	5/14/93	(27814)	(221/098Y)	w/497@1, see 5/96 recapture
497	F	1.5K	80	5/14/93	—	176/179Y	w/mom 496, apparent capt.-induced separation
498	F	20A	390*	5/14/93	(6348)	“	w/2coy, uncaptured-separated, recaptured 5/95
498	‘	“	“	5/18/93	“	“	reunited family
(511)	F	0.5K	18	5/18/93	—	(214/213G)	reunited family, shot 8/95
512	M	0.5K	21	5/18/93	—	216/215G	reunited family
499	F	6A	280	5/14/93	6443	(274/215Y)	no previous litter, recaptured 5/94, 5/96
(500)	M	(3A)	270	5/15/93	6293	(159/177R)	canvas spacer, shot 8/20/96
(340 #7)	F	25.5	355	5/15/93	(6288)	(213Y/214W)	w/mm 487 & 3 @2, replaced collar, shot fall 95
(501)	F	2.5K	185	5/15/93	(10654)	(154/164Y)	canvas spacer, w/340, 2 sibs., & M 487, see 5/96, shot 9/97
502	F	2.5K	175*	5/15/93	—	191/192Y	w/340 (mom), 2 sibs., recaptured 5/94
(503)	F	2.5K	180	5/15/93	—	(166y/17 0)	w/340 (mom), 2 sibs., & male 487, recapt. 5/95, shot 9/97
504	F	5A	310	5/16/93	6342	161/167Y	canvas spacer, dropped off 94
314 #4	F	15.5	NA	5/16/93	27821	207/208Y	collar replaced, w/3@2, see 5/96 recapture
505	M	2.5K	200*	5/16/93	—	176/288R	w/314 (mon) and 2 sibs.
(506)	F	(2.5K)	180*	5/16/93	(6275)	(206/205Y)	w/314 (mom) and 2 sibs., spacer, recaptured 5/95, shot 4/96
507	F	2K	170*	5/16/93	—	199/200	w/314 (mom) & sibs., shed collar, recap. 95
273#5	F	17.5	285	5/16/93	6352	210Y/273	w/mm 464, replaced collar, L. eartag, see 6/96 recapture
(464 #2)	M	9.5	550*	5/16/93	(6309)	(292/291R)	w/ff 273, no eartags left, shot 9/93
460 #3	F	14.5	300	5/16/93	6351	(560/564R)	UPSU replaced collar, w/2@4, see 6/96
513	F	4K	240	5/19/93	6305	283/156Y	UPSU w/460 and 1 sib., shot DLP summer 93
508	F	6B	370	5/17/93	15290	202/201Y	alone
509	F	3A	205	5/17/93	(15291)	(295)/294Y	alone, recaptured 5/94, 5/96
283 #6	F	25.5	290	5/17/93	(6343)	248Y/193R	replaced collar and L. eartag w/m 483, see 5/96
(510)	M	20A	(650)	(5/17/93)	(6341)	(249/250R)	w/ff 273, shot 9/95
280 #4	M	19	680	5/20/94	5464	300/298R	w/281, removed collar on 6/95

Table 1 Continued

<u>Capture</u>							
Tattoo	Sex	Age**	Wt.	Date	Serial #	Ear Tags	Comments
281#7	F	17	375*	5/20/94	5460	2484/2474Y	replaced collar & eartags
514	M	4A	375*	5/20/94	—	235/244R	w/F502
502 #2	F	3K	240	5/20/94	5455	same	w/Male 514
(516)	M	3A	260	5/20/94	—	(285/287 R)	eartag error?, RA, shot 4/97
518	F	4A	240	5/20/94	(5465)	243/244Y	loose collar, 23.5". recapt. 5/97
507 #2	F	3K	210	5/20/04	5461	same	w/F518, recaptured in 95
487 #2	M	6	550	5/20/94	same	same	New RA spacer
495 #2	F	3	245	5/20/94	same	same	New RA spacer
509 #2	F	4	240	5/21/94	same	same	w/lg. uncaptured M, new RA, expanded 1", recapt. 5/96
515	M	(4A)	375*	5/21/94	(5457)	(226/223R)	RA, w/F499, shot 4/96
499 #2	F	7	300	5/21/94	same	288/289Y	w/M515, ears infected, collar expanded, see 5/96
335 #6	F	16	290	5/21/94	5469	182/181Y	replaced collar, w/l@1, recapt. 5/97
506 #2	F	3K	210	5/21/94	same	same	alone, new RA, expanded 1", shot 4/96
(501 #2)	F	3K	230*	5/21/94	(5459)	same	alone, RA applied, shot 8/97
(337 #7)	F	26	350*	5/22/94	(5468)	same	alone, died 1996
517	F	18A	330	5/22/94	5463	243/252Y	w/2@1, not captured
519	M	3A	270	5/22/94	5466	232/236R	alone, RA spacer
(461 #2)	F	12	294	5/22/94	(5467)	(same/251Y)	UPSU replaced 86 collar, w/3@1, uncaptured, shot 8/95
437 #2	F	12	290	5/15/95	6354B	203/280Y	old tags (1985) gone w/2@2
(520)	F	9A	280	5/15/95	6333	249/250Y	w/2@2, shot 9/95
493	M	8	475	5/15/95	36361	same	breakaway collar
491	F	4	190	5/16/95	6346	same	canvas spacer
(521)	M	2*	170	5/16/95	(36350)	(200/199R)	w/sibling, shot 9/95
(522)	F	2A	140	5/16/95	36306	261/260Y	w/2 siblings
523	M	8A	660	5/16/95	36356	168/187R	shed, surg.tube
(503 #2)	F	4K	245	5/17/95	(19048)	same	alone, canvas spacer, recapt. 5/97, shot 9/97
524	M	15*	600*	5/17/95	36355	210/209R	surgical tube
525	F	7A	290*	5/17/95	6451	219/220Y	w/2@1, canvas spacer, recaptured 5/96
280 #5	M	20	620	5/18/95	—	same	removed collar
498 #2	F	22	345	5/18/95	366910	same	w/2@2
506 #3	F	(4K)	325*	5/18/95	(366911)	same	alone, loosened collar, shot 4/96
507 #3	F	4K	240	5/18/95	(366909)	same	w/male, collar okay. Recapt. 5/97
526	F	4A	285	5/15/96	381889	326/325Y	13A, alone
527	M	19A	600*	5/15/96	381893	228/227R	13A
528	F	5A	290	5/15/96	381906	300/190Y	13A, alone
529	F	27A	350	5/15/96	381884	228/266Y	13A, alone
530	F	7B	255	5/15/96	381898	272/221Y	13A, w/2@3
531	M	3A	215	5/15/96	381913	277/278R	13A, w/530 & sib., spacer
532	F	22A	330*	5/16/96	381895	223/230Y	13A, w/2@1

Table 1 Continued

Tattoo	Sex	Age**	Capture			Ear Tags	Comments
			Wt.	Date	Serial #		
533	F	1A	65*	5/16/96	—	183/184Y	13A, w/532 & 534
(534)	M	1A	75*	5/16/96	—	(294/293 R)	13A, w/532 & 533, shot 9/97
535	M	6B	575*	5/16/96	(381886)	195/196R	13A., alone?
(393 #2)	F	15	295	5/16/96	(381897)	(277/276 Y)	13A, w/3@0, SHOT 9/97 W/3@1
536	F	16A	340	5/17/96	381890	329/330Y	13A, w/1@1, reunited on 5/19
537	F	1	97	5/17/96	—	268/269Y	13A, w/536, reunited on 5/19, eartag, recapt. 5/97
538	M	3A	210	5/17/96	(381916)	(220/212R)	13A, spacer, shot 9/14/97
(539)	F	3A	180	5/17/96	(381909)	(214/259Y)	13A, spacer, shot 5/27/96
540	F	14A	300*	5/17/96	19049	236/235Y	13A, alone
541/2	F	6A	250*	5/17/96	381905	246/245Y	13A, tattoo=542(mistake), w/542
542	M	6A	545	5/17/96	366904	158/157R	13A, w/541
543	M	3A	200*	5/17/96	381908	186/185R	13A, spacer
544	M	4A	410	5/17/96	381883	238/286R	13A, spacer
545	M	7A	515	5/18/96	381900	319/320R	13A, spacer
546	F	20A	320	5/18/96	—	-/275Y	13A, w/1@1 eartag & 6B. recapt. 5/97
547	F	1	140	5/18/96	—	327/328Y	13A, w/546, recapt. 5/97
537 #2	F	1	—	5/19/96	381919	same	not w/mom, put on eartag radio
548	M	11A	640	5/20/96	—	254/253R	13A, white EF
549	F	7A	290	5/20/96	381887	324/323Y	13A, alone
550	F	13A	300	5/20/96	381907	305/306Y	13A, w/1@2(551)
551	F	2A	190	5/20/96	381911	196/195Y	13A, w/550 (mom)
536 #2	F	16A	—	5/20/96	same	same	13A, slung back to 537 (@1)
(552)	F	2A	165	5/21/96	—	—	13A, capture mortality
553	M	3A	295	5/21/96	—	216/-	13A, 6B & eartag radio
554	M	8A	550	5/21/96	—	310/309	13A, orange flags, w/555
555	F	4A	245	5/21/96	381901	302/301Y	13A, alone
556	F	9A	320	5/21/96	381899	292/293Y	13A, w/2@2
(557)	M	2A	155	5/21/96	(36348)	230/229R	13A, 405 collar w/rubber spacer, w/556 & 558, shot 9/96
(558)	(M)	(2A)	170	5/21/96	—	(205/206R)	13A, w/556 & 557, shot 9/96
(559)	(M)	(7B)	420	5/21/96	(381885)	(162/152R)	13A, w/334, shot 9/96
334 #2	F	24	400	5/21/96	381894	315/316Y	13A, near 2@2 (560, 561)
560	F	2A	210	5/21/96	381910	265/157Y	13A, near 334, w/561, recapt. 5/97
(561)	F	2A	160	5/21/96	—	(240/239Y)	13A, near 334, w/560, shot F/96
509 #3	F	6	275*	5/22/96	366906	178/same	13E w/2@0, new collar
525 #2	F	8	285	5/22/96	same	same	13E, w/2@2, expanded collar
485 #2	F	8	265	5/22/96	6440	same	13E, w/2@2, new collar
501 #3	F	5	240	5/22/96	(366912)	same	13E, w/2@0, loosened collar, shot 9/97
496 #2	F	10	325	5/22/96	366905	222/same	13E, w/1@2, replaced collar
460 #4	F	17	315	5/22/96	366912	same	13E, w/2@2, loosened collar
484 #2	F	7	290*	5/22/96	366907	same	13E, w/1@2, loosened collar

Table 1. Continued

<u>Capture</u>							
Tattoo	Sex	Age**	Wt.	Date	Serial #	Ear Tags	Comments
283 #7	F	28	340	5/22/96	366908	same	13E, alone, new collar
499 #3	F	9	295	5/22/96	15284	same	13E, w/1@1, new collar
314 #5	F	18	300	5/22/96	6344	same	13E, w/3@1, new collar
486 #2	F	9	295*	5/22/96	15290	same	13E, w/1@2 new collar
273 #6	F	20	280*	6/18/96	6293	same	13E, w/2@1, new collar
562	M	17A	575*	5/16/97	381903	345/344 O	13A, canvas spacer
563	F	6A	305	5/16/97	405085	211/212 Y	13A, w/2@0
564	F	18A	290	5/16/97	388591	397/396 Y	13A, w/3@1
565	F	9A	275*	5/16/97	388590	381/380 Y	13A, w/ adult male 566
566	M	10A	780	5/16/97	-	242/264 R	13A, Orange Flag (L), "big boy"
545 #2	M	8	680	5/17/97	-	319 /241R	13A, replaced Rt. eartag
547 #2	F	2A	175	5/17/97	381917	same	13A, alone, canvas spacer
567	F	10A	310	5/17/97	405087	319/320 Y	13A, alone
(568)	M	3A	340	5/17/97	(381896)	(221/222 R)	13A, canvas spacer, shot 8/97
569	F	9A	315	5/17/97	381892	282/267 Y	13A, w/2@2, one is 570
570	F	2A	130*	5/17/97	381914	256/247 Y	13A, w/ sib and mom (569), canvas spacer
571	M	9A	560	5/17/97	405084	189/184 R	13A, w/ F556, canvas spacer
533 #2	F	2K	145	5/18/97	381912	same	13A, w/ mom 532 and sibling 534, canvas spacer
(534) #2	M	2K	160	5/18/97	(381915)	same	13A, w/ mom 532 and sibling 533, canvas spacer, shot 9/97
572	F	7A	260	5/18/97	396542	321/322 Y	13A, w/ 2@1 (not captured)
573	M	4A	290	5/18/97	381902	382/203 R	13A, w/ F572, canvas spacer
574	F	14B	240	5/18/97	4050	392/393 Y	13A, w/ large M with orange eartags
575	F	23A	365	5/18/97	396545	175/197 Y	13A, w/ adult F 573, on kill
526 #2	F	5	270	5/18/97	same	same	13A, collar-ok, lactating profusely, recently lost coy
576	M	3	195	5/19/97	396549	305/302 R	13A, canvas spacer, check collar next year
577	F	7A	320	5/19/97	405091	398/399 Y	13A, lactating, recently lost litter
578	M	5A	300	5/20/97	381889	314/315	13A, canvas spacer, collar used 1 year
537 #2	F	2K	180	5/20/97	405093	same/152Y	13A, canvas spacer, removed eartag transmitter
560 #2	F	3K	280	5/20/97	405090	same	13A, alone, canvas spacer
579	M	23A	520	5/20/97	-	259/252 R	13A, alone
580	M	3A	250	5/21/97	366909	161/164 R	13A, alone, canvas spacer
507 #4	F	6	250	5/21/97	27821	same	13E, replaced collar, w/1@1
503 #3	F	6	280	5/21/97	(6351)	same	13E, replaced collar, w/2 coy, shot 9/97
335 #7	F	19	310	5/21/97	(6353)	same	13E, replaced collar, alone
518 #2	F	7	240*	5/21/97	6343	same	13E, replaced collar, alone

* estimated

** Mattson certainty, code, K = known age

Table 2. Comparison of number of hours spent searching for each independent bear seen in 1985 and 1995 density estimation efforts in the Su-hydro study area (MIDSU) ($1,325 \text{ km}^2$ including 8 km^2 above 5,000 feet elevation), in the 1987 density estimate in the Denali Highway study area (UPSU) ($1,309 \text{ km}^2$ including 51.7 km^2 above 5,000 feet elevation) and during 1996 and 1997 capture efforts in the new 13A study area (area searched not estimated). During 1985, 1987, and 1995 density estimates, area above 5,000 feet elevation were searched but not considered as bear habitat for purposes of density calculations.

	REP. 1	REP. 2	REP. 3	REP. 4	REP. 5	REP. 6	REP. 7	TOTALS
MINUTES OF SEARCH								
(1995)	1,355	1,548	1,491	1,459	1,787			7,640
NO. INDEPENDENT BEARS SEEN (1995)	6	12	15	9	11			53
HRS/IND.								
BEAR (1995)	3.76	2.15	1.66	2.70	2.71			2.40
IND. BEARS/HR	0.27	0.46	0.60	0.37	0.37			0.42
MIN/KM ²	1.02	1.17	1.13	1.10	1.35			1.15
MINUTES OF SEARCH(1985)¹								
NO. INDEPENDENT BEARS SEEN (1985)	870	1,067	935	1,083	933	1,232	797	6,917
HRS/IND.								
BEAR (1985)	5	1	7	9	9	6	5	42
IND. BEARS/HR	2.9	17.8	2.23	2.01	1.73	3.42	2.66	2.74
MIN/KM ²	0.34	0.06	0.45	0.50	0.58	0.29	0.38	0.36
MIN/KM ²	0.66	0.81	0.71	0.82	0.70	0.93	0.60	0.75
MINUTES OF SEARCH(1987)²								
NO. INDEPENDENT BEARS SEEN (1987)	1,097	1,037	1,295	1,333	1,293	1,512	1,419	8,986
HRS/IND.								
BEAR (1987)	5	4	4	3	3	6	3	37
IND. BEARS/HR	3.66	4.32	5.40	7.41	7.18	4.20	7.88	4.05
SECONDS/KM ²	0.27	0.23	0.19	0.13	0.14	0.24	0.13	0.25
SECONDS/KM ²	50	47	59	61	59	70	65	59
MINUTES OF SEARCH(1996)³								
NO. INDEPENDENT BEARS SEEN (1996) ³	765	628	628	813	750	657	737	4,978
HRS/IND.								
BEAR (1996) ³	6	4	10	4	2	5	10	41
IND. BEARS/HR	2.13	2.62	1.1	3.4	6.25	2.19	1.23	2.02
IND. BEARS/HR	0.47	0.38	0.91	0.29	0.03	0.46	0.81	0.49
MINUTES OF SEARCH(1997)³								
NO. INDEPENDENT BEARS SEEN (1997) ³	724	858	845	803	714	298	985	5,227
HRS/IND.								
BEAR (1997) ³	7	6	13	3	7	4	4	44
IND. BEARS/HR	1.72	2.38	1.08	4.46	1.70	1.24	1.24	1.98
IND. BEARS/HR	0.58	0.42	0.93	0.22	0.59	0.81	0.81	0.51

¹ From Miller (1987:227)

² From Miller (1988:38)

³ Data were collected during capture efforts in GMU 13A which are more efficient at finding bears than effort during density estimation procedures. These data are not directly comparable to that collected during density estimates.

Table 3. Brown bear survivorship in Subunit 13E based on radiomarked bears ≥ 2 years old during different time periods and for different sexes. Includes only known mortalities; possible mortalities treated as censored data.

3a. FEMALES ≥ 2 , 1980-1985

PERIOD	NO. AT RISK	NO. DEATHS	SURVIVAL	NO. CENSORED	NO. ADDED	VARIANCE	LOWER CL	UPPER CL
JAN-FEB	65		1.0000			0.0000	1.0000	1.0000
MAR	65		1.0000			0.0000	1.0000	1.0000
APR	65		1.0000	1	3	0.0000	1.0000	1.0000
MAY	67	1	0.9851		23	0.0002	0.9563	1.0139
JUN	89	1	0.9740	1	7	0.0003	0.9414	1.0066
JUL	94		0.9740	1		0.0003	0.9423	1.0058
AUG	93	1	0.9635			0.0004	0.9261	1.0009
SEPT	92	6	0.9007	4		0.0009	0.8427	0.9587
OCT	82		0.9007	2		0.0010	0.8393	0.9621
NOV-DEC	80		0.9007			0.0010	0.8385	0.9629
No. Individuals =			98					

3b. FEMALES ≥ 2 , 1986-1990

PERIOD	NO. AT RISK	NO. DEATHS	SURVIVAL	NO. CENSORED	NO. ADDED	VARIANCE	LOWER CL	UPPER CL
JAN-FEB	89		1.0000			0.0000	1.0000	1.0000
MAR	89		1.0000			0.0000	1.0000	1.0000
APR	89	1	0.9888			0.0001	0.9670	1.0105
MAY	88	2	0.9663	3	1	0.0004	0.9292	1.0034
JUN	84		0.9663	3	9	0.0004	0.9284	1.0042
JUL	90		0.9663	1		0.0003	0.9296	1.0029
AUG	89		0.9663			0.0004	0.9294	1.0032
SEPT	89	1	0.9554	6		0.0005	0.9135	0.9973
OCT	82	1	0.9438			0.0006	0.8953	0.9922
NOV-DEC	81		0.9438			0.0006	0.8951	0.9925
No. individual bear-years =			99					

3c. FEMALES ≥ 2 , 1991-1995

PERIOD	NO. AT RISK	NO. DEATHS	SURVIVAL	NO. CENSORED	NO. ADDED	VARIANCE	LOWER CL	UPPER CL
JAN-FEB	77		1.0000			0.0000	1.0000	1.0000
MAR	77		1.0000			0.0000	1.0000	1.0000
APR	77		1.0000			0.0000	1.0000	1.0000
MAY	77		1.0000	1	24	0.0000	1.0000	1.0000
JUN	100		1.0000			0.0000	1.0000	1.0000
JUL	100	2	0.9800			0.0002	0.9528	1.0072
AUG	98	1	0.9700			0.0003	0.9367	1.0033
SEPT	97	5	0.9200	4		0.0007	0.8682	0.9718
OCT	88	1	0.9095			0.0009	0.8524	0.9667
NOV-DEC	87		0.9095			0.0009	0.8521	0.9670
No. individual bear-years =			101					

3d. FEMALES ≥ 2 , 1980-1995

PERIOD	NO. AT RISK	NO. DEATHS	SURVIVAL	NO. CENSORE	NO. ADDED VARIANCE	LOWER	UPPER
						D	CL
JAN-FEB	231	0	1.0000	0	0	0.0000	1.0000
MAR	231	0	1.0000	0	0	0.0000	1.0000
APR	231	1	0.9957	1	3	0.0000	0.9872
MAY	232	3	0.9828	4	48	0.0001	0.9662
JUN	273	1	0.9792	4	16	0.0001	0.9624
JUL	284	2	0.9723	2	0	0.0001	0.9535
AUG	280	2	0.9654	0	0	0.0001	0.9443
SEPT	278	12	0.9237	14	0	0.0002	0.8937
OCT	252	2	0.9164	2	0	0.0003	0.8836
NOV-DEC	248	0	0.9164	0	0	0.0003	0.8834
No. individual bear-years =		298					

3e. FEMALES ≥ 2 , 1996-1997

PERIOD	NO. AT RISK	NO. DEATHS	SURVIVAL	NO. CENSORE	NO. ADDED VARIANCE	LOWER	UPPER
						D	CL
JAN-FEB	30		1.0000		0.0000	1.0000	1.0000
MAR	30		1.0000		0.0000	1.0000	1.0000
APR	30	3	0.9000		0.0027	0.7982	1.0018
MAY	27		0.9000	1	0.0030	0.7926	1.0074
JUN	26		0.9000	1	0.0031	0.7906	1.0094
JUL	25	1	0.8640		0.0041	0.7391	0.9889
AUG	24		0.8640		0.0042	0.7365	0.9915
SEPT	24	1	0.8280	1	0.0049	0.6906	0.9654
OCT	22	1	0.7904		0.0060	0.6391	0.9416
NOV-DEC	21		0.7904		0.0062	0.6356	0.9451

3f. MALES ≥ 2 , 1980-1990

PERIOD	NO. AT RISK	NO. DEATHS	SURVIVAL	NO. CENSORE	NO. ADDED VARIANCE	LOWER	UPPER
						D	CL
JAN-FEB	29		1.0000		0.0000	1.0000	1.0000
MAR	29		1.0000		0.0000	1.0000	1.0000
APR	29		1.0000		3	0.0000	1.0000
MAY	32	2	0.9375	1	12	0.0017	0.8563
JUN	41	1	0.9146	6	5	0.0017	0.8328
JUL	39	1	0.8912	1		0.0022	0.7989
AUG	37		0.8912	2		0.0023	0.7965
SEPT	35	3	0.8148	2		0.0035	0.6986
OCT	30		0.8148	3		0.0041	0.6893
NOV-DEC	27		0.8148		0.0046	0.6825	0.9471
No. individual bear-years =		49					

3g. MALES ≥ 2 , 1991-1995

PERIOD	NO. AT RISK	NO. DEATHS	SURVIVAL	NO. CENSORE D	NO. ADDED	VARIANCE	LOWER CL	UPPER CL
JAN-FEB	5		1.0000			0.0000	1.0000	1.0000
MAR	5		1.0000			0.0000	1.0000	1.0000
APR	5		1.0000			0.0000	1.0000	1.0000
MAY	5		1.0000	4	9	0.0000	1.0000	1.0000
JUN	10		1.0000	2		0.0000	1.0000	1.0000
JUL	8		1.0000	1		0.0000	1.0000	1.0000
AUG	7		1.0000			0.0000	1.0000	1.0000
SEPT	7	2	0.7143			0.0208	0.4314	0.9971
OCT	5		0.7143			0.0292	0.3796	1.0489
NOV-DEC	5		0.7143			0.0292	0.3796	1.0489
No. individual bear-years =		14						

3h. MALES ≥ 2 , 1980-1995

PERIOD	NO. AT RISK	NO. DEATHS	SURVIVAL	NO. CENSORE D	NO. ADDED	VARIANCE	LOWER CL	UPPER CL
JAN-FEB	34	0	1.0000	0	0	0.0000	1.0000	1.0000
MAR	34	0	1.0000	0	0	0.0000	1.0000	1.0000
APR	34	0	1.0000	0	3	0.0000	1.0000	1.0000
MAY	37	2	0.9459	5	21	0.0013	0.8751	1.0168
JUN	51	1	0.9274	8	5	0.0012	0.8588	0.9960
JUL	47	1	0.9077	2	0	0.0016	0.8288	0.9865
AUG	44	0	0.9077	2	0	0.0017	0.8262	0.9892
SEPT	42	5	0.7996	2	0	0.0031	0.6914	0.9079
OCT	35	0	0.7996	3	0	0.0037	0.6810	0.9182
NOV-DEC	32	0	0.7996	0	0	0.0040	0.6756	0.9236
No. individual bear-years =		63						

Table 4. Minimum brown bear survivorship rates in Subunit 13E based on radiomarked bears ≥ 2 years old during different time periods and for different sexes. In cases where I considered it likely that missing bears had been killed, they were treated as mortalities.

4a. MINIMUM FOR FEMALES 1980-1985

PERIOD	NO. AT RISK	NO. DEATHS	NO. SURVIVAL	NO. CENSORED	NO. ADDED	NO. VARIANCE	LOWER CL	UPPER CL
JAN-FEB	65		1.0000			0.0000	1.0000	1.0000
MAR	65		1.0000			0.0000	1.0000	1.0000
APR	65	1	0.9846		3	0.0002	0.9549	1.0143
MAY	67	1	0.9699		23	0.0004	0.9296	1.0102
JUN	89	1	0.9590	1	7	0.0004	0.9187	0.9994
JUL	94		0.9590	1		0.0004	0.9198	0.9983
AUG	93	1	0.9487			0.0005	0.9050	0.9924
SEPT	92	8	0.8662	2		0.0011	0.8015	0.9310
OCT	82		0.8662	2		0.0012	0.7976	0.9348
NOV-DEC	80		0.8662			0.0013	0.7968	0.9356
No. Individuals =			98					

4b. MINIMUM FOR FEMALES 1986-1990

PERIOD	NO. AT RISK	NO. DEATHS	NO. SURVIVAL	NO. CENSORED	NO. ADDED	NO. VARIANCE	LOWER CL	UPPER CL
JAN-FEB	89		1.0000			0.0000	1.0000	1.0000
MAR	89		1.0000			0.0000	1.0000	1.0000
APR	89	1	0.9888			0.0001	0.9670	1.0105
MAY	88	4	0.9438	1	1	0.0006	0.8971	0.9906
JUN	84		0.9438	3	9	0.0006	0.8960	0.9917
JUL	90	1	0.9333			0.0006	0.8835	0.9831
AUG	89		0.9333			0.0007	0.8833	0.9834
SEPT	89	2	0.9124	5		0.0008	0.8562	0.9685
OCT	82	1	0.9012			0.0010	0.8399	0.9625
NOV-DEC	81		0.9012			0.0010	0.8396	0.9629
No. individuals =			99					

4c. MINIMUM FOR FEMALES 1991-1995

PERIOD	NO. AT RISK	NO. DEATHS	NO. SURVIVAL	NO. CENSORED	NO. ADDED	NO. VARIANCE	LOWER CL	UPPER CL
JAN-FEB	77		1.0000			0.0000	1.0000	1.0000
MAR	77		1.0000			0.0000	1.0000	1.0000
APR	77		1.0000			0.0000	1.0000	1.0000
MAY	77		1.0000	1	24	0.0000	1.0000	1.0000
JUN	100		1.0000			0.0000	1.0000	1.0000
JUL	100	2	0.9800			0.0002	0.9528	1.0072
AUG	98	1	0.9700			0.0003	0.9367	1.0033
SEPT	97	5	0.9200	4		0.0007	0.8682	0.9718
OCT	88	1	0.9095			0.0009	0.8524	0.9667
NOV-DEC	87		0.9095			0.0009	0.8521	0.9670
No. individuals =			101					

4d. MINIMUM FOR FEMALES 1980-1995

PERIOD	NO. AT RISK	NO. DEATHS	NO. SURVIVAL	NO. CENSORED	NO. ADDED	NO. VARIANCE	LOWER CL	UPPER CL
JAN-FEB	231	0	1.0000	0	0	0.0000	1.0000	1.0000
MAR	231	0	1.0000	0	0	0.0000	1.0000	1.0000
APR	231	2	0.9913	0	3	0.0000	0.9794	1.0032
MAY	232	5	0.9700	2	48	0.0001	0.9483	0.9916
JUN	273	1	0.9664	4	16	0.0001	0.9454	0.9874
JUL	284	3	0.9562	1	0	0.0001	0.9329	0.9795
AUG	280	2	0.9494	0	0	0.0002	0.9244	0.9744
SEPT	278	15	0.8982	11	0	0.0003	0.8645	0.9319
OCT	252	2	0.8910	2	0	0.0003	0.8547	0.9273
NOV-DEC	248	0	0.8910	0	0	0.0003	0.8544	0.9276
No. individuals =			298					

4e. MINIMUM FOR FEMALES 1996-1997

PERIOD	NO. AT RISK	NO. DEATHS	NO. SURVIVAL	NO. CENSORED	NO. ADDED	NO. VARIANCE	LOWER CL	UPPER CL
JAN-FEB	30		1.0000			0.0000	1.0000	1.0000
MAR	30		1.0000			0.0000	1.0000	1.0000
APR	30	3	0.9000			0.0027	0.7982	1.0018
MAY	27		0.9000	1		0.0030	0.7926	1.0074
JUN	26		0.9000	1		0.0031	0.7906	1.0094
JUL	25	1	0.8640			0.0041	0.7391	0.9889
AUG	24		0.8640			0.0042	0.7365	0.9915
SEPT	24	1	0.8280	1		0.0049	0.6906	0.9654
OCT	22	2	0.7527			0.0064	0.5963	0.9091
NOV-DEC	20		0.7527			0.0070	0.5887	0.9168
No. individuals =			30					

4f. MNIMUM FOR MALES 1980-1990

PERIOD	NO. AT RISK	NO. DEATHS	NO. SURVIVAL	NO. CENSORED	NO. ADDED	NO. VARIANCE	LOWER CL	UPPER CL
JAN-FEB	29		1.0000			0.0000	1.0000	1.0000
MAR	29		1.0000			0.0000	1.0000	1.0000
APR	29		1.0000		3	0.0000	1.0000	1.0000
MAY	32	2	0.9375	1	12	0.0017	0.8563	1.0187
JUN	41	1	0.9146	6	5	0.0017	0.8328	0.9964
JUL	39	1	0.8912	1		0.0022	0.7989	0.9834
AUG	37		0.8912	2		0.0023	0.7965	0.9859
SEPT	35	3	0.8148	2		0.0035	0.6986	0.9310
OCT	30	1	0.7876	2		0.0044	0.6577	0.9175
NOV-DEC	27		0.7876			0.0049	0.6507	0.9245
No. individual s =			49					

4g. MINIMUM FOR MALES 1991-1995

PERIOD	NO. AT RISK	NO. DEATHS	NO. SURVIVAL	NO. CENSORED	NO. ADDED	NO. VARIANCE	LOWER CL	UPPER CL
JAN-FEB	5		1.0000			0.0000	1.0000	1.0000
MAR	5		1.0000			0.0000	1.0000	1.0000
APR	5		1.0000			0.0000	1.0000	1.0000
MAY	5	1	0.8000	3	9	0.0256	0.4864	1.1136
JUN	10		0.8000	2		0.0128	0.5783	1.0217
JUL	8		0.8000	1		0.0160	0.5521	1.0479
AUG	7		0.8000			0.0183	0.5350	1.0650
SEPT	7	2	0.5714			0.0200	0.2943	0.8486
OCT	5		0.5714			0.0280	0.2435	0.8993
NOV-DEC	5		0.5714			0.0280	0.2435	0.8993
No. individuals =			14					

4h. MINIMUM FOR MALES 1980-1995

PERIOD	NO. AT RISK	NO. DEATHS	NO. SURVIVAL	NO. CENSORED	NO. ADDED	NO. VARIANCE	LOWER CL	UPPER CL
JAN-FEB	34	0	1.0000	0	0	0.0000	1.0000	1.0000
MAR	34	0	1.0000	0	0	0.0000	1.0000	1.0000
APR	34	0	1.0000	0	3	0.0000	1.0000	1.0000
MAY	37	3	0.9189	4	21	0.0019	0.8346	1.0032
JUN	51	1	0.9009	8	5	0.0016	0.8231	0.9787
JUL	47	1	0.8817	2	0	0.0020	0.7950	0.9684
AUG	44	0	0.8817	2	0	0.0021	0.7921	0.9713
SEPT	42	5	0.7768	2	0	0.0032	0.6658	0.8878
OCT	35	1	0.7546	2	0	0.0040	0.6307	0.8784
NOV-DEC	32	0	0.7546	0	0	0.0044	0.6250	0.8841
No. individuals =			63					

Table 5. Adult brown bear survivorship in Subunit 13E based on radiomarked bears ≥ 5 years old.
Includes only known mortalities from all causes; possible mortalities counted as censored data.

5a. FEMALES ≥ 5 , 1980-1985

PERIOD	NO. AT RISK	NO. DEATHS	NO. SURVIVAL	NO. CENSORED	NO. ADDED	NO. VARIANCE	LOWER CL	UPPER CL
JAN-FEB	58		1.0000			0.0000	1.0000	1.0000
MAR	58		1.0000			0.0000	1.0000	1.0000
APR	58		1.0000	1	2	0.0000	1.0000	1.0000
MAY	59	1	0.9831		17	0.0003	0.9504	1.0157
JUN	75	1	0.9699	1	4	0.0004	0.9319	1.0080
JUL	77		0.9699	1		0.0004	0.9324	1.0075
AUG	76	1	0.9572			0.0005	0.9127	1.0017
SEPT	75	4	0.9061	2		0.0010	0.8433	0.9690
OCT	69		0.9061	2		0.0011	0.8406	0.9716
NOV-DEC	67		0.9061			0.0012	0.8397	0.9726
No. Individuals =			81					

5b. FEMALES ≥ 5 , 1986-1990

PERIOD	NO. AT RISK	NO. DEATHS	NO. SURVIVAL	NO. CENSORED	NO. ADDED	NO. VARIANCE	LOWER CL	UPPER CL
JAN-FEB	87		1.0000			0.0000	1.0000	1.0000
MAR	87		1.0000			0.0000	1.0000	1.0000
APR	87	1	0.9885			0.0001	0.9662	1.0108
MAY	86	2	0.9655	3		0.0004	0.9276	1.0034
JUN	81		0.9655	2	6	0.0004	0.9265	1.0046
JUL	85		0.9655	1		0.0004	0.9274	1.0036
AUG	84		0.9655			0.0004	0.9272	1.0039
SEPT	84	1	0.9540	5		0.0005	0.9103	0.9978
OCT	78	1	0.9418			0.0007	0.8914	0.9922
NOV-DEC	77		0.9418			0.0007	0.8910	0.9925
No. bear-years =			93					

5c. FEMALES ≥ 5 , 1991-1995

PERIOD	NO. AT RISK	NO. DEATHS	NO. SURVIVAL	NO. CENSORED	NO. ADDED	NO. VARIANCE	LOWER CL	UPPER CL
JAN-FEB	71		1.0000			0.0000	1.0000	1.0000
MAR	71		1.0000			0.0000	1.0000	1.0000
APR	71		1.0000			0.0000	1.0000	1.0000
MAY	71		1.0000		12	0.0000	1.0000	1.0000
JUN	83		1.0000			0.0000	1.0000	1.0000
JUL	83	1	0.9880			0.0001	0.9646	1.0113
AUG	82	1	0.9759			0.0003	0.9431	1.0087
SEPT	81	4	0.9277	3		0.0008	0.8734	0.9820
OCT	74	1	0.9152			0.0010	0.8544	0.9759
NOV-DEC	73		0.9152			0.0010	0.8540	0.9763
No. bear-years =			83					

5d. FEMALES ≥ 5 , 1980-1995

PERIOD	NO. AT RISK	NO. DEATHS	NO. SURVIVAL	NO. CENSORED	NO. ADDED	VARIANCE	LOWER CL	UPPER CL
JAN-FEB	216	0	1.0000	0	0	0.0000	1.0000	1.0000
MAR	216	0	1.0000	0	0	0.0000	1.0000	1.0000
APR	216	1	0.9954	1	2	0.0000	0.9863	1.0044
MAY	216	3	0.9815	3	29	0.0001	0.9638	0.9993
JUN	239	1	0.9774	3	10	0.0001	0.9588	0.9961
JUL	245	1	0.9734	2	0	0.0001	0.9536	0.9933
AUG	242	2	0.9654	0	0	0.0001	0.9428	0.9880
SEPT	240	9	0.9292	10	0	0.0003	0.8979	0.9605
OCT	221	2	0.9208	2	0	0.0003	0.8866	0.9550
NOV-DEC	217	0	0.9208	0	0	0.0003	0.8863	0.9553
No. bear-years =			257					

5e. FEMALES ≥ 5 , 1996-1997

PERIOD	NO. AT RISK	NO. DEATHS	NO. SURVIVAL	NO. CENSORED	NO. ADDED	VARIANCE	LOWER CL	UPPER CL
JAN-FEB	30		1.0000			0.0000	1.0000	1.0000
MAR	30		1.0000			0.0000	1.0000	1.0000
APR	30	3	0.9000			0.0027	0.7982	1.0018
MAY	27		0.9000	1		0.0030	0.7926	1.0074
JUN	26		0.9000	1		0.0031	0.7906	1.0094
JUL	25	1	0.8640			0.0041	0.7391	0.9889
AUG	24		0.8640			0.0042	0.7365	0.9915
SEPT	24	1	0.8280	1		0.0049	0.6906	0.9654
OCT	22	1	0.7904			0.0060	0.6391	0.9416
NOV-DEC	21		0.7904			0.0062	0.6356	0.9451

5f. MALES ≥ 5 , 1980-1990

PERIOD	NO. AT RISK	NO. DEATHS	NO. SURVIVAL	NO. CENSORED	NO. ADDED	VARIANCE	LOWER CL	UPPER CL
JAN-FEB	29		1.0000			0.0000	1.0000	1.0000
MAR	29		1.0000			0.0000	1.0000	1.0000
APR	29		1.0000		3	0.0000	1.0000	1.0000
MAY	32	2	0.9375	1	12	0.0017	0.8563	1.0187
JUN	41	1	0.9146	6	5	0.0017	0.8328	0.9964
JUL	39	1	0.8912	1		0.0022	0.7989	0.9834
AUG	37		0.8912	2		0.0023	0.7965	0.9859
SEPT	35	3	0.8148	2		0.0035	0.6986	0.9310
OCT	30		0.8148	3		0.0041	0.6893	0.9403
NOV-DEC	27		0.8148			0.0046	0.6825	0.9471
No. bear-years =			49					

5g. MALES ≥ 5 , 1991-1995

PERIOD	NO. AT RISK	NO. DEATHS	NO. SURVIVAL	NO. CENSORED	NO. ADDED	VARIANCE	LOWER CL	UPPER CL
JAN-FEB	5		1.0000			0.0000	1.0000	1.0000
MAR	5		1.0000			0.0000	1.0000	1.0000
APR	5		1.0000			0.0000	1.0000	1.0000
MAY	5		1.0000	4	9	0.0000	1.0000	1.0000
JUN	10		1.0000	2		0.0000	1.0000	1.0000
JUL	8		1.0000	1		0.0000	1.0000	1.0000
AUG	7		1.0000			0.0000	1.0000	1.0000
SEPT	7	2	0.7143			0.0208	0.4314	0.9971
OCT	5		0.7143			0.0292	0.3796	1.0489
NOV-DEC	5		0.7143			0.0292	0.3796	1.0489
No. bear-years =			14					

5h. MALES ≥ 5 , 1980-1995

PERIOD	NO. AT RISK	NO. DEATHS	NO. SURVIVAL	NO. CENSORED	NO. ADDED	VARIANCE	LOWER CL	UPPER CL
JAN-FEB	34	0	1.0000	0	0	0.0000	1.0000	1.0000
MAR	34	0	1.0000	0	0	0.0000	1.0000	1.0000
APR	34	0	1.0000	0	3	0.0000	1.0000	1.0000
MAY	37	2	0.9459	5	21	0.0013	0.8751	1.0168
JUN	51	1	0.9274	8	5	0.0012	0.8588	0.9960
JUL	47	1	0.9077	2	0	0.0016	0.8288	0.9865
AUG	44	0	0.9077	2	0	0.0017	0.8262	0.9892
SEPT	42	5	0.7996	2	0	0.0031	0.6914	0.9079
OCT	35	0	0.7996	3	0	0.0037	0.6810	0.9182
NOV-DEC	32	0	0.7996	0	0	0.0040	0.6756	0.9236
No. bear-years =			63					

Table 6. Survivorship of brown bears radiomarked 1996-1997 in subunit 13A and in Subunits 13A and 13E combined. All bears still radiomarked in September 1997 were treated as censored in October 1997. Missing bears that could have been killed by hunters were treated as censored data so reported survivorship is the maximum rate.

6a. 13A FEMALES ≥ 2 , 1996-1997.

PERIOD	NO. AT RISK	NO. DEATHS	NO. SURVIVAL	NO. CENSORED	NO. ADDED	NO. VARIANCE	LOWERCL	UPPERCL
JAN-FEB	15		1.0000			0.0000	1.0000	1.0000
MAR	15		1.0000			0.0000	1.0000	1.0000
APR	15		1.0000	1		0.0000	1.0000	1.0000
MAY	14	1	0.9286		30	0.0044	0.7986	1.0586
JUN	43		0.9286	2		0.0014	0.8544	1.0027
JUL	41		0.9286			0.0015	0.8526	1.0045
AUG	41	2	0.8833			0.0022	0.7909	0.9756
SEPT	39	1	0.8606			0.0026	0.7598	0.9615
OCT	38		0.8606	23		0.0027	0.7585	0.9628
NOV-DEC	15		0.8606			0.0069	0.6980	1.0232
No. Individuals =			45					

6b. 13A FEMALES ≥ 5 DURING 1996-1997

PERIOD	NO. AT RISK	NO. DEATHS	NO. SURVIVAL	NO. CENSORED	NO. ADDED	NO. VARIANCE	LOWERCL	UPPERCL
JAN-FEB	14		1.0000			0.0000	1.0000	1.0000
MAR	14		1.0000			0.0000	1.0000	1.0000
APR	14		1.0000	1		0.0000	1.0000	1.0000
MAY	13		1.0000	2	21	0.0000	1.0000	1.0000
JUN	32		1.0000			0.0000	1.0000	1.0000
JUL	32		1.0000			0.0000	1.0000	1.0000
AUG	32	1	0.9688			0.0009	0.9094	1.0281
SEPT	31	1	0.9375			0.0018	0.8550	1.0200
OCT	30		0.9375	19		0.0018	0.8536	1.0214
NOV-DEC	11		0.9375			0.0050	0.7990	1.0760
No. Individuals =			35					

6c. 13A MALES ≥ 2 DURING 1996-1997

PERIOD	NO. AT RISK	NO. DEATHS	NO. SURVIVAL	NO. CENSORED	NO. ADDED	NO. VARIANCE	LOWERCL	UPPERCL
JAN-FEB	3		1.0000			0.0000	1.0000	1.0000
MAR	3		1.0000			0.0000	1.0000	1.0000
APR	3		1.0000			0.0000	1.0000	1.0000
MAY	3		1.0000	5	19	0.0000	1.0000	1.0000
JUN	17		1.0000	1		0.0000	1.0000	1.0000
JUL	16		1.0000	4		0.0000	1.0000	1.0000
AUG	12	1	0.9167			0.0058	0.7669	1.0664
SEPT	11	4	0.5833	1		0.0129	0.3608	0.8059
OCT	6		0.5833	3		0.0236	0.2820	0.8846
NOV-DEC	3		0.5833			0.0473	0.1572	1.0094
No. individuals =			22					

6d. 13A AND 13E FEMALES \geq 2, 1996-1997

PERIOD	NO. AT RISK	NO. DEATHS	SURVIVAL	NO. CENSORED	NO. ADDED	VARIANCE	LOWER CL	UPPER CL
JAN-FEB	45		1.0000			0.0000	1.0000	1.0000
MAR	45		1.0000			0.0000	1.0000	1.0000
APR	45	3	0.9333	1		0.0013	0.8629	1.0037
MAY	41	1	0.9106	1	30	0.0018	0.8272	0.9939
JUN	69		0.9106	3		0.0011	0.8463	0.9748
JUL	66	1	0.8968			0.0013	0.8273	0.9663
AUG	65	2	0.8692			0.0015	0.7928	0.9456
SEPT	63	2	0.8416	1		0.0018	0.7589	0.9243
OCT	60	1	0.8276	23		0.0020	0.7406	0.9145
NOV-DEC	36		0.8276			0.0033	0.7153	0.9398

6e. 13A AND 13E FEMALES \geq 5, 1996-1997

PERIOD	NO. AT RISK	NO. DEATHS	SURVIVAL	NO. CENSORED	NO. ADDED	VARIANCE	LOWER CL	UPPER CL
JAN-FEB	44		1.0000			0.0000	1.0000	1.0000
MAR	44		1.0000			0.0000	1.0000	1.0000
APR	44	3	0.9318	1		0.0013	0.8599	1.0037
MAY	40		0.9318	3	21	0.0015	0.8564	1.0072
JUN	58		0.9318	1		0.0010	0.8692	0.9944
JUL	57	1	0.9155			0.0012	0.8464	0.9846
AUG	56	1	0.8991			0.0015	0.8243	0.9739
SEPT	55	2	0.8664	1		0.0018	0.7827	0.9501
OCT	52	1	0.8498	19		0.0021	0.7602	0.9393
NOV-DEC	32		0.8498			0.0034	0.7356	0.9639
No. Individuals =			65					

Table 7. Survivorship from nonhuman causes of mortality for brown bears radiomarked in GMU 13E during 1989-1995 (see text for description of each case). Bears killed by hunters and missing bears were counted as censored data so indicated survivorship is the maximum rate.

7a. FEMALES ≥ 2 DURING 1980-1995

PERIOD	NO. AT RISK	NO. DEATHS	NO. SURVIVAL	NO. CENSORE	NO. ADDED VARIANCE	LOWER CL	UPPER CL
			D				
JAN-FEB	231		1.0000		0.0000	1.0000	1.0000
MAR	231		1.0000		0.0000	1.0000	1.0000
APR	231		1.0000	2	3	0.0000	1.0000
MAY	232		1.0000	7	48	0.0000	1.0000
JUN	273	1	0.9963	4	16	0.0000	0.9892
JUL	284	1	0.9928	3		0.0000	0.9831
AUG	280		0.9928	2		0.0000	0.9830
SEPT	278		0.9928	26		0.0000	0.9829
OCT	252	2	0.9849	2		0.0001	0.9700
NOV-DEC	248		0.9849			0.0001	0.9699
No. Individuals =			298				1.0000

7b. FEMALES ≥ 5 DURING 1980-1995

PERIOD	NO. AT RISK	NO. DEATHS	NO. SURVIVAL	NO. CENSORE	NO. ADDED VARIANCE	LOWER CL	UPPER CL
			D				
JAN-FEB	216		1.0000		0.0000	1.0000	1.0000
MAR	216		1.0000		0.0000	1.0000	1.0000
APR	216		1.0000	2	2	0.0000	1.0000
MAY	216		1.0000	6	29	0.0000	1.0000
JUN	239	1	0.9958	3	10	0.0000	0.9876
JUL	245	1	0.9918	2	0	0.0000	0.9805
AUG	242		0.9918	2		0.0000	0.9804
SEPT	240		0.9918	19		0.0000	0.9804
OCT	221	2	0.9828	2		0.0001	0.9658
NOV-DEC	217		0.9828			0.0001	0.9656
No. individuals =			257				0.9999

Appendix A. Listing of brown bears marked in GMU 13 shot by hunters and natural mortalities during 1980-1997.

Year	Area	ID	Sex	Age	Active		Comments
						Collar?	
1997	13A	538	M	4	yes	9/14/97	cert 511459, shot in 13E
1997	13A	534	M	2	yes	9/14/97	cert 519351
1997	13A	393	F	16	yes	9/20/97	had 2 yearlings, cert 511850
1997	13A	568	M	3	no	8/28/97	cert 519314
1997	13E	492	M	7	no	10/4/97	cert 519370
1997	13E	501	F	6	yes	8/10/97	cert 511806
1997	13E	503	F	6	yes	9/5/97	cert 511820
1997	13E	"489"?	M		no	8/26/97	cert 511816
1997	13E	516	M	6	no	4/9/97	cert 511167
1996	13A	559	M	7	yes	9/16/96	cert 523076, shot in 14B
1996	13A	558	M	2	yes	9/1/96	cert 512928, inadvert. kill
1996	13A	557	M	2	no	9/1/96	cert 523082, shot w/ 588
1996	13A	561	F	2	no	9/5/96	cert 523088
1996	13A	539	F	3	yes	5/27/96	cert 512875
1996	13E	?	F	18	no	9/1/96	cert 512935 (not "272")
1996	13E	344	F	20	no	9/18/96	cert 511751
1996	13E	488	F	15	no	9/13/96	collar prev. shed cert#512930
1996	13E	500	M	6	no	8/20/96	cert 512899
1996	13E	472	F	21	no	8/14/96	collar prev. cert#512910
1996	13E	515	M	6	no	4/13/96	cert 506830
1996	13E	506	F	5	yes	4/7/96	cert 511447
1995	13E	521	M	2	yes	9/3/95	cert 513617
1995	13E	520	F	9	yes	9/2/95	cert 513620
1995	13E	306	F	18	yes	9/7/95	cert 521332
1995	13E	510	M	22	no	9/14/95	cert 512560
1995	13E	522	F	2	no	9/5/95	cert 511311
1995	13E	511	F	2	no	8/16/95	cert 510382, marked as coy
1995	13E	461	F	16	yes	8/22/95	cert 513615
1995	13E	403	F	18	no	8/6/95	cert 521326
1995	13E	385	F	14	no	4/10/95	cert 506797
1995	13E	281	F	18	yes		natural mort
1995	13E	437	F	12	yes		natural mort
1995	13E	498	F	22	yes		natural mort
1994	13E	490	M	4	no	5/6/94	cert 512470
1994	13E	495	M	3	no	9/2/94	cert 512490
1994	13E	340	F	16	yes	9/9/94	cert 511090
1994	13E	447	F	16	no	9/5/94	cert 512516
1994	13E	479	M	9	no	9/29/94	cert 610366, ID uncertain
1993	13E	237	M	24	no	4/22/93	cert 512951, '79 transplant
1993	13E	382	M	11	no	5/16/93	cert 516023, shot 13D

Appendix A Continued

Year	Area	ID	Sex	Age	Active Collar?	Date Shot	Comments
1993	13E	400	M	30	no	5/1/93	cert 506201
1993	13E	513	F	4	yes	July	DLP
1993	13E	464	M	9	no	9/11/93	cert 512355
1993	13E	388	F		yes	9/1/93	cert 512361
1993	13E	494	M	5	yes	9/6/93	cert 512354
1992	13E	Cub 002	M	5	no	4/3/92	w/273 in '87, cert 75341
1992	13E	Cub 001	F	5	no	4/25/92	w/273 in '8, cert 85202
1992		??	M	6	yes	4/20/92	# 78651, Harry's ("138/136"?)
1992	13E	282	M	16	no	6/1/92	cert 85216
1992	13E	220	F	19	no	9/17/92	cert 510301, capt. 1978
1992	13E	334	F	21	no	9/10/92	cert 512283
1991	13E	468	F	5	no	4/20/91	cert 84606, marked as coy
1991	13E	466	F	7	no	4/14/91	cert 78314
1991	13E	214	M	15	no	9/10/91	cert 78059, '78 capture
1991	13E	407	F	12	no	9/17/91	cert 76869
1991	13E	24	M	7	no	9/30/91	cert 71801, coy w/340 in '84
1991	13E	420	F	26	no	fall	
1990	13E	309/440	M	15	no	4/15/90	cert 68842
1990	13E	08	F	6	no	4/21/90	cert 68840, 'coy w/337 in '84
1990	13E	458	F	21	no	5/10/90	cert 68845
1989	13E	468	F	3	no	9/1/89	cert 73016, ID ?
1989	13E	453	F	9	yes	4/17/89	cert 73095, neck infected
1989	13E	23	F	5	no	4/21/89	cert 70489 coy w/340 in '84
1989	13E	292	F	12	no	5/6/89	cert 73097
1989	13E	457	M	10	no	9/3/89	cert 73640
1989	13E	381	F	10	yes	9/13/80	cert 74019
1989	13E	455	M	11	no	9/29/89	cert 73974
1989	13E	425	F	19	yes		shot?
1988	13E	421	M	5	no	9/2/88	cert 70333, shot 14A
1988	13E	xx	F	2	no	9/3/88	cert 70401, 460's coy in '86
1988	13E	473	F	7	no	9/15/88	cert 68608
1988	13E	??	M		no	4/28/88	cert 59945, collar scar, no marks
1988	13E	341	F	13	yes	12/31/89	den death
1987	13E	399	M	13	no	4/16/87	cert 58082
1987	13E	456	F	7	yes	5/23/87	cert 58090
1987	13E	477	F	2	no	9/4/87	cert 72951, ears infected
1987	13E	470	M	2	no	9/2/87	cert 69710
1986	13E	222	M	13	no	4/29/86	cert 57267, '78 capt. ID ??
1986	13E	225	M	12	no	5/1/86	cert 57268, neck infected, '78

Appendix A Continued

Year	Area	ID	Sex	Age	Active Collar?	Date Shot	Comments
1986	13E	417	M	3	no	5/18/86	cert 58051
1986	13E	398	F	5	yes	5/1/86	cert 59809
1986	13E	429	F	2	no	9/4/86	cert 58059
1986	13E	442	M	14	no	9/9/86	cert 62141, unit 14B
1986	13E	427	M	4	yes	9/14/86	cert 55709
1986	13E	315	F	8	no*	9/15/86	cert 61584, *premature failure
1986	13E	427	M	3	no?	spring	
1985	13E	422	M	7	yes	6/5/85	no cert., natural mort.??
1985	13E	293	M	8	no	5/4/85	cert 59460
1985	13E	397	F	4	yes	9/4/85	cert 60554
1985	13E	313	F	14	yes	9/6/85	cert 59532
1985	13E	379	F	8	yes	9/10/85	cert 61605, infected
1985	13E	339/450	M	4	no	9/11/95	cert 57935
1984	13E	224	M	9	no	4/19/84	cert 56531, ID uncertain, '78 cap.
1984	13E	240	F	10	no	5/13/84	cert 58955, '79 capt.
1984	13E	392	M	3	no	4/29/84	cert 58970
1984	13E	386	M	3	yes	5/2/84	cert 58873
1984	13E	227	M	15	yes	5/2/84	cert 58879, '78 capt.
1984	13E	391	M	3	no	9/1/84	cert 57487
1984	13E	394	F	7	yes	9/24/84	cert 57488
1984	13E	279	M	13	yes	9/5/84	cert 46290
1984	13E	286	M	3	no	9/25/84	cert 57489
1984	13E	344	F	8		fall	
1984	13E	384	F	13		Sept.	shot?
1984	13E	342	M	5			died, NS
1984	13E	312	F	14			died, NS
1983	13E	247	M	12	no	9/12/83	cert 51324, '79 capt.
1983	13E	228	M	12	no	9/9/83	cert 52653, ID?, '78 capt
1983	13E	380	F	16	yes	9/21/83	cert 52656
1983	13E	260	M	8	no	9/13/83	cert 52709, '79 capt.
1983	13E	205	M	9	no	4/29/83	cert 55102, '78 capt.
1983	13E	395	F	3	yes	9/4/83	cert 55106
1983	13E	201	M	14	no	4/18/83	cert 55193, '78 capt.
1983	13E	308	M	9	no	9/27/83	cert 56229
1983	13E	389	M	2	no		died
1982	13E	332	F	3	no	fall	shot
1982	13E	331	F	6		8/1/82	natural mortality?
1981	13E	333	M	2	no	9/3/81	cert 51555
1981	13E	334	F	10		Sept.	suspect shot
1981	13E	308b	F	6		Aug.	natural mortality?
1981	13E	297	M	2	no	9/18/81	cert 51656

Appendix A Continued

Year	Area	ID	Sex	Age	Active		Comments
					Collar?	Date Shot	
1981	13E	294	M	10		Aug.	Nat.mortality?
1981	13E	284	M	3	no	5/18/81	cert. 46152
1981	13E	206	F	16	no	9/3/81	cert. 50510, '78 capt.
1981	13E	268	F	20	yes?	9/7/81	cert 51208, '79 capt.
1981	13E	243	M	5	yes	9/6/81	cert 51213, '79 capt.
1980	13E	311	M	2	no	9/16/80	cert 41724
1980	13E	230	M		no	5/25/80	cert 33906, '79 capt.
1980	13E	217	M	5	yes	9/2/80	cert 44929, '78 capt.
1980	13E	218	M	6		9/6/80	cert 41568, '78 capt.
1980	13E	270	F	2	no	9/4/80	cert 43313
1980	13E	265	M	5	no	5/10/80	cert 44853
1980	13E	268	M	5	no	5/16/80	cert 44880, ID??

Appendix B. Status of radiomarked brown bears in Subunit 13E by year during 1980-1997. Data were used for calculation of survivorship rates. All radiomarked bears were treated as censored at the end of September 1997.

ID	Year	Sex	Age	Date Radioed	Repro. Status	Mortality Status	J-F M A M J J A S O N-D Comments												
							J	F	M	A	M	J	J	A	S	O	N-D	Comments	
281	1980	F	3	4/22/80	ALONE	ALIVE		8	31	30	31	31	31	30	31	61			
283	1980	F	12	4/22/80	W/@2	ALIVE		8	31	30	31	31	30	31	31	61			
299	1980	F	13	5/4/80	YLG	ALIVE			27	30	31	31	30	31	31	61			
312	1980	F	10	5/7/80	W/@2	ALIVE				24	30	31	31	30	31	31	61		
308B	1980	F	5	5/6/80	ALONE	ALIVE				25	30	31	31	30	31	31	61		
313	1980	F	9	5/7/80	W/@2	ALIVE				24	30	31	31	30	31	31	61		
277	1980	F	10	4/10/80	YLG	CENSOR			20	31	30	31	31	30	31		SHED IN DEN		
281	1981	F	4		ALONE	ALIVE	59	31	30	31	30	31	31	30	31	61			
283	1981	F	13		COY	ALIVE	59	31	30	31	30	31	31	30	31	61			
335	1981	F	2	5/5/81	ALONE	ALIVE			26	30	31	31	30	31	31	61			
337	1981	F	13	5/6/81	COY	ALIVE			25	30	31	31	30	31	31	61			
340	1981	F	3	5/6/81	ALONE	ALIVE			25	30	31	31	30	31	31	61			
299	1981	F	14		W/@2	ALIVE	59	31	30	31	30	31	31	30	31	61			
312	1981	F	11		COY	ALIVE	59	31	30	31	30	31	31	30	31	61			
313	1981	F	10		COY	ALIVE	59	31	30	31	30	31	31	30	31	61	COY LOST IN MAY		
331	1981	F	6	5/5/81	W/@2	ALIVE			26	30	31	31	30	31	31	61			
341	1981	F	6	5/7/81	ALONE	ALIVE			24	30	31	31	30	31	31	61			
344	1981	F	5	5/8/81	COY	ALIVE			23	30	31	31	30	31	31	61			
334	1981	F	10	5/5/81	W/@2	CENSOR			26	30	31	31	31	16			WENT MISSING, SHOT 9/92		
308B	1981	F	6		ALONE	DIED	59	31	30	31	30	31	6				RECAPTURE MORTALITY		
281	1982	F	5		ALONE	ALIVE	59	31	30	31	30	31	31	30	31	61			
283	1982	F	14		YLG	ALIVE	59	31	30	31	30	31	31	30	31	61	LOST YLG IN MAY		
335	1982	F	3		ALONE	ALIVE	59	31	30	31	30	31	31	30	31	61			
337	1982	F	14		YLG	ALIVE	59	31	30	31	30	31	31	30	31	61			
340	1982	F	4		ALONE	ALIVE	59	31	30	31	30	31	31	30	31	61			
299	1982	F	15		COY	ALIVE	59	31	30	31	30	31	31	30	31	61	COY LOST IN JUNE		
312	1982	F	12		YLG	ALIVE	59	31	30	31	30	31	31	30	31	61			

Appendix B Continued

ID	Year	Sex	Age	Date Radioed	Repro. Status	Mortality Status	Comments													
							J-F	M	A	M	J	J	A	S	O	N-D				
313	1982	F	11		COY	ALIVE	59	31	30	31	30	31	31	30	31	61				
344	1982	F	6		YLG	ALIVE	59	31	30	31	30	31	31	30	31	61	LOST YLG IN LATE JULY			
379	1982	F	5	6/11/82	COY	ALIVE					19	31	31	30	31	61				
380	1982	F	15	6/12/82	YLG	ALIVE					18	31	31	30	31	61				
381	1982	F	3	6/12/82	ALONE	ALIVE					18	31	31	30	31	61				
341	1982	F	7		COY	CENSOR	59	31	30	31	30	15					COLLAR FAILURE?			
331	1982	F	7		ALONE	DIED	59	31	30	31	29						MORT. CAUSE ?			
281	1983	F	6		COY	ALIVE	59	31	30	31	30	31	31	30	31	61	COY LOST IN JUNE			
283	1983	F	15		COY	ALIVE	59	31	30	31	30	31	31	30	31	61	LOST COY IN MAY			
335	1983	F	4		ALONE	ALIVE	59	31	30	31	30	31	31	30	31	61				
337	1983	F	15		W/@2	ALIVE	59	31	30	31	30	31	31	30	31	61				
340	1983	F	5		ALONE	ALIVE	59	31	30	31	30	31	31	30	31	61				
388	1983	F	14	5/14/83	W/@2	ALIVE					17	30	31	31	30	61				
396	1983	F	13	5/16/83	W/@2	ALIVE					15	30	31	31	30	61				
299	1983	F	16		COY	ALIVE	59	31	30	31	30	31	31	30	31	61				
312	1983	F	13		W/@2	ALIVE	59	31	30	31	30	31	31	30	31	61				
313	1983	F	12		YLG	ALIVE	59	31	30	31	30	31	31	30	31	61				
315	1983	F	5	5/18/83	ALONE	ALIVE					13	30	31	31	30	61				
344	1983	F	7		COY	ALIVE	59	31	30	31	30	31	31	30	31	61				
379	1983	F	6		YLG	ALIVE	59	31	30	31	30	31	31	30	31	61				
381	1983	F	4		ALONE	ALIVE	59	31	30	31	30	31	31	30	31	62				
384	1983	F	12	5/15/83	W/@2	ALIVE					16	30	31	31	30	61				
385	1983	F	2	5/14/83	W/MOM	ALIVE					17	30	31	31	30	61				
394	1983	F	6	5/15/83	COY	ALIVE					16	30	31	31	30	61	COY LOST IN MAY			
403	1983	F	6	5/18/83	COY	ALIVE					13	30	31	31	30	61				
407	1983	F	4	5/19/83	ALONE	ALIVE					12	30	31	31	30	61				
393	1983	F	2	5/15/83	W/MOM	CENSOR					16	30	31	31	27		POSSIBLY SHOT			
380	1983	F	16		W/@2	SHOT	59	31	30	31	30	31	31	21						
395	1983	F	3	5/15/83	ALONE	SHOT					16	30	31	31	4					
281	1984	F	7		COY	ALIVE	59	31	30	31	30	31	31	30	31	61	COY LOST IN MAY			

Appendix B Continued

ID	Year	Sex	Age	Date Radioed	Repro. Status	Mortality Status	J-F M A M J J A S O N-D												Comments
							J	F	M	A	M	J	J	A	S	O	N-D		
283	1984	F	16		ALONE	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
335	1984	F	5		COY	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
337	1984	F	16		COY	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
340	1984	F	6		COY	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
388	1984	F	15		COY	ALIVE	59	31	30	31	30	31	31	31	30	31	61	COY LOST IN MAY	
396	1984	F	14		COY	ALIVE	59	31	30	31	30	31	31	31	30	31	61	COY LOST IN JUNE-JULY	
423	1984	F	21	5/17/84	COY	ALIVE			14	30	31	31	31	30	31	61			
299	1984	F	17		YLG	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
313	1984	F	13		W/@2	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
379	1984	F	7		W/@2	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
381	1984	F	5		ALONE	ALIVE	59	31	30	31	30	31	31	31	30	31	62		
385	1984	F	3		ALONE	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
403	1984	F	7		YLG	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
420	1984	F	19	5/14/84	YLG	ALIVE			17	30	31	31	31	30	31	61			
425	1984	F	14	6/1/84	ALONE	ALIVE				29	31	31	30	31	31	30	61		
407	1984	F	5		ALONE	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
315	1984	F	6		ALONE	CENSOR	59	31	30	31	30	31	31	31	30	24		WENT MISSING, SHOT 9/86	
344	1984	F	8		YLG	CENSOR	59	31	30	31	30	31	31	31	6		LOST YLG IN MAY, SHOT IN '96		
384	1984	F	13		COY	CENSOR	59	31	30	31	30	31	31	31	6		POSSIBLY SHOT?		
312	1984	F	14		COY	DIED	59	31	30	17								SHOT DURING RECAPTURE	
394	1984	F	7		ALONE	SHOT	59	31	30	31	30	31	31	31	23				
273	1985	F	9	6/9/85	ALONE	ALIVE			24	31	30	31	31	30	31	61			
281	1985	F	8		COY	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
283	1985	F	17		COY	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
314	1985	F	7	12/6/16	YLG	ALIVE				29	31	31	30	31	31	30	61		
335	1985	F	6		YLG	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
337	1985	F	17		YLG	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
340	1985	F	7		YLG	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
388	1985	F	16		COY	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
396	1985	F	15		COY	ALIVE	59	31	30	31	30	31	31	31	30	31	61	COY LOST IN JUNE	

Appendix B Continued

ID	Year	Sex	Age	Date Radioed	Repro. Status	Mortality Status	J-F M A M J A S O N-D Comments											
							J	F	M	A	M	J	A	S	O	N-D	Comments	
423	1985	F	22		YLG	ALIVE	59	31	30	31	30	31	31	30	31	61		
437	1985	F	2	6/3/85	ALONE	ALIVE					27	31	31	30	31	61		
447	1985	F	7	6/5/85	ALONE	ALIVE					25	31	31	30	31	61		
341	1985	F	10	6/3/83	ALONE	ALIVE					27	31	31	30	31	61	RECAPTURE	
381	1985	F	6		COY	ALIVE	59	31	30	31	30	31	31	30	31	62		
398	1985	F	6	6/1/85	ALONE	ALIVE					29	31	31	30	31	61		
403	1985	F	8		ALONE	ALIVE	59	31	30	31	30	31	31	30	31	61		
420	1985	F	20		W/@2	ALIVE	59	31	30	31	30	31	31	30	31	61		
425	1985	F	15		COY	ALIVE	59	31	30	31	30	31	31	30	31	61		
407	1985	F	6		ALONE	ALIVE	59	31	30	31	30	31	31	30	31	61		
299	1985	F	18		W/@2	CENSOR	59	31	30								MAY HAVE BEEN SHOT BUT ??	
385	1985	F	4		ALONE	CENSOR	59	31	30	31	9						REMOVED COLLAR	
313	1985	F	14		COY	SHOT	59	31	30	31	30	31	31	31	6		PROB. ILEGAL KILL (W/COY)	
379	1985	F	8		ALONE	SHOT	59	31	30	31	30	31	31	31	10			
397	1985	F	4	6/4/85	ALONE	SHOT					26	31	31	4				
273	1986	F	10		ALONE	ALIVE	59	31	30	31	30	31	31	30	31	61		
281	1986	F	9		YLG	ALIVE	59	31	30	31	30	31	31	30	31	61		
283	1986	F	18		YLG	ALIVE	59	31	30	31	30	31	31	30	31	61		
314	1986	F	8		W/@2	ALIVE	59	31	30	31	30	31	31	30	31	61		
335	1986	F	7		W/@2	ALIVE	59	31	30	31	30	31	31	30	31	61		
337	1986	F	18		W/@2	ALIVE	59	31	30	31	30	31	31	30	31	61		
340	1986	F	8		ALONE	ALIVE	59	31	30	31	30	31	31	30	31	61		
388	1986	F	17		YLG	ALIVE	59	31	30	31	30	31	31	30	31	61		
396	1986	F	16		ALONE	ALIVE	59	31	30	31	30	31	31	30	31	61		
423	1986	F	23		W/@2	ALIVE	59	31	30	31	30	31	31	30	31	61		
460	1986	F	7	6/4/85	COY	ALIVE					26	31	31	30	31	61		
461	1986	F	5	6/5/96	COY	ALIVE					25	31	31	30	31	61	COY LOST IN JUNE	
341	1986	F	11		COY	ALIVE	59	31	30	31	30	31	31	30	31	61		
381	1986	F	7		YLG	ALIVE	59	31	30	31	30	31	31	30	31	62		
403	1986	F	9		COY	ALIVE	59	31	30	31	30	31	31	30	31	61		

Appendix B Continued

ID	Year	Sex	Age	Date	Repro.	Mortality	Status	J-F	M	A	M	J	J	A	S	O	N-D	Comments
				Radioed	Status													
425	1986	F	16		YLG	ALIVE		59	31	30	31	30	31	31	30	31	61	YLG LOST IN JUNE-JULY
453	1986	F	4	6/3/86	COY	ALIVE						27	31	31	30	31	61	
454	1986	F	4	6/3/86	ALONE	ALIVE						27	31	31	30	31	61	
456	1986	F	6	6/4/86	ALONE	ALIVE						26	31	31	30	31	61	
457	1986	F	7	6/4/86		ALIVE						26	31	31	30	31	61	
458	1986	F	17	6/4/86	ALONE	ALIVE						26	31	31	30	31	61	
462	1986	F	7	6/5/86	YLG	ALIVE						25	31	31	30	31	61	
465	1986	F	3	6/5/86	ALONE	ALIVE						25	31	31	30	31	61	
407	1986	F	7		ALONE	ALIVE		59	31	30	31	30	31	31	30	31	61	
437	1986	F	3		ALONE	CENSOR		59	31	30	31	30	31	31	24		sHED COLLAR	
447	1986	F	8		COY	CENSOR		59	31	30	31	30	31	31	6		COLLAR SHED AFTER 9/5, SHOT 9/94	
420	1986	F	21		COY	CENSOR		59	31	30	31	30	31	31	5		COY LOST IN JUNE-JULY, SHOT IN '91	
398	1986	F	7		ALONE	SHOT		59	31	30	1							
273	1987	F	11		COY	ALIVE		59	31	30	31	30	31	31	30	31	61	
281	1987	F	10		W/@2	ALIVE		59	31	30	31	30	31	31	30	31	61	
283	1987	F	19		W/@2	ALIVE		59	31	30	31	30	31	31	30	31	61	
314	1987	F	9		COY	ALIVE		59	31	30	31	30	31	31	30	31	61	
335	1987	F	8		ALONE	ALIVE		59	31	30	31	30	31	31	30	31	61	
337	1987	F	19		W/@3	ALIVE		59	31	30	31	30	31	31	30	31	61	
340	1987	F	9		COY	ALIVE		59	31	30	31	30	31	31	30	31	61	COY LOST IN MAY
388	1987	F	18		W/@2	ALIVE		59	31	30	31	30	31	31	30	31	61	
396	1987	F	17		ALONE	ALIVE		59	31	30	31	30	31	31	30	31	61	
423	1987	F	24		COY	ALIVE		59	31	30	31	30	31	31	30	31	61	COY LOST IN JUNE
460	1987	F	8		YLG	ALIVE		59	31	30	31	30	31	31	30	31	61	
461	1987	F	6		COY	ALIVE		59	31	30	31	30	31	31	30	31	61	
341	1987	F	12		YLG	ALIVE		59	31	30	31	30	31	31	30	31	61	
381	1987	F	8		W/@2	ALIVE		59	31	30	31	30	31	31	30	31	62	
425	1987	F	17		ALONE	ALIVE		59	31	30	31	30	31	31	30	31	61	
453	1987	F	5		YLG	ALIVE		59	31	30	31	30	31	31	30	31	61	
458	1987	F	18		COY	ALIVE		59	31	30	31	30	31	31	30	31	61	COY LOST IN JUNE

Appendix B Continued

ID	Year	Sex	Age	Date Radioed	Repro. Status	Mortality Status	J-F M A M J J A S O N-D Comments											
							J	F	M	A	M	J	J	A	S	O	N-D	Comments
462	1987	F	8		COY	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
459	1987	F	4	5/30/87	ALONE	ALIVE				1	30	31	31	30	31	61		
481	1987	F	14	6/5/87	YLG	ALIVE				25	31	31	30	31	31	61		
403	1987	F	10		YLG	CENSOR	59	31	30	31	30	31	31	31	24		COLLAR FAILED, BEAR SHOT IN '95	
407	1987	F	8		ALONE	CENSOR	59	31	30	31	3						FAILED COLLAR, BEAR SHOT IN '91	
454	1987	F	5		COY	CENSOR	59	31	30	11							COLLAR SHED	
457	1987	F	8			CENSOR	59	31	30	31	7						COLLAR REMOVED	
466	1987	F	4		ALONE	CENSOR	59	31	30	31	8						REMOVED COLLAR	
456	1987	F	7		ALONE	SHOT	59	31	30	23								
273	1988	F	12		YLG	ALIVE	59	31	30	31	30	31	31	30	31	61		
281	1988	F	11		COY	ALIVE	59	31	30	31	30	31	31	30	31	61		
283	1988	F	20		W/@3	ALIVE	59	31	30	31	30	31	31	30	31	61		
314	1988	F	10		YLG	ALIVE	59	31	30	31	30	31	31	30	31	61		
335	1988	F	9		COY	ALIVE	59	31	30	31	30	31	31	30	31	61		
337	1988	F	20		AONE	ALIVE	59	31	30	31	30	31	31	30	31	61		
340	1988	F	10		COY	ALIVE	59	31	30	31	30	31	31	30	31	61		
388	1988	F	19		COY	ALIVE	59	31	30	31	30	31	31	30	31	61		
396	1988	F	18		ALONE	ALIVE	59	31	30	31	30	31	31	30	31	61		
423	1988	F	25		ALONE	ALIVE	59	31	30	31	30	31	31	30	31	61		
460	1988	F	9		ALONE	ALIVE	59	31	30	31	30	31	31	30	31	61		
461	1988	F	7		YLG	ALIVE	59	31	30	31	30	31	31	30	31	61		
425	1988	F	18		COY	ALIVE	59	31	30	31	30	31	31	30	31	61	COY LOST IN MAY	
453	1988	F	6		W/@2	ALIVE	59	31	30	31	30	31	31	30	31	61		
462	1988	F	9		YLG	ALIVE	59	31	30	31	30	31	31	30	31	61		
458	1988	F	19		COY	CENSOR	59	31	30	31	30	31	31	21		SHED COLLAR, BEAR SHOT IN '90		
459	1988	F	5		ALONE	CENSOR	59	31	30	18							MISSING, POSSIBLY SHOT	
481	1988	F	15		W/@2	CENSOR	59	31	30	25							STATUS?, POSSIBLY SHOT	
341	1988	F	13		W/@2	DIED	59	31	30	31	30	31	31	30	31		NAT. MORTALITY--DEN COLLAPSE?	
381	1988	F	9		COY	SHOT	59	31	30	31	30	31	31	31	7			
273	1989	F	13		W/@2	ALIVE	59	31	30	31	30	31	31	30	31	61		

Appendix B Continued

ID	Year	Sex	Age	Date Radioed	Repro. Status	Mortality Status	J-F M A M J J A S O N-D												Comments
							J	F	M	A	M	J	J	A	S	O	N-D		
281	1989	F	12		YLG	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
283	1989	F	21		COY	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
314	1989	F	11		W/@2	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
335	1989	F	10		YLG	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
337	1989	F	21		ALONE	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
340	1989	F	11		YLG	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
388	1989	F	20		YLG	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
396	1989	F	19		COY	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
423	1989	F	26		ALONE	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
460	1989	F	10		COY	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
461	1989	F	8		UNK.	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
425	1989	F	19		COY	CENSOR	59	31	30	31	30	5						POSSIBLY SHOT	
462	1989	F	10		W/@2	CENSOR	59	31	30	31	30	31	31	31	2			MISSING, POSSIBLY SHOT	
453	1989	F	7		UNK.	SHOT	59	31	17										
273	1990	F	14		ALONE	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
281	1990	F	13		W/@2	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
283	1990	F	22		YLG	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
314	1990	F	12		COY	ALIVE	59	31	30	31	30	31	31	31	30	31	61	LOST COY IN MAY	
335	1990	F	11		W/@2	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
337	1990	F	22		ALONE	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
340	1990	F	12		ALONE	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
388	1990	F	21		W/@2	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
396	1990	F	20		YLG	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
423	1990	F	27		ALONE	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
460	1990	F	11		YLG	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
461	1990	F	9		COY	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
273	1991	F	15		COY	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
281	1991	F	14		ALONE	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
283	1991	F	23		W/@2	ALIVE	59	31	30	31	30	31	31	31	30	31	61		
314	1991	F	13		COY	ALIVE	59	31	30	31	30	31	31	31	30	31	61		

Appendix B Continued

ID	Year	Sex	Age	Date Radioed	Repro. Status	Mortality Status	J-F M A M J J A S O N-D Comments											
							J	F	M	A	M	J	J	A	S	O	N-D	Comments
335	1991	F	12		W/@3	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
337	1991	F	23		ALONE	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
340	1991	F	13		ALONE	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
388	1991	F	22		ALONE	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
396	1991	F	21		W/@2	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
423	1991	F	28		ALONE	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
460	1991	F	12		W/@2	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
461	1991	F	10		YLG	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
273	1992	F	16		YLG	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
281	1992	F	15		COY	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
283	1992	F	24		COY	ALIVE	59	31	30	31	30	31	31	31	30	31	61	COY LOST IN DEN?
314	1992	F	14		YLG	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
335	1992	F	13		W/@4	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
337	1992	F	24		ALONE	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
340	1992	F	14		YLG	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
388	1992	F	23		ALONE	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
396	1992	F	22		W/@ 3	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
423	1992	F	29		ALONE	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
460	1992	F	13		W/@3	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
461	1992	F	11		W/@2	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
273	1993	F	17		ALONE	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
281	1993	F	16		YLG	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
283	1993	F	25		ALONE	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
306	1993	F	16	5/13/93	COY	ALIVE					18	30	31	31	30	31	61	COY LOST IN MAY
314	1993	F	15		W/@2	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
335	1993	F	14		COY	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
337	1993	F	25		ALONE	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
340	1993	F	15		W/@2	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
460	1993	F	14		W/@4	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
461	1993	F	12		COY	ALIVE	59	31	30	31	30	31	31	31	30	31	61	

Appendix B Continued

ID	Year	Sex	Age	Date Radioed	Repro. Status	Mortality Status	J-F M A M J A S O N-D Comments											
							J	F	M	A	M	J	J	A	S	O	N-D	Comments
484	1993	F	4	5/12/93	ALONE	ALIVE			19	30	31	31	30	31			61	
485	1993	F	5	5/12/93	ALONE	ALIVE			19	30	31	31	30	31			61	
486	1993	F	6	5/12/93	ALONE	ALIVE			19	30	31	31	30	31			61	
496	1993	F	7	5/14/93	YLG	ALIVE			17	30	31	31	30	31			61	LOST YLG IN MAY
498	1993	F	20	5/14/93	COY	ALIVE			17	30	31	31	30	31			61	
499	1993	F	6	5/14/93	ALONE	ALIVE			17	30	31	31	30	31			61	
501	1993	F	2	5/26/93	ALONE	ALIVE			5	30	31	31	30	31			61	
502	1993	F	2	5/15/93	W/MOM	ALIVE			16	30	31	31	30	31			61	
506	1993	F	2	5/16/93	W/MOM	ALIVE			15	30	31	31	30	31			61	
509	1993	F	3	5/17/93	ALONE	ALIVE			14	30	31	31	30	31			61	
396	1993	F	23		COY	CENSOR	59	31	30	31	30	31	31	30				LAST FOUND 9/22/93, COLLAR FAILURE?
495	1993	F	2	5/13/93	ALONE	CENSOR			18	30	31	31	22					SHED COLLAR, SHOT 9/94
504	1993	F	5	5/16/93	ALONE	CENSOR			15	30	31	31	22					SHED DURING WINTER
508	1993	F	6	5/17/93	ALONE	CENSOR			14	30	31	31	22					SHED COLLAR
423	1993	F	30		ALONE	DIED	59	31	30	31	30	31	31	30	31		61	NAT. MORTALITY IN WINTER, PROBABLY
																		SHOT DLP IN JULY (DATE?)
513	1993	F	4	5/19/93	W/MOM	SHOT			12	30	8							
388	1993	F	24		COY	SHOT 9/1	59	31	30	31	30	31	31	1				COY LOST IN JULY, LEGAL KILL
273	1994	F	18		COY	ALIVE	59	31	30	31	30	31	31	30	31		61	COY LOST 5/28-6/17
281	1994	F	17		ALONE	ALIVE	59	31	30	31	30	31	31	30	31		61	
283	1994	F	26		COY	ALIVE	59	31	30	31	30	31	31	30	31		61	
306	1994	F	17		COY	ALIVE	59	31	30	31	30	31	31	30	31		61	
314	1994	F	16		COY	ALIVE	59	31	30	31	30	31	31	30	31		61	COY LOST IN MAY
335	1994	F	15		YLG	ALIVE	59	31	30	31	30	31	31	30	31		61	
337	1994	F	26		ALONE	ALIVE	59	31	30	31	30	31	31	30	31		61	
460	1994	F	15		COY	ALIVE	59	31	30	31	30	31	31	30	31		61	
461	1994	F	13		YLG	ALIVE	59	31	30	31	30	31	31	30	31		61	
484	1994	F	5		COY	ALIVE	59	31	30	31	30	31	31	30	31		61	
485	1994	F	6		COY	ALIVE	59	31	30	31	30	31	31	30	31		61	
486	1994	F	7		COY	ALIVE	59	31	30	31	30	31	31	30	31		61	

Appendix B Continued

ID	Year	Sex	Age	Date Radioed	Repro. Status	Mortality Status	J-F M A M J J A S O N-D Comments											
							J	F	M	A	M	J	J	A	S	O	N-D	Comments
496	1994	F	8		COY	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
498	1994	F	21		YLG	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
499	1994	F	7		ALONE	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
501	1994	F	3		ALONE	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
506	1994	F	3		ALONE	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
507	1994	F	4	5/20/94	ALONE	ALIVE				11	30	31	31	30	31	31	61	
509	1994	F	4		ALONE	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
517	1994	F	18	5/22/94	YLG	ALIVE				9	30	31	31	30	31	31	61	
518	1994	F	4	5/20/94	ALONE	ALIVE				11	30	31	31	30	31	31	61	
502	1994	F	3		ALONE	CENSOR	59	31	30	29							SHED COLLAR	
340	1994	F	16		COY	SHOT 9/9	59	31	30	31	30	31	31	31	9		SHOT W/ COY	
273	1995	F	19		COY	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
283	1995	F	27		YLG	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
314	1995	F	17		COY	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
335	1995	F	16		W/@2	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
337	1995	F	27		ALONE	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
460	1995	F	16		YLG	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
484	1995	F	6		YLG	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
485	1995	F	7		YLG	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
486	1995	F	8		YLG	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
491	1995	F	4	5/16/95	ALONE	ALIVE				15	30	31	31	30	31	31	61	
496	1995	F	9		YLG	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
498	1995	F	22		W/@2	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
499	1995	F	8		COY	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
501	1995	F	4		ALONE	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
503	1995	F	4	5/17/93	ALONE	ALIVE				14	30	31	31	30	31	31	61	
506	1995	F	4		ALONE	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
507	1995	F	5		ALONE	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
509	1995	F	5		ALONE	ALIVE	59	31	30	31	30	31	31	31	30	31	61	
517	1995	F	19		W/@1	ALIVE	59	31	30	31	30	31	31	31	30	31	61	

Appendix B Continued

ID	Year	Sex	Age	Date Radioed	Repro. Status	Mortality Status	Comments											
							J-F	M	A	M	J	J	A	S	O	N-D		
518	1995	F	5		ALONE	ALIVE	59	31	30	31	30	31	31	30	31	61		
525	1995	F	7	5/17/95	YLG	ALIVE				14	30	31	31	30	31	61		
281	1995	F	18		COY	DIED	59	31	30	31	30	31					KILLED BY BEAR DEFENSE OF COYS	
437	1995	F	12	5/15/95	W/@2	RECAPT.				16	30	31	31	30	31	61		
520	1995	F	9	5/15/95	W/@2	SHOT				16	30	31	31	2				
522	1995	F	2	5/16/95	ALONE	SHOT				15	30	31	31	5				
461	1995	F	14		W/@2	SHOT 8/22	59	31	30	31	30	31	22					
306	1995	F	18		YLG	SHOT 9/7	59	31	30	31	30	31	31	7		HUNTER DIDN'T "SEE" YLGS		
273	1996	F	20		YLG	ALIVE	59	31	30	31	30	31	31	30	31	61		
283	1996	F	28		ALONE	ALIVE	59	31	30	31	30	31	31	30	31	61		
314	1996	F	18		YLG	ALIVE	59	31	30	31	30	31	31	30	31	61		
335	1996	F	17		COY	ALIVE	59	31	30	31	30	31	31	30	31	61		
337	1996	F	28		ALONE	ALIVE	59	31	30	31	30	31	31	30	31	61		
460	1996	F	17		W/@ 2	ALIVE	59	31	30	31	30	31	31	30	31	61		
484	1996	F	7		W/@2	ALIVE	59	31	30	31	30	31	31	30	31	61		
485	1996	F	8		W/@2	ALIVE	59	31	30	31	30	31	31	30	31	61		
486	1996	F	9		W/@2	ALIVE	59	31	30	31	30	31	31	30	31	61		
496	1996	F	10		W @2	ALIVE	59	31	30	31	30	31	31	30	31	61		
499	1996	F	9		YLG	ALIVE	59	31	30	31	30	31	31	30	31	61	LOST YLG IN mAY	
501	1996	F	5		COY	ALIVE	59	31	30	31	30	31	31	30	31	61	LOST COY AUG-SEPT	
503	1996	F	5		COY	ALIVE	59	31	30	31	30	31	31	30	31	61	LOST COY JUNE-JULY	
507	1996	F	6		COY	ALIVE	59	31	30	31	30	31	31	30	31	61		
509	1996	F	6		COY	ALIVE	59	31	30	31	30	31	31	30	31	61		
518	1996	F	6		ALONE	ALIVE	59	31	30	31	30	31	31	30	31	61		
525	1996	F	8		W/@2	ALIVE	59	31	30	31	30	31	31	30	31	61		
517	1996	F	20		COY	CENSOR	59	31	30	19						STATUS UNDETERMINED, SHOT OR SHED		
491	1996	F	5		ALONE	CENSOR?	59	31	30	31	30	31	31	20		SHED OR DEAD, NEED TO PU COLLAR		
437	1996	F	13		ALONE	DIED	59	31	30	31	30	31	31	30	2		PROBABLY SHOT, NOT SEALED	
506	1996	F	5		ALONE	SHOT	59	31	7									

Appendix B Continued

ID	Year	Sex	Age	Date	Repro.	Mortality Status	J-F	M	A	M	J	J	A	S	O	N-D Comments	
498	1996	F	23			SHOT ?	59	31	29								DEAD IN DEN, SHOT IN SPRING PROB.
273	1997	F	21		W/@2	ALIVE	59	31	30	31	30	31	31	31	30		
283	1997	F	29		ALONE	ALIVE	59	31	30	31	30	31	31	31	30		
314	1997	F	19		W/@2	ALIVE	59	31	30	31	30	31	31	31	30		
335	1997	F	18		ALONE	ALIVE	59	31	30	31	30	31	31	31	30		
460	1997	F	18		W/@3	ALIVE	59	31	30	31	30	31	31	31	30		
484	1997	F	8		COY	ALIVE	59	31	30	31	30	31	31	31	30		
485	1997	F	9		COY	ALIVE	59	31	30	31	30	31	31	31	30		
486	1997	F	10		COY	ALIVE	59	31	30	31	30	31	31	31	30		
496	1997	F	11		COY	ALIVE	59	31	30	31	30	31	31	31	30		
499	1997	F	10		ALONE	ALIVE	59	31	30	31	30	31	31	31	30		
507	1997	F	7		YLG	ALIVE	59	31	30	31	30	31	31	31	30		
509	1997	F	7		YLG	ALIVE	59	31	30	31	30	31	31	31	30		
525	1997	F	9		W/@3	ALIVE	59	31	30	31	30	31	31	31	30		
518	1997	F	7		ALONE	CENSOR	59	31	30	31	17					SHED COLLAR	
337	1997	F	29		ALONE	DEAD	59	31	30							Wounding loss in spring?	
501	1997	F	6		ALONE	SHOT	59	31	30	31	30	10					
503	1997	F	6		COY	SHOT	59	31	30	31	30	31	31	31	5		
280	1980	M	5	4/20/80		ALIVE		10	31	30	31	31	30	31	61		
293	1980	M	3	5/2/80		ALIVE			29	30	31	31	30	31	61		
294	1980	M	10	5/2/80		ALIVE			29	30	31	31	30	31	61		
214	1980	M	4	4/22/80		CENSOR			8	31	30	31	4			SHED	
280	1981	M	6			ALIVE	59	31	30	31	30	31	31	30	31	61	
293	1981	M	4			ALIVE	59	31	30	31	30	31	31	30	31	61	
342A	1981	M	2	5/7/81		ALIVE			24	30	31	31	30	31	61		
294	1981	M	11			DIED	59	31	30	31	30	31	31	23		RECAPTURE MORTALITY	
284	1981	M	2	5/5/91		SHOT				13						SHOT 13 DAYS AFTER TAGGED	
280	1982	M	7			ALIVE	59	31	30	31	30	31	31	30	31	61	

Appendix B Continued

ID	Year	Sex	Age	Date Radioed	Repro. Status	Mortality Status	Comments												
							J-F	M	A	M	J	J	A	S	O	N-D			
282	1982	M	6	6/11/82		ALIVE				19	31	31	30	31		61			
293	1982	M	5			ALIVE	59	31	30	31	30	31	31	30	31		61		
342A	1982	M	3			ALIVE	59	31	30	31	30	31	31	30	31		61		
273	1982	M	9	6/11/82	ALONE	ALIVE				19	31	31	30	31		61			
280	1983	M	8			ALIVE	59	31	30	31	30	31	31	30	31		61		
282	1983	M	7			ALIVE	59	31	30	31	30	31	31	30	31		61		
279	1983	M	12	5/18/83		ALIVE				23	30	31	31	30	31		61		
342A	1983	M	4			ALIVE	59	31	30	31	30	31	31	30	31		61		
386	1983	M	2	5/14/83	W/MOM	ALIVE				17	30	31	31	30	31		61		
390	1983	M	2	5/14/83	ALONE	ALIVE				17	30	31	31	30	31	61			
399	1983	M	9	5/17/83		ALIVE				14	30	31	31	30	31		61		
400	1983	M	20	5/17/83		ALIVE				14	30	31	31	30	31		61		
293	1983	M	6			CENSOR	59	31	30	31	30	31	31	27					
273	1983	M	10		ALONE	CENSOR	59	31	30	31	30	31	1			SHED COLLAR			
389	1983	M	2	5/14/83	ALONE	CENSOR				17	30	31	31	30	5		POSSIBLY SHOT		
391	1983	M	2	5/15/83	ALONE	CENSOR				16	30	31	31	30	24		SHED		
392	1983	M	2	5/15/83	W/MOM	CENSOR				16	30	31	31	30	31		SHED IN DEN, SHOT IN NEXT YEAR		
280	1984	M	9			ALIVE	59	31	30	31	30	31	31	30	31		61		
282	1984	M	8			ALIVE	59	31	30	31	30	31	31	30	31		61		
382	1984	M	2	4/3/84	W/MOM	ALIVE				27	31	30	31	31	30	31		61	
399	1984	M	10			ALIVE	59	31	30	31	30	31	31	30	31		61		
400	1984	M	21			ALIVE	59	31	30	31	30	31	31	30	31		61		
422	1984	M	6	5/18/84		ALIVE				13	30	31	31	30	31		61		
390	1984	M	3		ALONE	CENSOR	59	31	30	10						TRANSMITTER FAIL			
342A	1984	M	5			DIED	59	31	30	31	30	28				RECAPTURE MORTALITY			
279	1984	M	13			SHOT	59	31	30	31	30	31	31	5					
386	1984	M	3		ALONE	SHOT	59	31	30	4									
282	1985	M	9			ALIVE	59	31	30	31	30	31	31	30	31		61		
427	1985	M	3	6/1/85		ALIVE				29	31	31	30	31			63		
280	1985	M	10			CENSOR	59	31	30	31	10					RECAPTURED, 1994			

Appendix B Continued

ID	Year	Sex	Age	Date Radioed	Repro. Status	Mortality Status	J-F M A M J J A S O N-D												Comments
382	1985	M	3		ALONE	CENSOR	59	31	30	31	30	31	31	6					SHED COLLAR, SHOT IN 1993
399	1985	M	11			CENSOR	59	31	30	31	27								COLLAR FAILED, BEAR SHOT IN 1987
400	1985	M	22			CENSOR	59	31	30	31	30	31	31	30					FAILED, BEAR SHOT IN '93
421	1985	M	2	4/30/85		CENSOR				30	30	24							SHED, BEAR SHOT IN '88
422	1985	M	7			DIED	59	31	30	31	27								SUSPECT NAT. MORTALITY
214	1985	M	9	6/9/85							21	31	31	30	31	61			
455	1986	M	8	6/3/86		ALIVE				27	31	31	30	31	61				
282	1986	M	19			CENSOR	59	31	30	31	6								REMOVED COLLAR 6/6, BEAR SHOT SP. '92
214	1986	M	10			CENSOR	59	31	30	31	6								REMOVED COLLAR
427	1986	M	4			SHOT 9/14	59	31	30	31	30	31	31	14					
455	1987	M	9			CENSOR	59	31	30	31	8								REMOVED COLLAR, SHOT '89
487	1993	M	7	5/12/93		ALIVE				19	30	31	31	30	31	61			
500	1993	M	3	5/15/93		ALIVE				16	30	31	31	30	31	61			
464	1993	M	9	5/16/93		CENSOR				15	10								SHOT 9/93, NO COLLAR
493	1993	M	5	5/13/93		CENSOR				18	30	8							SHED COLLAR
280	1994	M	18	5/20/94		ALIVE				10	30	31	31	30	31	61			
515	1994	M	5	5/21/94		ALIVE				10	30	31	31	30	31	61			
519	1994	M	3	5/22/94	ALONE	ALIVE				9	30	31	31	30	31	61			
487	1994	M	8			CENSOR	59	31	30	31	10								POSSIBLY SHOT
500	1994	M	4			CENSOR	59	31	30	17									SHOT IN 1996
515	1994	M	6			CENSOR	59	31	30	18									SHED COLLAR, SHOT 4/13/96
494	1994	M	5	5/13/93		SHOT 9/6				18	30	31	31	6					
280	1995	M	19			CENSOR	59	31	30	18									REMOVED COLLAR
519	1995	M	4		ALONE	CENSOR	59	31	30	25									SHED IN JUNE
521	1995	M	2	5/16/95		SHOT				15	30	31	31	3					

Appendix C. Status of radiomarked brown bears in Subunit 13A by year. Data form the basis for calculation of survivorship rate. All radiomarked bears treated as censored at the end of September 1997.

ID	Year	Sex	Age	Date Radioed	Repro. Status	Mortality Status	Comments											
							J-F	M	A	M	J	J	A	S	O	N-D		
560	1996	F	2	5/21/96	W/MOM	ALIVE			9	30	31	31	30	31	31	61		
526	1996	F	4	5/15/96	ALONE	ALIVE			15	30	31	31	30	31	31	61		
555	1996	F	4	5/21/96	ALONE	ALIVE			10	30	31	31	30	31	31	61		
528	1996	F	5	5/15/96	ALONE	ALIVE			15	30	31	31	30	31	31	61		
541	1996	F	6	5/17/96	ALONE	ALIVE			14	30	31	31	30	31	31	61		
530	1996	F	7	5/15/96	w/2@3	ALIVE			15	30	31	31	30	31	31	61		
549	1996	F	7	5/20/96	ALONE	ALIVE			11	30	31	31	30	31	61	NOT FOUND > 7/24		
556	1996	F	9	5/21/96	W/@2	ALIVE			10	30	31	31	30	31	31	61		
550	1996	F	13	5/20/96	W/ 1@2	ALIVE			11	30	31	31	30	31	61	LAST SEEN 7/25		
540	1996	F	14	5/17/96	ALONE	ALIVE			14	30	31	31	30	31	31	61		
393	1996	F	15	5/16/96	w/3@0	ALIVE			15	30	31	31	30	31	31	61		
536	1996	F	16	5/17/96	w/1@1	ALIVE			14	30	31	31	30	31	31	61		
546	1996	F	20	5/19/96	W/1@1	ALIVE			13	30	31	31	30	31	61	YLG = 547, SEPARATED IN JUNE		
532	1996	F	22	5/16/96	w/2@1	ALIVE			14	30	31	31	30	31	31	61		
334	1996	F	24	5/21/96	W/@2	ALIVE			9	30	31	31	30	31	31	61		
551	1996	F	2	5/20/96	W/ MOM	CENSOR			11	16						LAST SEEN 6/16		
539	1996	F	3	5/17/96	ALONE	Shot 5/27			9									
529	1996	F	27	5/15/96	ALONE	SHOT 8/13			15	30	31	13						
555	1997	F	5		ALONE	CENSOR?	59	31	29							POSSIBLY SHOT?		
550	1997	F	14		ALONE	CENSOR?	59	31	30	31	18					LAST SEEN 6/18		
393	1997	F	16		w/3@1	Shot 9/20	59	31	30	31	30	31	31	20				
547	1997	F	2	5/17/97	ALONE	SHOT?			14	30	31	2				NOT SEALED, HUNTER'S SEEN NEAR COLLAR		
570	1997	F	2	5/21/97	W/MOM				10	30	31	31	30					
533	1997	F	2	5/18/97	W/MOM				12	30	31	31	30					
560	1997	F	3				59	31	30	31	30	31	31	30				
537	1997	F	3	5/20/97	ALONE				11	30	31	31	30					

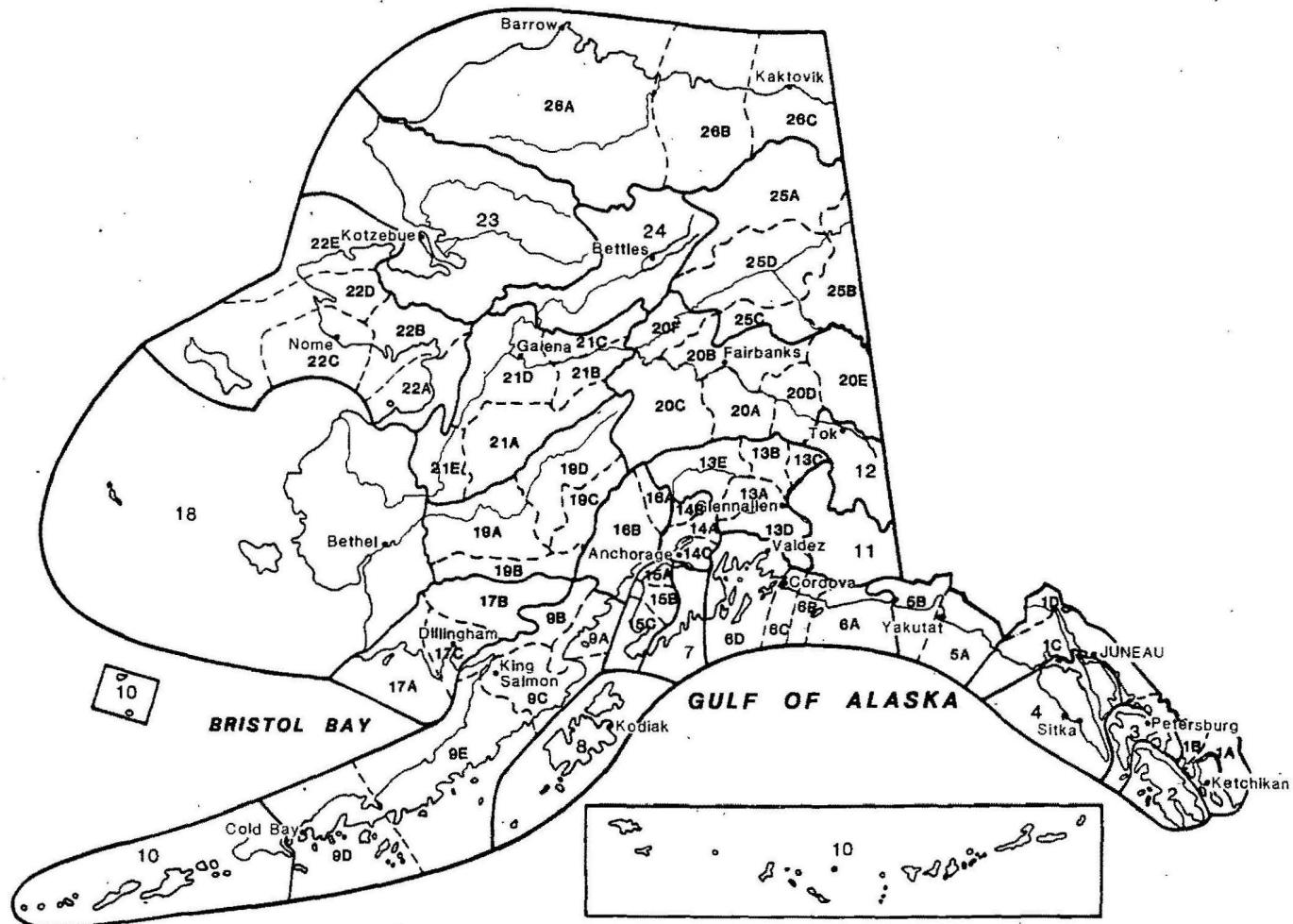
Appendix C Continued

ID	Year	Sex	Age	Date	Repro.	Mortality	Comments												
							Status	J-F	M	A	M	J	J	A	S	O	N-D		
526	1997	F	5			COY		59	31	30	31	30	31	31	30			LOST LITTER IN MAY	
528	1997	F	6			COY		59	31	30	31	30	31	31	30				
563	1997	F	6	5/17/97		W/2@0					13	30	31	31	30				
541	1997	F	7			COY		59	31	30	31	30	31	31	30				
572	1997	F	7	5/20/97		W2@1					11	30	31	31	30				
577	1997	F	7	5/20/97		ALONE*					11	30	31	31	30				*RECENTLY LOST LITTER
530	1997	F	8			COY		59	31	30	31	30	31	31	30				
549	1997	F	8			ALONE		59	31	30	31	30	31	31	30				
565	1997	F	9	5/19/97		W/M					12	30	31	31	30				
569	1997	F	9	5/20/97		W/2@2					11	30	31	31	30				
556	1997	F	10			ALONE		59	31	30	31	30	31	31	30				
567	1997	F	10	5/18/97		ALONE					13	30	31	31	30				
574	1997	F	14	5/22/97		ALONE					9	30	31	31	30				
540	1997	F	15			COY		59	31	30	31	30	31	31	30				
536	1997	F	17			W/@2		59	31	30	31	30	31	31	30				
564	1997	F	18	5/18/97		W/3@1					13	30	31	31	30				
546	1997	F	21			COY		59	31	30	31	30	31	31	30				
532	1997	F	23			W@2		59	31	30	31	30	31	31	30				
334	1997	F	25			COY		59	31	30	31	30	31	31	30				
531	1996	M	3	5/15/96	W/MOM	ALIVE			15	30	31	31	30	31	61				
553	1996	M	3	5/21/96		ALIVE			10	30	31	31	30	31	61				
538	1996	M	3	5/17/96		CENSOR			14	16	31	31	30	31	61	NOT FOUND >6/16			
543	1996	M	3	5/17/96		CENSOR			14	25						NOT FOUND >6/25			
544	1996	M	4	5/17/96		CENSOR			14	30	31	14				NOT FOUND >8/14			
535	1996	M	6	5/16/96		CENSOR			14	23						DROPPED COLLAR >6/23			
542	1996	M	6	5/17/96		CENSOR			14	23						NOT FOUND >6/23			
545	1996	M	7	5/18/96		CENSOR			13	30	19					RECAPT. NEXT YEAR, NOT COLLARED			
527	1996	M	19	5/15/96	ALONE	CENSOR			15	16						LAST SEEN 6/16, MOVED WEST?			
557	1996	M	2	5/21/96		Shot 9/1			10	30	31	31	1			ILLEGAL KILL			

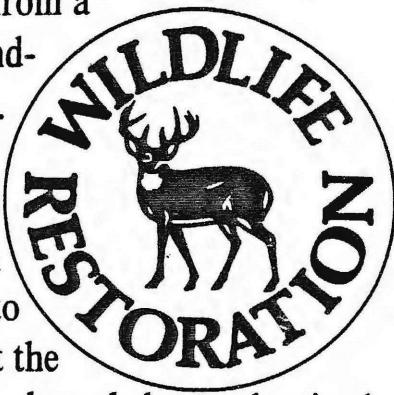
Appendix C Continued

ID	Year	Sex	Age	Date Radioed	Repro. Status	Mortality Status	J-F	M	A	M	J	J	A	S	O	N-D	Comments	
559	1996	M	2	5/21/96		Shot 9/16			10	30	31	31	16					
568	1997	M	3	5/19/97	ALONE	CENSOR			12	30	14							SHED COLLAR, SHOT LATER IN YEAR
571	1997	M	9	5/22/97		CENSOR			9	30	31	31	30					
562	1997	M	17	5/16/97	ALONE	CENSOR			14	30	14							SHED OR SHOT?
580	1997	M	3	5/22/97	ALONE	CENSOR?			9	26								LAST FOUND 6/26, TERRACE LAKE
553	1997	M	4			CENSOR?	59	31	30	31	30	31						SHED OR DEAD?
576	1997	M	3	5/19/97		DEAD			12	30	31	2						
538	1997	M	4			SHOT	59	31	30	31	30	31	31	14				MOVED TO 13E
534	1997	M	2	5/19/97	W/MOM	shot 9/14			12	30	31	31	14					
531	1997	M	4		ALONE		59	31	30	31	30	31	31	30				
573	1997	M	4	5/21/97					10	30	31	31	30					
578	1997	M	5	5/21/97					10	30	31	31	30					

Alaska's Game Management Units



The Federal Aid in Wildlife Restoration Program consists of funds from a 10% to 11% manufacturer's excise tax collected from the sales of handguns, sporting rifles, shotguns, ammunition, and archery equipment. The Federal Aid program allots funds back to states through a formula based on each state's geographic area and number of paid hunting license holders. Alaska receives a maximum 5% of revenues collected each year. The Alaska Department of Fish and Game uses federal aid funds to help restore, conserve, and manage wild birds and mammals to benefit the public. These funds are also used to educate hunters to develop the skills, knowledge, and attitudes for responsible hunting. Seventy-five percent of the funds for this report are from Federal Aid.



Ken Whitten