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ANNUAL REPORT OF SURVEY-INVENTORY ACTIVITIES
PART III. CARIBOU, BROWN BEAR, POLAR BEAR
AND BLACK BEAR

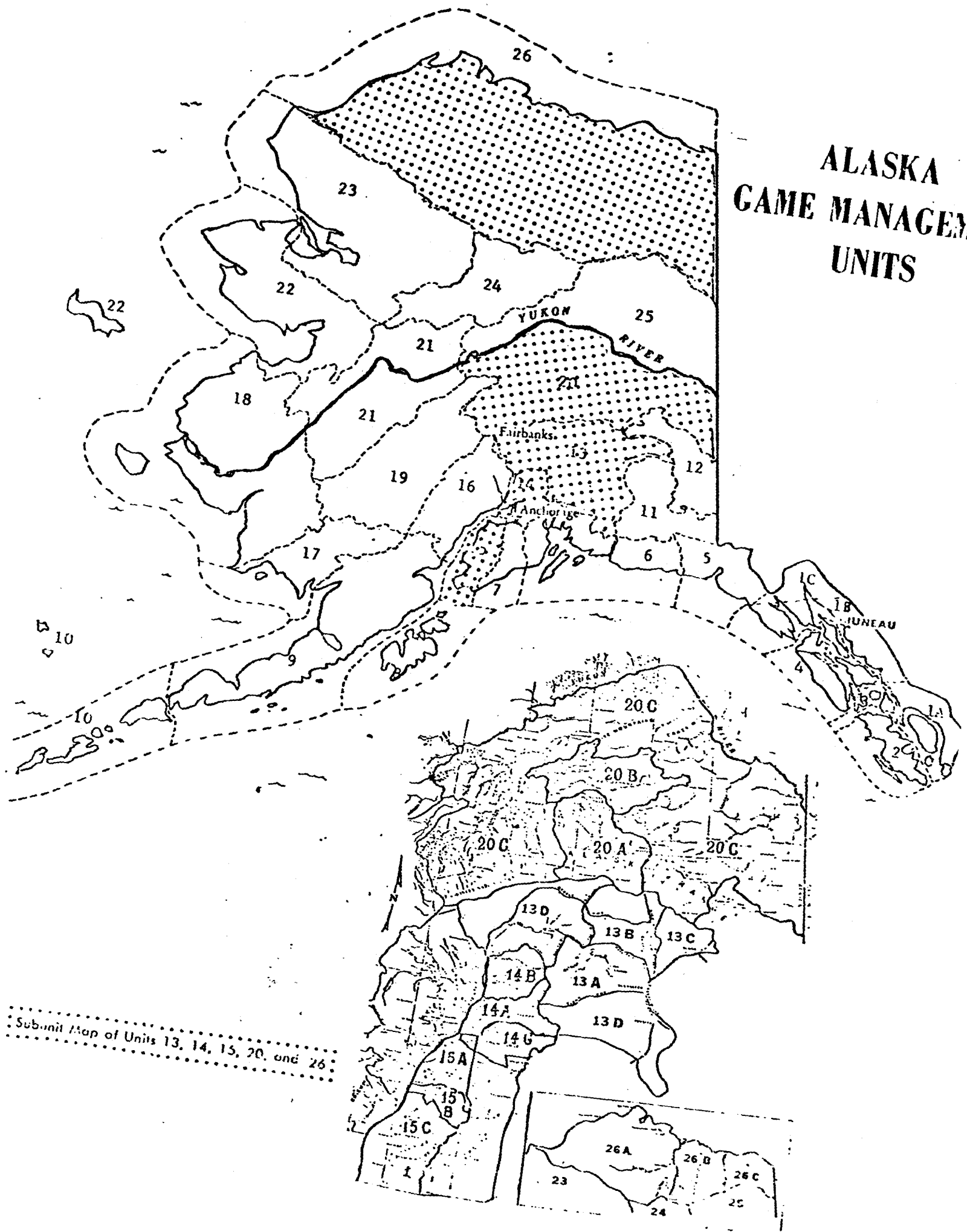
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(Printed June 1976)

ALASKA GAME MANAGEMENT UNITS



Subunit Map of Units 13, 14, 15, 20, and 26

STATEWIDE HARVESTS AND POPULATION STATUS

Caribou

During the 1974-75 hunting season caribou harvest tickets were required only in Game Management Units 11, 12, 13, 14 and 20. Hunters reported harvesting 1,268 caribou from these units, and the total extrapolated legal harvest was approximately 1,444 animals. The Nelchina herd provided an estimated 1,193 caribou and the harvest from the Mentasta herd was 90 animals. Statewide harvests by sport and subsistence hunters, coming mainly from the remote Western Arctic, Porcupine and Alaska Peninsula herds, were estimated to be 25-30,000 caribou.

Easily accessible caribou herds in Southcentral and Interior Alaska (Fortymile, Nelchina, Delta, Mentasta and Chisana herds) supported short seasons and low harvests again in 1974-75. The transplanted Kenai Peninsula caribou herd, first opened to hunting in 1972, produced a harvest of 44 animals in 1974 and the Adak caribou herd produced a harvest of 93 animals.

Brown/Grizzly Bear

The 1974 legal sport harvest of 777 brown/grizzly bears was only slightly in excess of the average harvest of the previous 10 years (735 bears/year). Guided nonresident hunters took 63 percent of the total harvest. Of the 767 bears for which season of take was known 268 were killed during the spring season and 499 during the fall season. During 1974, 84 bears were harvested in Game Management Unit 4 (Admiralty, Baranof and Chichagof Islands), 164 were taken in GMU 8 (Kodiak and Afognak Islands) and 140 were harvested in GMU 9 (Alaska Peninsula). Collectively these three units contributed 50 percent of the total 1974 statewide brown/grizzly bear sport harvest. The 1974 Brooks Range (GMU 24-26) sport harvest of 34 grizzly bears was a substantial reduction from the 1973 harvest of 61 bears.

Alaska's brown/grizzly bear populations remained stable or showed moderate increases in 1974, despite substantial harvests in some units.

Polar Bear

Since passage of the Marine Mammals Protection Act in 1972 there has been no sport harvest of polar bears in Alaska. Native "subsistence" hunters took a minimum of 43 bears in 1974-75.

Black Bear

A total of 658 black bears were sealed during the 1974 spring and fall seasons. Because hunters were not required to seal black bears in much of the state this harvest figure is minimal.

Black bear populations throughout Alaska remained high through 1974.

DEM

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CARIBOU

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Units 7 and 15 - Kenai Peninsula (Kenai Herds)

Seasons and Bag Limits

Unit 7, that portion including the drainages of Resurrection Creek, Big Indian Creek, and all Chickaloon River drainages.	Aug.10-Nov.30 Jan.1-March 31	One caribou; a limited number of caribou by permit only, provided that only antlered caribou may be taken from Jan. 1 - March 31. Conditions and number of permits will be described by Commissioner's announcement.
Remainder of Unit 7	No open season	
Unit 15	No open season	

Harvest and Hunting Pressure

Five hundred and seventy-three persons obtained permits to hunt caribou during the 1974-75 season. Permits were unlimited and were available throughout the season. Forty-four caribou (30 males and 14 females) were harvested for a success rate of 7.7 percent (Appendix I).

Ninety-one percent (40/44) of the caribou harvested were taken during the period August 10-September 10, with the entire harvest occurring prior to October 11 (Appendix II).

Hunters failed to take the harvestable surplus and thus reduce the herd to the desired winter carryover level of 250 caribou.

Composition and Productivity

A census of the American Pass group on November 18, 1974 resulted in a direct count of 292 caribou. The count was conducted after 44 caribou had been reported harvested, indicating that there were at least 336 caribou in the herd prior to the hunting season. The 1973 projection based on an annual growth rate of 36 percent and 246-251 caribou in March 1974 was for a 1974 fall population of 340.

The projected population for fall 1975 based on 292 wintering animals and a 36 percent growth rate is 397.

A sex and age composition survey was conducted on the American Pass group on Nov. 19, 1974. This survey revealed 73.2 bulls per 100 cows, 43.9 calves per 100 cows and 22.0 yearlings per 100 cows from a sample of 196 animals (Appendix III).

No complete surveys of the Subunit 15A group were made in 1974. One group of 22 caribou was observed on the Moose River Flats on January 20, 1975 incidental to other surveys.

Management Summary and Conclusions

The low success rate of 7.7 percent is a reflection of the inaccessibility to the hunting area rather than the availability of caribou. Apparently many permit holders either did not hunt or hunted only the periphery of the caribou range.

Hunters failed to harvest the annual increment and thereby reduce the herd to the desired winter level of 250 animals. As a result the harvestable surplus in 1975 will be about 145 animals or about 50 percent higher than in 1974. To remove the harvestable surplus in 1975 will require a harvest approximately three times larger than in 1974. Considering the inaccessibility of this area it is unlikely that this will happen and the problem will compound itself year by year.

A range survey conducted in 1952 established the carrying capacity of this area at about 200 caribou. The remainder of the Kenai Peninsula was judged to be non-caribou range or poor caribou range. This is borne out by the very slow growth of the 15A group and the disappearance of caribou that inhabited other areas south of the Kenai River following the transplants.

If the American Pass group is allowed to continue growing, range deterioration will eventually occur ultimately resulting in a severe decline in caribou numbers. Since these caribou generally utilize the same range in both summer and winter, trampling of the range is a bigger factor than grazing. A very conservative approach to regulating the number of caribou on this range is necessary until the real carrying capacity can be determined.

The percentage of calves and yearlings (18.4 and 9.2, respectively) observed on the sex and age survey are not possible considering the 36 percent observed increase in the herd. Apparently a segment of the herd with a high percentage of calves and yearlings was missed or animals were misidentified. The survey will be repeated in 1975 to find the source of error.

Recommendations

Approximately 145 caribou should be harvested in 1975.

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John S. Vania
Regional Management Coordinator

Appendix I. Caribou seasons, permits issued, harvest by sex and hunter success in Game Management Unit 7.

<u>Year</u>	<u>Season</u>	<u>Permits Issued</u>	<u>Harvest</u>		<u>Total</u>	<u>Percent Successful</u>
			♂	♀		
1972-73	Aug. 10 - Nov. 30	20	6	0	6	30.0
1973-74	Aug. 10 - Nov. 30	100	10	1	11	11.0
1973-74	Jan. 1 - Jan. 31	50	1	0	1	2.0
1973-74	Feb. 1 - Feb. 28	50	0	0	0	0.0
1973-74	March 1 - March 31	50	0	0	0	0.0
Total 73-73		250	11	1	12	4.8
1974-75	Aug. 10 - Nov. 30					
	Jan. 1 - March 31	573*	30	14	44	7.7

* Unlimited permits.

Appendix II. Chronology of the caribou harvest, American Pass group, Game Management Unit 7.

	<u>August</u>		<u>September</u>			<u>October</u>		
	10-20	21-31	1-10	11-20	21-30	1-10	11-20	21-31
♂	8	8	11	1	0	2	0	0
♀	6	5	2	0	1	0	0	0
Total	14	13	13	1	1	2	0	0
	<u>November</u>		<u>January</u>		<u>February</u>		<u>March</u>	
♂	0		0		0		0	
♀	0		0		0		0	
Total	0		0		0		0	

PREPARED BY: Paul A. LeRoux, Game Biologist III

Appendix III. Sex and age composition of the American Pass caribou group Game Management Unit 7.

Date	Tot. ♂♂ per 100 ♀♀	Yrlg. per 100 ♀♀	Calves per 100 ♀♀	Yrlg. % in Herd	N ₁ = ()	Calf % in Herd	N ₂ = ()	Gow % in Herd	N ₃ = ()	Bull % in Herd	N ₄ = ()	Sample Size (sum of N ₁ thru N ₄)
Nov. 19, 1974 (count area one)	71.2	26.9	44.2	11.1%	(14)	18.3%	(23)	41.3%	(52)	29.4%	(37)	126
Nov. 19, 1974 (count area two)	76.7	13.3	43.4	5.7%	(4)	18.6%	(13)	42.9%	(30)	32.9%	(23)	70
Total	73.2	22.0	43.9	9.2%	(18)	18.4%	(36)	41.8%	(82)	30.6%	(60)	196

Remarks: All observations were conducted from ground counts. A spotting scope was used to classify caribou in count area one. Whereas in count area two due to the proximity of caribou to observer, binoculars were used. (Excellent conditions).

Caribou were counted three times in count area two and only the most optimum count was recorded in the final tally. Approximately 200 caribou were in count area one.

Count area one counts should be considered good counts. The main interference was looking into sun without benefit of sun shade on spotting scope.

PREPARED BY: Paul A. LeRoux, Game Biologist III
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CARIBOU

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 9 - Alaska Peninsula
(Alaska Peninsula and Mulchatna Herds)

Seasons and Bag Limits

July 1 - June 30

Five caribou; provided that not more than three caribou may be taken from August 10 - November 30.

Harvest and Hunting Pressure

During the 1974-75 regulatory year, hunting pressure on the Alaska Peninsula herd and that portion of the Mulchatna caribou herd in Unit 9 was equal to that of 1973-74. Exact harvest figures are not available as harvest reports are not required for this unit. The estimated harvest is the same as for 1973-74 or approximately 2,000 animals. Less than 200 of that harvest came from the Mulchatna herd in Unit 9.

Composition and Productivity

Reconnaissance surveys indicated no changes in calving areas occurred during the past year. Abundant calves were observed and the Alaska Peninsula herd appears to be growing. No composition work was accomplished on the Alaska Peninsula herd. Work accomplished on the Mulchatna herd is reported in the caribou progress report for Unit 17.

Management Summary and Conclusions

A new regulation prohibiting the taking of big game the same day the hunter was airborne went into effect during this reporting period. No reduction in the hunting pressure or harvest, from the levels observed during the previous season, was noted as a result of this regulation.

The regulation proved extremely difficult to enforce and compliance by certain segments of the hunting public was poor. Trophy hunters found it difficult to obtain large-antlered individuals because, once located by aircraft, the animal would move a considerable distance before being legal to shoot. Without aircraft, the possibilities of locating a suitable trophy were low and some hunters were leaving the unit with immature animals or without trophies. Increased wanton waste was observed during the fall months as hunters who violated the airborne law did not, for fear of apprehension, remain at the kill site long enough to salvage the meat.

Selection for males by non-trophy hunters and the continued high harvest of trophy class caribou has resulted in a lower percentage of mature males being available. This reduction in males, along with the airborne

regulation, reduced selection and resulted in fewer outstanding trophies being obtained by individuals complying with the regulations.

The airborne regulation permits the taking of caribou in GMU 9 the same day airborne from January 1 through April 30. During this period, the harvest south of the Naknek River was relatively light and accomplished primarily by local residents. However, the harvest to the north (see caribou S & I report for GMU 17) was predominantly by Alaska residents from other units.

The GMU 9 caribou herds are exhibiting a high reproductive rate. Reconnaissance surveys indicate abundant calves, and local residents comment upon the apparent calving success. Because of the favorable winters and low natural mortality, there appears to be continuing herd growth.

Recommendations

A photo census, with accompanying composition counts, should be accomplished to determine the present status of the caribou herds.

A formal harvest report system should be initiated to determine harvest levels.

The regulation prohibiting the taking of caribou the same day airborne should be eliminated for GMU 9. Difficulty in enforcement and the lack of voluntary compliance make the regulation unsuitable for the unit.

The present bag limit should be modified to include a daily bag and/or possession limit. This might increase hunter ethics and would reduce local opposition to extensive non-area residents harvesting GMU 9 caribou.

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CARIBOU

SURVEY - INVENTORY PROGRESS REPORT - 1974

Game Management Unit 10 - Aleutian Islands (except Adak)

Seasons and Bag Limits

Unit 10, except Unimak and Adak Islands	No closed season	No limit
Unit 10, Unimak Island only	Aug. 10 - March 31	Four caribou

Harvest and Hunting Pressure

Harvest was primarily by local residents. Because no harvest reports were required for the unit, harvest data, for any areas except Adak Island, are not available. Adak Island data are summarized in a separate report.

Composition and Productivity

No data were available.

Management Summary and Conclusions

With the exception of Unimak and Adak Islands, caribou on the Aleutian Islands are the offspring of feral reindeer. These populations and the Unimak Island caribou are inaccessible to all but local residents, so hunting pressure is light. Liberalizations of seasons or bag limits will not affect any changes in the harvest level.

Recommendations

No changes in seasons or bag limits are recommended for Unit 10.

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CARIBOU

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 10 - Aleutian Islands (Adak Island Herd)

Seasons and Bag Limits

Unit 10, Adak Island only Aug. 10-Mar. 31* Two caribou

*Season may be closed by field announcement.

Harvest and Hunting Pressures

Ninety-three caribou were killed on Adak Island during the 1974-75 season (Appendix I). The confirmed sport harvest consisted of 54 males, 35 females, one calf (sex unknown) and one male reported as being found dead in the field. It was rumored that one male, one female and two sex unknown were killed during November and unreported. Thirty-three of these caribou were taken by back packers.

Composition and Productivity

No data were available.

Management Summary and Conclusions

Hunting on Adak Island is almost entirely the result of recreational efforts on the part of military and civilian personnel stationed there. The management policy for the island is to keep the herd at approximately 240 animals.

On October 23 and 24, 1974 U.S. Navy conservation agents conducted a caribou census on Adak Island via UH-46 Delta type helicopter. The Adak Island map shows the approximate census routes and number of caribou observed at each location (Appendix II). Since the elapsed time between the censuses was 15-18 hours it is difficult to decide if any caribou sighted on October 23 may be added to the total counted on the next day. Perhaps only the group of 42 caribou seen near the tip of Cape Yakyak on October 23 should be added to the October 24 caribou counts due to the isolation of the Cape Yakyak area.

By adding the 42 caribou seen on Cape Yakyak to the 256 observed on October 24, the minimum population was 298 (Appendix III). Approximately 56 caribou were harvested prior to the October 23-24, 1974 survey.

During March 1975 the Adak Island Caribou Management Cooperative Agreement between the Department of the Navy, Adak Naval Station and the

Department of the Interior, U.S. Fish and Wildlife Service and the Alaska Department of Fish and Game was signed. Now that the agreement has been signed, improved caribou management can be implemented.

Recommendations

A hunter log should be maintained at the U.S. Naval Quarter Deck office at Adak. By using the log the caribou harvest can be monitored more effectively than in the past.

A letter should be sent requesting the Naval Captain in charge of Adak to require all military personnel who hunt to check in and out and complete the hunter log at the Naval Quarter Deck office.

Based on the October 23-24, 1974 survey a minimum of 298 caribou were observed. Prior to the survey 56 animals had been taken. After the survey 37 caribou were harvested bringing the total to 93. This would mean that approximately 90 caribou should be taken during the 1975-76 hunting season.

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APPENDIX I

Adak Caribou Herd, Population and Mortality 1958 - 1974

Year	Winter Population	Natural Mortality*	Hunting Mortality*
1958	10	1	0
1959	23	1	0
1960	-	0	0
1961	-	1	0
1962	36	0	0
1963	43	0	0
1964**	65	1	4
1965**	87	8	2
1966**	106	3	18
1967**	126	1	24
1968**	163	3	55
1969**	167	0	51
1970**	214	0	53
1971**	230	3	45
1972**	347	1	98
1973**	230(est. Post Hunting 0 population)	0	108
1974**	264(est. Post Hunting 0 population)	0	93

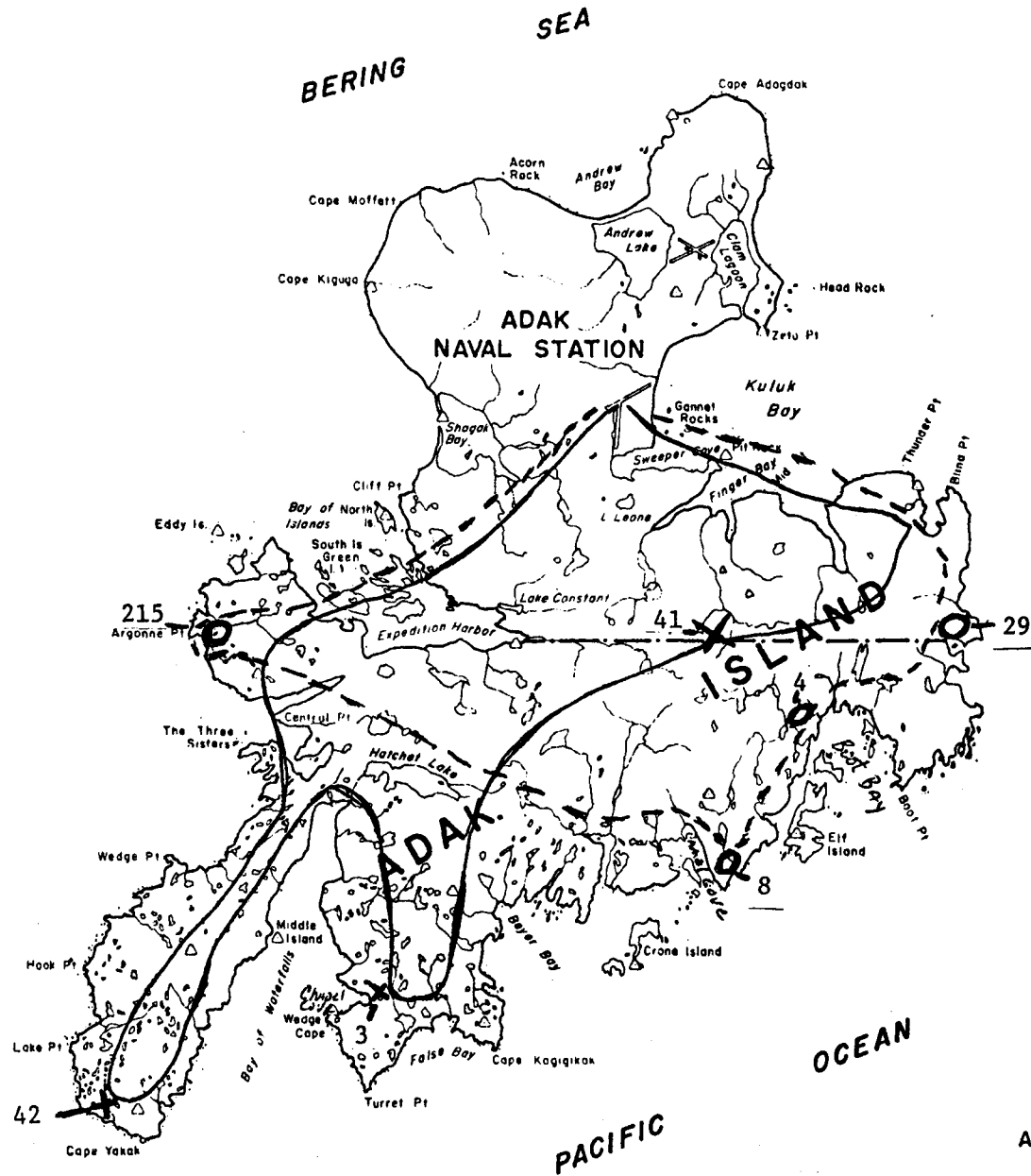
* Essentially, all natural mortality was due to entanglement in wire prior to 1969.

** Allowable harvest: 1964 - 10; 1965 - 30; 1967 - 50; 1968 - 50;
1969 - 50; 1970 - 50; 1971 - 50 plus 20 more;
1972 - 50 plus 97 more; 1973 - 140; 1974 - 70
plus 48 more.

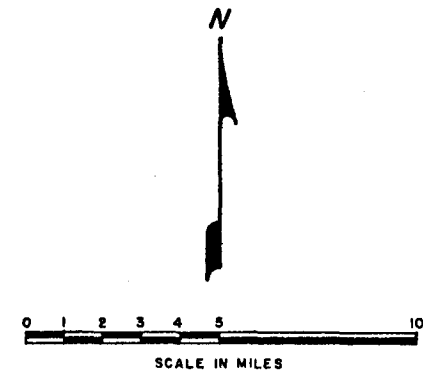
PREPARED BY: Jerome J. Sexton, Game Biologist II

APPENDIX II

1974 CARIBOU CENSUS



- Oct. 23 flight line
- Oct. 24 flight line
- X Animals seen Oct. 23
- O Animals seen Oct. 24



ADAK ISLAND

ALEUTIAN ISLANDS NATIONAL WILDLIFE REFUGE
ALASKA

APPENDIX III

Adak Island Caribou Survey October, 1974

<u>Area</u>	<u>Oct 23</u>	<u>Oct 24</u>
End Cape Yakak	42	
Chapel Cove	3	
Inland NW of Boot Bay	41	
Caribou Peninsula (s. side)		215*
Camel Cove		8
Boot Bay		4
Camper's Pt.		29
Total	86	256
		42
		298?

* Eight observers counted this group and this represents the average--should be very accurate.

PREPARED BY: Jerome J. Sexton, Game Biologist II

CARIBOU

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 11 - Wrangell Mountains and Chitina Valley
(Mentasta Herd)

Seasons and Bag Limits

Aug. 10 - Sept. 30

One caribou

Seasons and bag limits from 1968 until 1974 are listed in Appendix I. Earlier seasons and bag limits corresponded with those listed for the Nelchina caribou herd (Game Management Unit 13, Appendix I).

Abundance and Mortality

Relatively little recent information has been obtained for the Mentasta herd. Previous estimates of abundance are given in Appendix I, indicating a relatively stable herd size in recent years. Reported harvests (Appendix I) have varied widely, but it is probable that larger harvests were mostly from bands of Nelchina caribou that wintered in Unit 11. Harvests from this herd during the past 3 years are probably more typical. If the typical harvest has been 100 caribou and the typical herd size has been around 2,000 caribou, average harvests of about 5 percent of the total herd have apparently stabilized herd growth. However, hunters have been selecting bulls so it may be that natural mortality on this herd is about equal to annual productivity.

Most hunters have been residents of Alaska. A reduction of season length and bag limit by Commissioner's Announcement during July, 1972 apparently did not reach several hunters. Thus, 3 percent of the hunters killed more than one caribou, and 17 percent of the successful hunters used snow machines (the season legally closed on Sept. 20). The reduction in season length shifted the harvesting effort away from the Nabesna Road toward Mt. Sanford and Mt. Drum where aircraft are almost necessary for access.

Management Summary and Recommendations

The Mentasta caribou herd has apparently been stabilized with relatively low harvests of mostly bulls. This type of hunt, where most hunters use aircraft to reach areas that they hunt on foot, frequently provides a lot of enjoyment per animal harvested (a high quality hunt) and is desirable. The season and bag limit should remain unchanged.

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APPENDIX I

Seasons, bag limits, harvests, sex composition of the harvests, and abundance estimates, Mentasta herd, 1968-69 to 1974

Year	Season	Bag Limit	Harvest		Reported Adult Males in Harvest Number (%) ^{b.}	Estimated Total Adult Caribou Population ^{c.}
			Known	Estimated ^{a.}		
1968-69	Aug. 10 - Mar. 31	3 Caribou	304	----	122 (74%)	----
1969-70	Aug. 10 - Mar. 31	3 Caribou	288	414	203 (71%)	1892
1970-71	Aug. 10 - Sep. 30 Nov. 1 - Mar. 31	3 Caribou	846	1317	519 (62%)	2047
1971-72	Aug. 10 - Mar. 31	3 Caribou	1693	2006	742 (45%)	----
1972	Aug. 10 - Sep. 20	1 Caribou	89	----	60 (69%)	2202
1973	Aug. 10 - Sep. 30	1 Caribou	81	99	65 (82%)	----
1974	Aug. 10 - Sep. 30	1 Caribou	90	105	66 (76%)	----

a. Estimated harvests were based on extrapolation formulas.

b. Male percentage in the harvest during 1968-69 was based on a sample size of 164. Percentages are based only on reports where sex of kill was specified.

c. Skoog tallied 2305 caribou in the Mentasta herd during February 1962 (Bos, 1974). Maximum total estimates made during post calving aggregations of subsequent years are listed. Abundance estimates during 1970 and 1971 were accumulated estimates of group sizes made from a fixed wing aircraft. The 1973 value of 2202 was a corrected census estimate obtained from direct summer counts corrected for fall composition values.

Prepared by: Carl McIlroy, Game Biologist III

APPENDIX II

A comparison of percentage of resident hunters, hunter success and transportation means for the Mentasta herd, 1969-70 through 1974.

Year	Resident Hunters, Number (%) ^a	Caribou Kill per Hunter, Number (%)			Average Kill Per Hunter	Transportation Means of Successful Hunters, Percent ^b						
		0	1	2+		A	H	B	S	O	F	Sample
1969-70	114 (68%)	102 (35%)	122 (42%)	67 (23%)	0.99	-----Not Available-----						
1970-71	389 (85%)	118 (19%)	250 (41%)	241 (40%)	1.39	-----Not Available-----						
1971-72	827 (89%)	457 (32%)	474 (33%)	492 (35%)	1.19	-----Not Available-----						
1972	50 (69%)	342 (82%)	63 (15%)	11 (3%)	0.22	31%	7%	2%	17%	25%	18%	84
1973	53 (66%)	172 (68%)	81 (32%)		0.47	75%	12%	--	--	5%	7%	73
1974	51 (59%)	107 (54%)	90 (46%)		0.84	64%	18%	1%	--	10%	7%	84

a. Percentages calculated by: (residents/residents & nonresidents) x 100.

b. Symbols for transportation means: A = Airplane, H = Horse, B = Boat, S = Snow machine, O = Off-road vehicles (including trail bikes) and F = Afoot and/or highway vehicle, Sample = Sample size. Because some hunters do not report the type of transportation used and other hunters report several types, the sample size does not represent all hunters, but this data is useful for trend comparisons.

Submitted by: Carl McIlroy, Game Biologist III

CARIBOU

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 12 - Chisana Herd

Seasons and Bag Limits

Aug. 10-Sept. 30

One caribou

Harvest and Hunting Pressure

Harvest ticket returns disclosed a harvest of 45 animals (34 bulls and 11 cows) from the Chisana herd. The extrapolated harvest was estimated at 50 caribou. Sixty percent of the harvest was by residents.

Most animals harvested from this herd are taken in conjunction with sheep hunting or during guided combination hunts. The herd is usually accessible only by use of aircraft, horses or off-road vehicles.

Composition, Productivity and Distribution

No data were available. Aerial surveys conducted on June 13 revealed a post-calving group of approximately 35 cows and calves in the foothills near the head of Horsfeld Creek. No other calves were sighted, although a number of other small groups of caribou were observed in the same general area.

The location of the traditional calving grounds for this herd, if one exists, is unknown.

Management Summary and Recommendations

Further efforts should be made to gather information on this herd.

No changes in seasons or bag limits are recommended at this time.

PREPARED BY:

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SUBMITTED BY:

Oliver E. Burris
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CARIBOU

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Units 12, 20 and 25 - Fortymile Herd

Seasons and Bag Limits

Aug. 10 - Sept. 20

One caribou

Harvest and Hunting Pressure

Harvest ticket data disclosed a reported take of 29 caribou from the Fortymile herd consisting of 22 bulls, 5 cows and 2 of unreported sex. The extrapolated harvest was computed to be 33 animals.

Harvest figures also indicated that caribou hunters took an average of one caribou apiece, which is probably incorrect. Data obtained from the Taylor Highway check station indicated that virtually all 500 plus people hunting moose along the Taylor Highway were also seeking caribou. Apparently these people did not report on their harvest tickets that they hunted caribou or the reported average caribou per hunter would have been considerably lower.

Most successful hunting effort took place along the Seventymile River and in the vicinity of American Summit on the Taylor Highway. Residents took 55 percent of the harvest.

Composition and Productivity

Early summer composition counts conducted from the ground on June 4 through June 6, 1974 revealed a calf:cow ratio of 53:100. Yearlings constituted only 3 percent of the herd. During the previous fall, composition surveys showed calves (this cohort aged as yearlings during June 1974) constituted nearly 7 percent of the herd.

Fall composition counts conducted on September 20-22, 1974 indicated a calf:cow ratio of 20:100 (13 percent of herd), a decline of 62 percent in a three and one-half month period. Causes of summer calf mortality are unknown but grizzly bear and wolf predation are believed to be major contributing factors.

Herd Size and Trend

The population was estimated at a minimum of 5,300 in October 1973. The low yearling recruitment in 1974 supports the estimate of 4,000 obtained that year. It is unlikely that the herd decreased from 5,300 in 1973 to 4,000 in 1974. It seems probable that one of the censuses were inaccurate. It is presently felt that the 1974 census was more accurate.

Management Summary and Recommendations

Despite the severe curtailment of hunting and the very low human harvest of 33 caribou the lack of recruitment has probably resulted in a continued decline of the herd. With only 20 calves per 100 cows surviving to fall 1974 the outlook is for the decline to continue in 1975. Other causes of mortality must be reduced if this herd is to increase.

I recommend that investigations should be made into the feasibility of increasing calf survival by influencing the most obvious causes of calf mortality. I further recommend that the rate of increase should be established at about five percent a year with an increased level of hunting. The primary objective should be to reestablish a herd of about 10,000 caribou, contingent upon the ability of the range to support this amount.

No changes in seasons or bag limits are recommended at this time.

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CARIBOU

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 13 - Nelchina Herd

Seasons and Bag Limits

Aug. 10 - Sept. 20

One caribou

Seasons and bag limits from 1946-47 through 1974-75 are summarized in Appendix I.

Harvests and Hunting Pressure

Estimated total harvests and percentages of adult males in each annual harvest are presented in Appendix I. Harvests were relatively low prior to 1954 with a high selectivity for males being apparent. A number of factors occurred during the late 1950's that markedly increased the harvest: increasing numbers of caribou, liberalized seasons and bag limits, and opening of the Lake Louise and Denali Highways. Much of the increased harvest was associated with increased percentages of highway vehicle-afoot hunters (Appendix II). Harvests fluctuated at a high level through the early and mid-1960's. Snow machines made their appearance as a useful hunting vehicle by the mid-1960's, and users of snow machines accounted for the increasing harvests of the late 1960's and early 1970's. Reduction of the season to September 20 during 1972 essentially eliminated snow machines as a transportation means. The reduced season, reduced bag limit and marked reduction in caribou numbers all contributed to a low harvest during 1972. However, the harvest has increased during 1973 and 1974, and these increases were mainly associated with increased harvesting by aircraft and off-road vehicle users.

While the total harvest has markedly decreased during the 1970's, other herds that require harvest reporting as a condition of legal hunting also suffered decreased harvests. The following table shows that the Nelchina herd contributes a majority of the reportable harvest from Game Management Units 11, 12, 13, 14 and 20.

	<u>1970-71</u>	<u>1971-72</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>
Nelchina Herd's Contribution to The Harvest Report Program	52%	55%	24%	60%	82%

Eighty-two percent of the 1974 Nelchina harvest was taken by Alaskan residents.

Productivity and Calf Survival

Calf survival found during late winter is shown on Appendix III. Short yearling counts have shown fluctuations over time. There was concern about the viability of the Nelchina caribou herd during the late

1940's, and this was one of the major reasons for the federal wolf control program in Unit 13. Yearling:cow ratios during the early 1950's, as effective wolf control was just beginning, were around 25 yearlings/100 cows. The federal wolf control program had reduced wolf numbers to a minimal level by 1952, and caribou calf survival increased from a mean of 42 percent during 1950-52 to a mean of 65 percent from 1954-59. During the 1950's, caribou numbers roughly quadrupled (Appendix I) even assuming that early counts were only one-third as efficient as more recent counts. Caribou yearling:cow ratios decreased since the late 1950's until the last two years. The high yearling:cow ratios during recent years were paralleled by increasing census counts since 1972 (Appendix I). Wolf numbers have been roughly inversely proportional to yearling:cow ratios. A regression of yearling:cow ratios on wolf population estimates had a correlation coefficient of -0.88 (where zero = no correlation and ± 1.0 = perfect correlation).

Seasonal Movements

Seasonal movements of the Nelchina caribou herd from June 1974 through March 1975 are shown on Fig.1. The arrows indicate probable movements with hatch areas depicting locations where caribou were found at specific time periods. From June 1974, where the herd was photo-censused at the head of the Oshetna River, most of the caribou moved to Drop Creek - Broad Creek vicinity where they wintered. A smaller band wintered between Lake Louise and Eureka. By March the band in Unit 11 had moved to the western slope of Mt. Drum where 4,463 were counted during a composition count. An additional 1,018 caribou were counted at Eureka during the same time period. Both groups moved toward the Kosina Creek calving area during April.

Management Summary

The Nelchina caribou herd increased from low levels during the early 1950's, to peak levels during the early 1960's, and then declined to low levels during the early 1970's. Harvests followed the same temporal pattern but were out of phase by several years. Harvests have been low, but increasing, during the past three years, and the Nelchina herd has been increasing. Calf survival to short yearling age has also increased, then declined since the 1950's in parallel with increases and decreases in caribou numbers. Yearling:cow ratios were regressed on wolf abundance trend counts to obtain a correlation coefficient of -0.88 , indicating a high degree of correlation. Most of the Nelchina herd spent the winter and spring from Drop Creek to the Sanford River, but a smaller segment spent the winter and spring from Lake Louise to Eureka.

Recommendations

Photo-census the herd annually to obtain total numbers and calf:adult percentages.

Obtain spring calf survival counts (for short yearlings) perhaps every three years.

Maintain a bag limit of 1 caribou but manipulate the season to obtain harvests roughly equal to 5 percent of the herd.

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APPENDIX I

Seasons, bag limits, harvests, and abundance estimates, Nelchina herd, 1946-1974^a

Year	Season	Caribou Bag Limit	Estimated Harvest	Reported Adult Males in Harvest		Estimated Adult Caribou Population ^b
				Number	%	
1946-47	Aug 20-Sept 30	Resident - 2 caribou except	200			
	Dec 1-Dec 15	Nonresident -1 caribou calves				
1947-48	(Same)	(Same)	200			
1948-49	Aug 10-Sept 30	(Same)	300	175	97%	4500-5000
	Dec 1-Dec 15					
1949-50	(Same)	1 caribou except calves	350			
1950-51	(Same)	(Same)	500			5000-5500
1951-52	(Same)	(Same)	525			
1952-53	(Same)	1 branch-antlered male only	450	291	93%	7600
1953-54	(Same)	(Same)	700	445	85%	13200
1954-55	Aug 10-Sept 30	1 caribou except calves	2000	1271	72%	40000
	Nov 20-Nov 30					
1955-56	(Same)	2 caribou	4000	1076	73%	36000
1956-57	Aug 10-Dec 31	2 caribou	3500	844	72%	
1957-58	(Same)	3 caribou	2500	1125	75%	
1958-59	(Same)	3 caribou	3500			
1959-60	(Same)	3 caribou	4000	922	70%	
1960-61	(Same)	3 caribou	5500	2535	66%	
1961-62	(Same)	3 caribou	8000	3923	58%	64100
1962-63	(Same)	3 caribou	3500	2640	69%	
1963-64	Aug 10-Mar 31	3 caribou	6300	3709	61%	
1964-65	(Same)	4 caribou	8000	1850	66%	
1965-66	(Same)	3 caribou	7100	1222	67%	
1966-67	(Same)	3 caribou	5500	849	71%	
1967-68	(Same)	3 caribou	4000	740	65%	45700
1968-69	(Same)	3 caribou	6000	2334	60%	
1969-70	(Same)	3 caribou	7800	5332	49%	
1970-71	Aug 10-Sept 30	3 caribou	7247 ^c	4018	63%	
	Nov 1-Mar 31					
1971-72	Aug 10-Mar 31	3 caribou	10131 ^c	6743	47%	
1972-73	Aug 10-Sept 20*	1 caribou**	555 ^d	388	72%	6147
1973	(Same)	1 caribou	810	412	67%	6440
1974	(Same)	1 caribou	1193	656	66%	7776

a. Data from Bos(unpublished material) and from unpublished material in caribou files.

b. Census data based on extrapolated total counts in mid-winter censuses and on adult only counts in summer censuses. Estimates prior to 1954-55 may be low by a factor of 2 or more.

c. Harvest figures include half of the harvest coded to the Mentasta herd.

d. Based on reported harvest from harvest ticket returns. The actual harvest was probably larger.

* Season dates changed from Aug 10-Dec 31 to Aug 10-Sept 20 by authority of field announcement issued July 27, 1972.

** Bag limit changed from three caribou to one caribou by authority of finding of emergency issued July 27, 1972.

PREPARED BY: Carl W. McIlroy, Game Biologist III

APPENDIX II

Reported Means of Transportation by Successful Nelchina Caribou Hunters

Year	Methods of Transportation, Percent ^a .					
	A	H	B	S	O	F
1952-53	12%	<1%	<1%	0	59%	28%
1953-54	23%	0	6%	0	37%	33%
1954-55	21%	0	8%	0	39%	32%
1960-61	10%	<1%	10%	0	24%	55%
1969-70	34%	<1%	4%	26%	12%	23%
1970-71	28%	<1%	4%	35%	13%	20%
1971-72	15%	<1%	2%	37%	10%	36%
1972-73	44%	3%	5%	<1%	33%	14%
1973	54%	3%	5%	<0%	32%	7%
1974	47%	3%	3%	0	38%	10%

a. Symbols for methods of transportation: A = airplane, H = horse, B = boat, S = snowmachine, O = off-road vehicle plus motorbike, and F = highway vehicle and afoot.

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APPENDIX III

Estimated percentages of short yearlings among Nelchina caribou, 1951-1974.

Year	Number in Spring Classifications ^{a.}				Ave. Yrlg. per 100 cows	Percent Survival ^{b.}	Wolf Abundance ^{c.}
	Yrlg.	Adults	Cows	Yrlg./100 Cows			
1950-51	110	747	501	22	25.0	42%	425
1951-52	157	843	565	28			—
1954-55	364	1336	895	41	38.8	65%	12
1955-56	287	983	628	42			35
1956-57	899	3603	2240	37			—
1957-58	60	272	158	35			—
1958-59	204	665	485	39			120
1959-60	346	1783	1202	26	31.5	53%	—
1960-61	536	1840	1354	36			125
1961-62	150	636	443	30			160
1962-63	217	945	633	34			—
1969-70	654		2243	29	26.0	43%	—
1970-71	696		2069	34			—
1971-72	199		1280	16			425
1972-73	575		2289	25			—
1973-74	616		1479	42	38.0	63%	207
1974-75	1141		3312	34			—

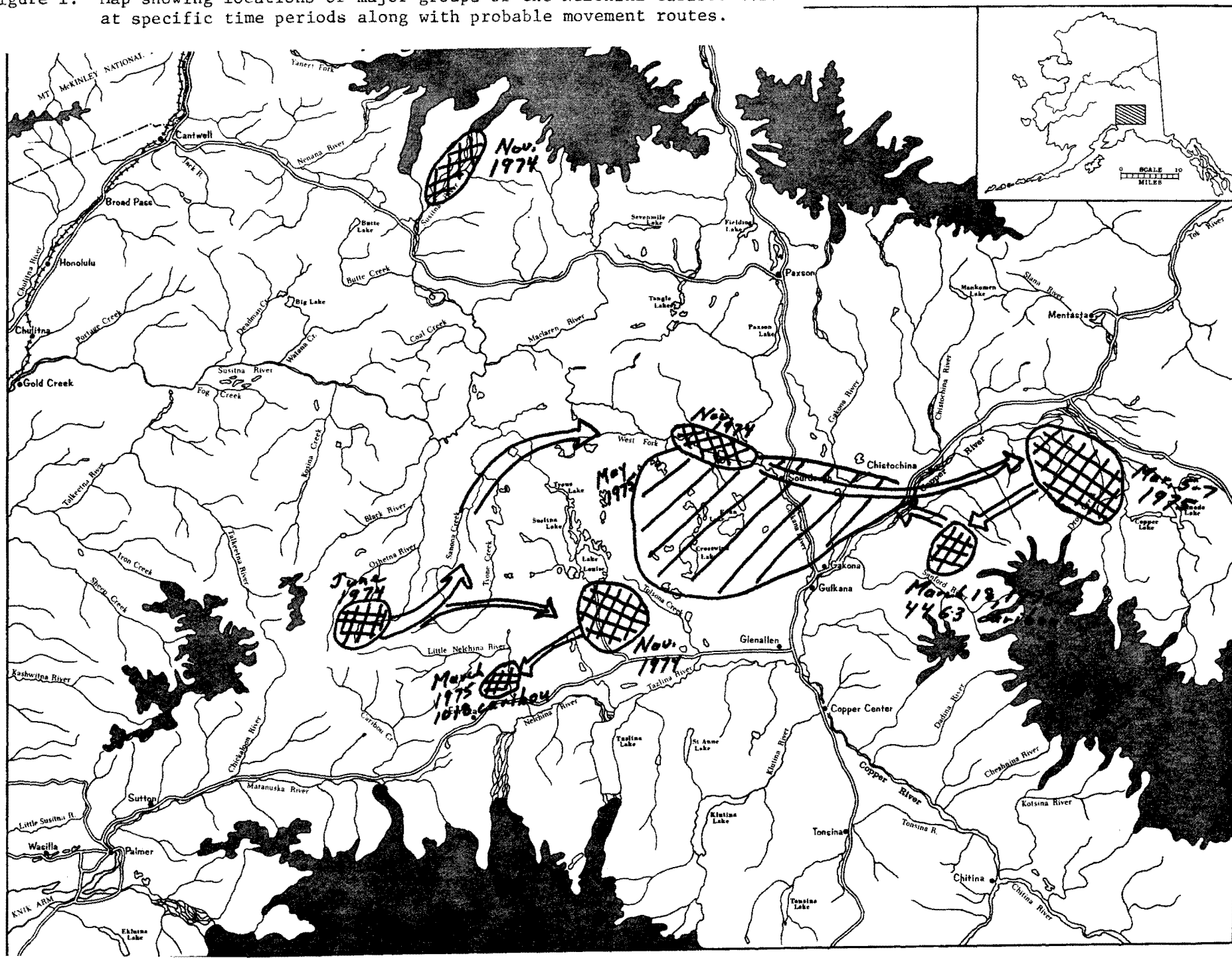
a. The mean adult:cow ratio from 1955-56 through 1961-62 was 0.67 (range, 0.58 to 0.74). Values for adults from 1950-51, 1951-52, and 1962-63 were multiplied by 0.67 to obtain estimates of cows.

b. Percent survival means from birth (assuming 60 percent natality) through the winter.

c. Wolf numbers are based on wolf population trend counts except that values for 1950-51 (preceeding effective federal wolf control) and during 1971-72 were made equal to the population level of 425 estimated for 1965-66.

Prepared by Carl McIlroy, Game Biologist III

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CARIBOU

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Subunits 14A and 14B - Upper Cook Inlet

Seasons and Bag Limits

Aug. 10 - Sept. 20

One caribou

Harvest and Hunting Pressure

Eighteen caribou (13 males, 3 females and 2 of unknown sex) were reported taken by hunters in Game Management Unit 14 during the 1974 caribou season (Appendix I). A high of 55 caribou were taken in Unit 14 during the 1971-72 season. The 18 caribou taken in 1974 represent an increase of five animals over last year's season.

Fourteen (82.4 percent) of the caribou were taken by resident hunters and three (17.6 percent) were taken by nonresidents (Appendix II). Although nonresident participation had increased in the harvest each year since 1969, the take in the 1974 season was accomplished primarily by residents.

Composition and Productivity

Incidental observations of caribou during sheep surveys were recorded in two areas on the same day in the Talkeetna Mountains. One hundred and twenty-three caribou were scattered throughout the Talkeetna River, Iron Creek and Yellowjacket Creek areas and on the same day (June 25, 1974), 14 bull caribou were observed in the Talkeetna River drainage above Yellowjacket Creek. No specific effort had been made to look for caribou during the sheep surveys.

Management Summary and Conclusions

Unit 14 caribou are located on the fringes of the Nelchina herd and are not presently considered to be an important big game animal in terms of harvest in this unit. Caribou observations are sporadic and little interest is generated by the hunting public in Unit 14. Harvests have ranged from 55 (1971-72) to 13 (1973-74) with the 1974-75 harvest standing at 18. The harvest should remain at a low level pending recovery of the Nelchina herd.

Recommendations

Because Alaska's caribou are managed by herds rather than Game Management Unit, it is recommended that the season and bag limit for caribou in Unit 14 remain the same as for the Nelchina (Unit 13) herd.

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Appendix I. Reported Harvest of Caribou from Alaska's Game Management Subunits 14A and B, 1969-70 through 1973-74.

<u>Year</u>	<u>Males</u>	<u>Percent</u>	<u>Females</u>	<u>Percent</u>	<u>Unspecified</u>	<u>Total</u>
1969-70	Breakdown not available for Unit 14					14
1970-71	"	"	"	"	"	38
1971-72	"	"	"	"	"	55
1972-73	"	"	"	"	"	21
1973-74	11	84.6	2	15.3	0	13
1974-75	13	81.2	3	18.7	2	18

Appendix II. Residency* of Successful Caribou Hunters in Alaska's Game Management Subunits 14 A and B, 1969-70 through 1974-75.

<u>Year</u>	<u>Resident</u>		<u>Nonresident</u>		<u>Residency</u>	<u>Total</u>
	<u>No.</u>	<u>Percent</u>	<u>No.</u>	<u>Percent</u>	<u>Not Given</u>	
1969-70	8	80.0	1	10.0	1	10
1970-71	10	54.1	11	45.8	0	24
1971-72	21	53.8	17	43.5	1	39
1972-73	9	42.9	12	57.2	0	21
1973-74	4	30.8	9	69.2	0	13
1974-75	14	82.4	3	17.6	1	18

* Hunters who took more than one caribou only counted one time.

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CARIBOU

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 16 - West Side of Cook Inlet

Seasons and Bag Limits

Aug. 10 - March 31

Two caribou

Harvest and Hunting Pressure

No data were gathered during this report period.

Composition and Productivity

No data were gathered during this report period.

Management Summary and Conclusions

As noted in the Survey-Inventory Progress Report for 1973, few data are available on caribou in Unit 16. The Alaska Board of Fish and Game reduced the limit on caribou in Unit 16 from three to two, but the season length remained the same as in 1973. With season lengths shortened in Southcentral Alaska, it is expected that more hunter pressure may be generated on caribou in Unit 16 in the future.

Recommendations

The harvest ticket reporting requirements should be expanded to include caribou taken in Units 16 and 19.

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CARIBOU

SURVEY - INVENTORY PROGRESS REPORT - 1974

Game Management Unit 17 - Bristol Bay (Mulchatna Herd)

Seasons and Bag Limits

July 1 - June 30

Three caribou

Harvest and Hunting Pressure

The Mulchatna caribou herd received the heaviest hunting pressure in recent years during the 1974-75 season. The fall hunting pressure remained high due to inflated meat prices and restrictive moose and caribou seasons in the game management units accessible by road. For the first time (between January 1 and April 30) heavy hunting pressure developed in Unit 17 because it was one of the few units in which it was legal to hunt caribou the same day the hunter was airborne. Winter conditions with firmly packed snow and frozen water surfaces created excellent access for ski equipped, light aircraft. The estimated harvest for the 1974-75 season was 1,500 animals or a four-fold increase over the 1973-74 estimate.

Composition and Productivity

In mid-June 1974 an aerial photography census of the Mulchatna caribou herd was conducted. A total of 13,079 caribou were counted from photographs taken at that time. Composition counts following the photography indicated that 57.3 percent of the animals present were females older than calves and that there were 38.3 calves per 100 cows. Mid-October sex and age classification counts obtained ratios of 55.0 bulls per 100 cows and 34.9 calves per 100 cows. Little mortality had occurred to the calves during the summer months. Utilizing data from these two surveys, an extrapolated population estimate for the Mulchatna caribou herd was 14,231 animals. This estimate should be considered minimal as small bands of peripheral animals were missed during the June census that provided the base for extrapolation.

Management Summary and Conclusions

The Mulchatna caribou herd is receiving heavy hunting pressure at this time. If the extrapolated population estimate and the harvest estimate are accurate, the herd was harvested at approximately the 10 percent level. This level of harvest is not considered biologically detrimental, but if it increases it may approach the level of annual recruitment to the herd. With the increased level of utilization, this herd will have to be more closely monitored than in the past.

A major reason for Unit 17 receiving increased caribou hunting pressure in recent years is that the unit has more liberal seasons and bag limits in relationship to those units on the road system readily available to Anchorage resident hunters. Much of the unit lies within a few hours flying time from Anchorage and the exemption that allows hunters to kill caribou the same day airborne in Unit 17 between January 1 and April 30 particularly attracted hunters. The liberal seasons, bag limits, and methods and means adopted to facilitate harvest by local residents are creating competition between villagers and urban based hunters. Restriction may be necessary to minimize conflicts between these two user groups.

Recommendations

No changes in the season or bag limit are recommended. The exemption that allows caribou hunting the same day airborne during winter months should be carefully evaluated both for its biological and sociological impacts. A formal program to monitor harvest should be initiated.

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CARIBOU

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Units 18, 19 and 21 - Including portions of the Mulchatna herd, the Beaver Mountains herd and other groups found in the Kuskokwim Mountains and the north slope of the Alaska Range.

Seasons and Bag Limits

The portions of Units 18 and 21 south of the Yukon River, and Unit 19	Aug. 10-March 31	Three caribou
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The portions of Units 18 and 21 north of the Yukon River	No closed season	No limit
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MULCHATNA AND BEAVER MOUNTAINS HERD

Harvest and Hunting Pressure

Patterns of hunting in Unit 18 and western Unit 19 (western Kuskokwim Mountains, Kilbuck Mountains and the Holitna-Stony River area) continue to change annually. Sport hunting is increasing, especially in the Hoholitna-Swift-Stony and Mulchatna River areas. The fall of 1974 probably saw more aircraft in the area than in any previous season. Tent camps were widespread around the larger lakes in this area. Considerable hunting traffic was a result of air taxi operators hauling hunters out of Anchorage and dropping them off at various lakes. Harvest in this area is probably over 500 animals annually.

Seasonal Distribution, Migration and Concentration

Considerable growth and expansion of the Mulchatna herd appear to have been taking place over the past two years. In May 1974 many small groups of parturient cow caribou were noted moving from east to west in the Nushagak Hills towards the head of the Aniak River. These caribou appeared to be part of the Mulchatna herd, although they were no doubt mixed with caribou which remain in the Kilbuck Hills and Aniak drainage. Considering the amount of area involved, several thousand caribou could have been involved in this movement away from the traditional calving grounds on the upper Mulchatna. Later in October while surveying beaver caches on the Hoholitna River I "discovered" several thousand caribou in the area between the north and south forks of that river. Subsequent counts of sex and age composition of this group provided an excellent insight into the current status of the Mulchatna herd. Calf production appeared very good with 34.9 calves per hundred cows. Other population parameters as computed by Bos (BGDIF) suggest that this herd is healthy and possibly increasing.

BEAVER MOUNTAINS HERD

Harvest and Hunting Pressure

There was no known harvest of caribou from the Beaver Mountains during the 1974 season.

Seasonal Distribution, Migration and Concentration

No observations of this herd were made in 1974.

KUSKOKWIM MOUNTAINS GROUP (Cloudy-Sunshine Mountains, Nixon Flats, Unit 19)

Harvest and Hunting Pressure

Early wintering concentrations of caribou from this group failed to appear on the Nixon Flats during October and November 1974. In October considerable sign of caribou activity was noted in the upper Colorado Creek and Susulatna River headwaters, but only 17 adults and 1 calf were located. Because this group did not appear on the Unit 19 side of these drainages, there was no attempt to harvest any caribou.

Seasonal Distribution, Migration and Concentration

So few observations were made of these caribou in 1974 that no new or pertinent data are available regarding this group.

BIG RIVER-FAREWELL-TELIDA GROUP, Unit 19

Harvest and Hunting Pressure

Hunters from Telida and Nikolai took an estimated 25 caribou from this group during spring 1974. Sport hunters harvested an estimated 50 animals during fall hunts in 1974. Because caribou tend to be scattered and in small numbers, harvest of these animals is sporadic and light.

Composition, Productivity and Distribution

No data were gathered in 1974.

Management Summary and Discussion

Caribou harvests within Units 18, 19 and 21 are relatively light with the exception of the Mulchatna group. Restrictive seasons in other units have shunted many airborne hunters into the southeast portion of Unit 19 where part of this herd is often found. While the herd appears to be undergoing considerable expansion and growth, the level of harvest now being placed on this group is not actually known.

A bag limit of three caribou is certainly a worthwhile attraction to hunters who have only short seasons and single bag limits east of the Alaska Range. Consideration, therefore, should be given towards developing some means of measuring the take of caribou from this herd.

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CARIBOU

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 20 - Fairbanks, Central Tanana Valley (Delta Herd)

Seasons and Bag Limits

No open season

Herd Size, Composition and Productivity

The herd was estimated at 1,400 to 2,000 in fall 1974. Composition and productivity figures were previously presented in the 1973 Survey-Inventory Report.

Management Summary and Recommendations

The herd is obviously continuing to decline. The causes of the low initial calf production are not known. Plans should be made to determine the reasons for the poor calf production and survival and to restore the herd to a condition where it can be hunted.

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CARIBOU

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 20 - Macomb Plateau (Delta herd east of Delta River)

Seasons and Bag Limits

Aug. 10 - Sept. 20*

One caribou

*The Macomb Plateau Management Area was closed to all motorized vehicles (except float planes on Fish Lake) involving hunting from Aug. 10 - Sept. 20.

Harvest and Hunting Pressure

Restrictions eliminating motorized vehicles within the Macomb Plateau Management Area were initiated for the 1974 season in an effort to reduce kill and hunting pressure by reducing hunter efficiency. The vehicular restrictions successfully reduced the kill while providing for considerable recreational opportunity. According to harvest ticket reports, 89 hunters took 29 caribou (14 females and 15 males) from Macomb Plateau and 10 (9 males and 1 female) from the Alaska Range between the Delta and Robertson Rivers. Overall hunter success was 44 percent. It is interesting to note that walk-in hunter success was 15 percent, those using aircraft 25 percent, ATV's 71 percent and horses 80 percent. The following data were compiled from the harvest tickets.

Table 1. Summary of harvest ticket data for Macomb Plateau.

Transport Type	No. of all hunters	Successful hunters		
		cows	bulls	Total
Walk in	25	2	4	6
Aircraft	12	1	2	3
ATV's	14	1	9	10*
horses	<u>38</u>	<u>11</u>	<u>9</u>	<u>20</u>
Total	89	15	24	39

* Caribou not taken in Macomb Management Area.

Composition and Productivity

Late October composition counts from the ground and air indicated the following herd composition.

Bulls/100 cows	43	Calf % N	9(40)
Yearlings/100 cows	8	Cow % N	60(269)
Calves/100 cows	15	Bull % N	26(115)
Yearling % N	5(21)	Sample size	445

Management Summary and Recommendations

There are not enough data compiled on the Macomb caribou and their movements to determine population trends. Preliminary findings indicate that what is known as the Macomb herd may be a nucleus herd of 250 animals remaining on the plateau year-round and an equal number of animals returning to the plateau only during October and November for the rut. These animals then leave the plateau to winter along the upper Robertson, Johnson, Gerstle and Delta Rivers. Such a time and space distribution would mean that the nucleus herd receives much more hunting pressure than the caribou that arrive after the hunting season. In effect, we may be collecting composition data from two separately hunted populations; one with heavy pressure and one with light pressure and then lumping the two together for management decisions.

With low calf survival and increasing wolf predation the present harvest level of 12 percent on the nucleus herd is likely to cause a slow reduction in that group. Caribou in the surrounding area sustain only 4 percent of the harvest and are possibly on the increase. A higher take of wolves from the area could result in increased calf survival and more caribou available to hunters.

More information on caribou movements is needed to determine location of caribou during the hunting season and range conditions should be evaluated.

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Regional Management coordinator

CARIBOU

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Units 23, 24 and 26 - Arctic Herd

Seasons and Bag Limits

No closed season

No limit

Harvest and Hunting Pressure

Caribou were widely distributed throughout northwestern and parts of central Alaska during the winter of 1973-74 and, consequently, when the animals proceeded north on their spring migration they passed in the vicinity of several villages. This condition created the potential for a large spring harvest. Breakup was later and more severe than normal, and hunters found caribou were not easily accessible. These conditions were compensating and the spring harvest was below normal.

The southward migration in the fall was late and a major portion of the herd did not cross the Brooks Range but overwintered on the Arctic Slope. Only a few animals were observed in the vicinity of Anaktuvuk Pass. The paucity of caribou migrating through the Central Brooks Range resulted in less than 25 caribou being harvested by villagers residing along the Koyukuk River.

The largest segment of the herd, about 10 to 20,000 animals, crossed the Kobuk River near Ambler and wintered in the area between Rabbit Mountain and the Waring Mountains. Although caribou were within snowmobiling distance of most villages along the Kobuk, snowfall in the early winter of 1974-75 was light, preventing easy access. The harvest was above normal at Ambler, but due to transportation difficulties the kill was below average at other villages along the Kobuk.

A significant number of caribou wintering in the vicinity of the coastline from Wainwright to Kivalina were available to hunters during most of the winter. There were no large concentrations of animals, but small bands from 20 to 100 seemed to be widely scattered throughout the area. The harvest was above normal at Wainwright, but about average at Pt. Hope, Kivalina, Noatak and Selawik further to the south. Residents from other villages in Units 23, 24 and 26 experienced below normal harvests, particularly at Hughes, Allakaket, Shungnak and Kobuk.

Composition and Productivity

Due to the lack of suitable aircraft and the wide dispersion of animals no composition counts were conducted.

Abundance, Distribution and Population Trends

From general observations by guides, air taxi operators, hunters, and other biologists, it was quite apparent that caribou were not available in large numbers as in previous years. Although the animals were apparently widely dispersed, mostly in small groups, there was certainly an absence of caribou in many portions of their former range. Considering that caribou migrate and disperse in an inherently unpredictable manner, the pattern exhibited during 1974 can be expected. There is ample evidence that hunting practices have been poor and crippling loss is probably a significant mortality factor. Also, many animals that have been retrieved and cleaned have been left in the field to rot.

Wolf numbers have increased throughout the Arctic herd's range, and there must be an increased amount of predation on caribou. All these factors together may be contributing to a decline in the caribou population.

Management Summary and Recommendations

A program should be initiated to determine the annual harvest, and hunters should be encouraged to use the resource wisely. The Arctic herd should be accurately censused and other population parameters should be investigated in order to develop an accurate annual assessment of abundance and/or trend.

PREPARED BY:

Carl Grauvogel
Game Biologist II

Robert Pegau
Game Biologist III

SUBMITTED BY:

Oliver E. Burris
Regional Management Coordinator

CARIBOU

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Units 25 and 26 - Porcupine Herd

Seasons and Bag Limits

No closed season

No limit

Harvest and Hunting Pressure

The harvest of the Porcupine caribou herd in 1974 was taken primarily by hunters from Kaktovik and Arctic Village in the United States and from Old Crow in Canada. Harvest estimates for Kaktovik, where most caribou are taken during the calving season, was 100 animals, and for Arctic Village, where caribou are taken in late summer and during winter months, it was from 700-1000. No figures are available for the harvest by Old Crow hunters but reports indicate it is probably no higher than Arctic Village. Sport hunting take of caribou in the area is negligible, probably less than 20.

Herd Size, Composition and Productivity

The size of the Porcupine herd has remained at about 110,000 animals since Hemming estimated its size in 1970. Composition observed during post-calving migration is presented in Table 1. Since bulls and yearlings may follow the major migration or may be scattered in other areas throughout the summer range, their representation in the table is low. Yearlings probably make up at least 9-10 percent of the population; the change in recruitment of the yearling age class is more likely a representation of a poor sample of that segment of the population than a reduction.

Table 1. Porcupine caribou herd composition observed during post-calving migration, 1972, 1973 and 1974.

Year	Source*	Cows		Calves		Calves/ 100 cows	Yearlings		Bulls		Total No.
		No.	%	No.	%		No.	%	No.	%	
1972	ADF&G	6,357	54	3,052	26	48	1,079	9	1,433	12	11,921
1973	RRCS/ADF&G	11,037	58	5,144	27	47	1,070	6	1,830	10	19,101
1974	RRCS	7,818	55	5,176	37	66	437	3	696	5	14,127

* Alaska Department of Fish and Game
Renewable Resources Consulting Services

Management Summary and Recommendations

Assuming that the yearling proportion of the herd is 9 percent, the total annual recruitment of this age class, based on a herd size of 110,000 is 9,900. With the present levels of calf production and yearling recruitment, the hunter harvest from the herd is well within acceptable limits.

No change in the season or bag limits is recommended.

PREPARED BY:

Harry Reynolds
Game Biologist III

SUBMITTED BY:

Oliver E. Burris
Regional Management Coordinator

BROWN/GRIZZLY BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 1 - Southeast Mainland

Seasons and Bag Limits

Sept. 1 - June 10

One bear every four regulatory years; provided that the taking of cubs or females accompanied by cubs is prohibited.

Harvest and Hunting Pressure

The harvest of brown bears in Unit 1 during 1974 was 18 animals (14 males and 4 females). This is an increase from the 11 taken the previous year, but within the limits of variation over the previous 13 years (7-29) and above the average for that period (15.2).

A summary of Unit 1 brown bear harvests since 1961 is presented in Appendix I.

The number of bears taken is too small to give significant parameters which might indicate overharvesting (percent males taken, average skull size and average age) on an annual basis. In 1974 the 14 male skulls averaged 21.6 inches in length plus width. This was 3.1 inches less than the previous year and 0.6 inches more than the mean of the previous seven years.

The average age of four male bears taken in Unit 1 in 1973 was 12.3 years and the average for 12 male bears taken in 1974 was 6.4 years. Because of the small sample these averages cannot be considered as a trend.

Composition and Productivity

No data were available. The sex composition of the harvest probably does not indicate the true composition of the population.

Management Summary and Conclusions

The Unit 1 brown bear harvest is small. There is no indication that present levels of harvest are detrimental to bear populations.

Recommendations

No regulatory changes are recommended on the basis of information currently available.

PREPARED BY:

David A. Johnson
Game Biologist III

SUBMITTED BY:

Robert E. Pegau
Regional Research/Management Coordinator

APPENDIX I

Brown-Grizzly Bear Sport Harvest, Calendar Years 1961 through 1974. By: Year, Total Kill, Number of Males, % of Males, No. of Nonresidents, % of Nonresidents, Mean Hide Size of Males, Mean Skull Size of Males, Mean Cementum Lines of Males and Calendar Year Seasons.

Calendar Year	Total Kill	No. Males	GAME MANAGEMENT UNIT 1						Calendar Year Seasons
			% Males ^{1/}	No. Nonres.	% Nonres.	Mean Size Male ^{2/}	Mean Skull Size Male ^{3/}	Mean Cem. Lines Male ^{4/}	
1961	12	8	67	1	8	11.1			11/1-6/30 9/1-12/31
1962	13	9	75	4	31	14.0			Same
1963	7	4	57	2	29	13.9			Same
1964	20	17	89	2	10	13.9			Same
1965	10	6	60	1	10	13.8			Same
1966	14	10	71	4	29	13.3			Same
1967	29	14	48	7	24	13.8	18.5		1/1-6/20 9/1-12/31
1968	17	10	59	4	24	12.9	20.9		1/1-6/10 9/1-12/31
1969	24	16	67	1	4	14.0	22.2	3.8(4)	1/1-6/10 9/1-11/30
1970	13	6	46	4	31	13.6	20.2	4.7(6)	4/1-6/10 9/1-11/30
1971	10	7	70	4	40	13.4	21.0	5.4(7)	4/1-6/10 9/1-12/31
1972	17	8	50	4	24	12.9	19.7	5.7(3)	1/1-6/10 9/1-12/31
1973	11	5	45	2	18	15.6	24.7	12.3(4)	1/1-6/10 9/1-12/31
1974	18	14	78	4	22	14.3	21.6	6.4(12)	Same

^{1/} All male % based on known-sex bears.

^{3/} Length plus width given in inches.

^{2/} Length plus width given in feet.

^{4/} Tooth sample size in parenthesis.

Prepared by: Lee Miller, March 25, 1975

BROWN/GRIZZLY BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 4 - Admiralty, Baranof, Chichagof and adjacent islands

Seasons and Bag Limits

Sept. 1 - June 10

One bear every four regulatory years; provided that the taking of cubs or females accompanied by cubs is prohibited.

Harvest and Hunting Pressure

The sport harvest of brown bears in Unit 4 for 1974 was 84 animals. That is somewhat less than the high for the unit of 99 animals taken in 1973, but is still above the average for the past 14 years. Nevertheless, the composition of the harvest is well within the average for the period 1965-1972 (Appendix I).

Hunter effort remained high, primarily as a result of more people learning of the high bear populations in the area and increased interest by guides from other areas where the hunting seasons have been curtailed. Nevertheless, Unit 4 still offers an outstanding opportunity to hunt brown bears. If the increased effort continues and more persons are afield, the overall quality of the hunting experience may be lowered through hunter crowding.

A breakdown of the 1974 harvest on an island basis shows that Admiralty Island contributed 43 bears (52%), Baranof Island 4 bears (5%) and Chichagof Island 36 bears (48%) to the Unit 4 harvest.

Percentages of harvest from each island are about the same as in recent years. The trend has been a decrease of the percentage from Baranof Island, an increase from Chichagof Island and a stable representation from Admiralty Island. Four major bays on southern Admiralty Island continued to contribute about half of the Admiralty total and about one-fourth of the Unit 4 total.

To better compare localized harvests, Unit 4 was subdivided into four subunits designated as follows: 4-A Baranof Island, 4-B Chichagof Island, 4-C Admiralty Island north of Kootznahoo Inlet - Mole Harbor and 4-D southern Admiralty south of Kootznahoo Inlet - Mole Harbor. Harvest data by subunits are presented in Appendix II.

The number of defense of life/property kills for 1974 is unknown, but it is suspected to be fairly significant. Only two were properly reported. Unconfirmed reports from several logging camps suggest that as many as three to five bears may be destroyed annually at most camps. There were 12 active logging and mining camps in operation during 1974.

Composition and Productivity

Beach observations on Admiralty Island at Hood Bay under research Job 4.7R showed cubs of all age classes comprised 31 percent of the 32 individual bears observed; none of these were cubs-of-the-year. This is a higher cub:adult ratio than has been observed in past years, but the significance of the change, or indeed, the adequacy of the sample size or the technique involved is open to question. However, the fact that harvest data have shown so little change in spite of what would appear to be fairly intensive exploitation indicates that bear numbers are substantial and that hunting has little overall impact.

Management Summary and Conclusions

Although hunting pressure is increasing in Unit 4, harvest and related parameters have remained relatively constant since at least 1965. Thus hunting appears to have had little impact on this brown bear population. A management problem facing us is the continuation of the high quality of hunting experience now attainable during a spring brown bear hunt. Increased hunter pressure will eventually result in crowding with an overall lowered quality of hunting experience. Significant acreages open to the hunting public on the highly productive southern portion of Admiralty Island may be lost through transfer of those lands to the Juneau and/or Sitka Urban Corporations under the Alaska Native Land Claim Settlement Act.

Increased coordination with the U.S. Forest Service and logging camp administrators is needed to reduce the number of defense of life/property bear kills.

It appears that the "standards" of harvest which have evolved over the past 12 to 15 years provide a good guide to the management of this resource. These harvest standards are: about 72 percent males, of which the average male skull measures about 22 inches, the average male age is about 7.5 years, the average male hide measures 13.5 total feet, about 50 percent of the harvest is taken by nonresidents and 65 to 70 percent of the harvest occurs in the spring. This area will sustain an annual harvest of 60 to 80 animals without significant effect upon these standards.

Recommendations

No changes in seasons or bag limits are recommended at this time.

PREPARED BY:

Loyal J. Johnson
Game Biologist III

SUBMITTED BY:

Robert E. Pegau
Regional Research/Management Coordinator

APPENDIX I

Brown/Grizzly Bear Sport Harvest, Calendar Years 1961 through 1974. Game Management Unit 4.

Calendar Year	Total Kill	No. Males	% Males	No. N.R.	% N.R.	Mean Hide Size Male ^{1/}	Mean Skull Size Male ^{2/}	Mean Cem. Lines ^{3/} Male	Female	Calendar Year Seasons
1961	39	31	80	23	59	15.1				1/1-6/30
1962	44	29	67	29	66	14.6				9/1-12/31
1963	27	20	74	15	56	14.4				Same
1964	55	37	69	24	44	14.2				Same
1965	64	43	68	33	52	13.7				Same
1966	75	47	67	50	67	13.1				Same
1967	62	43	72	30	48	13.2	22.7			1/1-6/20
1968	50	38	78	18	35	12.7	22.3	8.0(10)		9/1-12/31
1969	66	51	77	34	52	13.7	22.7	7.1(32)		1/1-6/10
1970	66	48	73	36	55	13.7	22.0	7.8(40)		9/1-11/30
1971	77	49	74	40	52	14.1	22.7	8.3(44)	8.1(15)	4/1-6/10
1972	77	58	75	41	53	14.3	22.5	8.8(55)	6.4(17)	9/1-12/31
1973	99	67	68	40	40	13.6	21.6	7.7(63)	8.5(32)	1/1-6/10
1974	84	61	73	43	51	13.9	22.2	7.6(57)	7.7(21)	9/1-12/31
										Same
										Same

^{1/} Length plus width given in feet.

^{2/} Length plus width given in inches.

^{3/} Tooth sample size given in parenthesis.

APPENDIX II

Brown/Grizzly Bear BMU 4 Brown Bear Harvests by Sub-unit. Legal Sport Kills Only.

Location	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974*
Baranof 4-A	5	14	12	14	6	11	12	13	17	9	4
% of Unit 4	10	22	16	22	12	17	17	17	23	9	5
Chichagof 4-B	13	16	16	17	16	24	21	25	32	45	36
% of Unit 4	25	25	22	27	31	36	29	32	43	46	43
Admiralty Total	33	33	45	32	29	31	39	39	28	45	43
% of Unit 4	65	52	62	51	57	47	54	51	36	46	52
Northern Admiralty 4-C	14	14	10	10	13	6	13	9	9	12	12
% of Unit 4	27	22	14	16	26	10	18	12	12	12	15
Southern Admiralty 4-D	19	19	35	22	16	25	26	30	19	33	31
% of Unit 4	37	30	48	35	31	38	36	39	25	33	37
Pybus Bay	3	4	16	7	5	3	10	8	8	8	5
Gambier Bay	9	7	3	1	4	3	7	4	3	4	3
Chiak Bay	3	5	3	3	2	4	2	1	2	7	7
Hood Bay	1	1	2	6	0	4	0	0	0	3	4
Total These bays	16	17	24	17	11	14	19	13	13	22	19
% Admiralty	49	52	53	53	38	45	49	33	46	49	44
% Unit 4	31	27	33	27	22	21	26	17	17	22	23
Total for Unit	51	63	73	63	51	66	72	77	77	99	84
% Statewide Total	9	8	8	8	8	13	11	10	9	11	11

* Percentages based on 83 of 84 known kills.

BROWN/GRIZZLY BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 5 - Yakutat

Seasons and Bag Limits

Sept. 1 - Nov. 30

May 10 - May 25

One bear every four regulatory years; provided that the taking of cubs or females accompanied by cubs is prohibited.

Harvest and Hunting Pressure

The sport kill of brown bears in Unit 5 during 1974 was 13 animals, 8 males and 5 females (Appendix I). Two males and 2 females were taken in the spring season and 6 males and 3 females were taken in the fall. In 1973 the sport kill was 21 bears (13 males and 8 females). Residents took all of the bears in the 1974 harvest and 82 percent of those harvested in 1973.

Mean male hide size, skull size and cementum age in 1974 were 13.6 feet (length plus width), 21.8 inches (length plus width) and 5.0 years (sample size 5), respectively. The 1973 mean age of 12 male bears was 8.0 years. The mean age of 10 brown bears (both sexes) harvested in Unit 5 in 1974 was 6.2 years. In 1973 mean age of 18 bears (both sexes) was 8.4 years. Unit 5 contributed 8.8 percent of the total brown bear harvest from Southeastern Alaska (Units 1-5) and 1.7 percent of the statewide harvest in 1974.

Composition and Productivity

No composition data, other than those resulting from harvest information, were available.

Management Summary and Recommendations

The 1974 harvest of 13 brown bears was slightly lower than the 1961-73 annual average of 14 bears. The present annual harvest level is not adversely affecting the brown bear population in Unit 5 as indicated by sex and age data in Appendix I.

PREPARED BY:

David A. Johnson
Game Biologist III

SUBMITTED BY:

Robert E. Pegau
Regional Research/Management Coordinator

APPENDIX I

Brown-Grizzly Bear Sport Harvest, Calendar Years 1961 through 1974. By: Year, Total Kill, Number of Males, % of Males, No. of Nonresidents, % of Nonresidents, Mean Hide Size of Males, Mean Skull Size of Males, Mean Cementum Lines of Males and Calendar Year Seasons.

GAME MANAGEMENT UNIT 5

Calendar Year	Total Kill	No. Males	% Males ^{1/}	No. Nonres.	% Nonres.	Mean Size Male ^{2/}	Mean Skull Size Male ^{3/}	Mean Cem. Lines Male ^{4/}	Calendar Year Seasons
1961	9	6	75	5	63	13.6			1/1-6/30 9/1-12/31
1962	7	4	57	0	0	15.5			Same
1963	4	4	100	0	0	15.5			Same
1964	11	4	36	5	45	14.5			Same
1965	15	12	80	4	27	14.5			Same
1966	22	11	55	16	73	15.2			Same
1967	15	8	53	10	67	14.5	23.7		1/1-6/20 9/1-12/31
1968	18	13	72	7	39	14.0	23.4	7.8(5)	1/1-6/10 9/1-12/31
1969	20	10	50	9	45	13.8	21.8	7.0(6)	1/1-6/10 9/15-11/30
1970	7	4	57	4	57	13.3	24.0	9.0(3)	4/1-5/31 10/10-11/30
1971	21	12	63	7	33	14.0	22.1	5.8(8)	5/10-5/25 10/10-11/30
1972	21	12	57	8	38	14.1	22.2	5.0(6)	5/10-5/25 10/10-11/30
1973	21	13	62	3	14	14.5	22.6	8.0(12)	5/10-5/25 9/1-11/30
1974	13	8	62	0	0	13.6	21.8	5.0(5)	Same

^{1/} All male % based on known-sex bears.

^{2/} Length plus width given in feet.

^{3/} Length plus width given in inches.

^{4/} Tooth sample size in parenthesis.

Prepared by: Lee Miller. March 25. 1975

BROWN/GRIZZLY BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 6 - Prince William Sound and Gulf Coast

Seasons and Bag Limits

May 10 - 25

October 10 - November 30

One bear every four regulatory years; provided that the taking of cubs or females accompanied by cubs is prohibited.

Harvest and Hunting Pressure

The 1974 Unit 6 brown bear harvest was 29 bears: 14 males and 15 females. An additional 5 bears were taken: 3 illegal and 2 defense of life. The 1974 sport harvest is slightly below the 10-year average (Appendix I).

The actual hunting pressure exerted in Unit 6 is unknown, but is not believed to have increased significantly in the past several years.

A review of the sealing documents show that the harvest was well dispersed: Montague Island 6, Hinchinbrook Island 5, Valdez to Cordova 6 and east of Cordova 12.

Management Summary and Conclusions

All available data indicate the 1974 harvest of 29 brown bears was a "normal" harvest. None of the data indicate overharvest or excessive hunting pressure. Minor variations in hide sizes, skull size, age and percent of males taken are most likely a function of small sample sizes rather than a true reflection of population trend (Appendix I).

Recommendations

Retain the current seasons and bag limits.

PREPARED BY:

Julius Reynolds
Game Biologist III

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

APPENDIX 1

Brown-Grizzly Bear Sport Harvest, calendar years 1961 through 1974. By: Year, total kill, number of males, % of males, No. of nonresidents, % of nonresidents, mean hide size of males, mean skull size of males, mean cementum lines of males and calendar year seasons.

Calendar Year	Total Kill	No. Males	% Males <u>1/</u>	No. Nonres.	GAME MANAGEMENT UNIT 6		Mean Skull Size Male <u>3/</u>	Mean Cem. Lines Male <u>4/</u>	Calendar Year Seasons
					% Nonres.	Mean Size Male <u>2/</u>			
1961	13	8	62	3	23	13.2			1/1-6/30
1962	24	17	71	9	38	13.3			Same
1963	30	16	53	5	17	14.0			Same
1964	32	22	76	9	28	14.6			Same
1965	34	18	53	8	24	15.4			Same
1966	38	20	53	7	18	14.6			Same
1967	56	35	70	26	46	14.2	22.4		1/1-6/20 9/1-12/31
67 1968	63	39	67	33	52	14.4	23.5	7.1 (26)	1/1-6/10 9/1-12/31
1969	23	12	55	8	35	14.7	23.4	9.3 (10)	1/1-6/10 9/15-11/30
1970	28	13	46	10	36	14.5	23.6	5.9 (8)	4/1-5/31 10/10-11/30
1971	19	14	74	10	53	14.9	24.1	9.2 (12)	5/10-5/25 10/10-11/30
1972	39	21	54	19	48	13.7	22.3	6.1 (20)	Same
1973	30	21	75	18	60	14.1	22.6	5.9 (14)	Same
1974	29	14	48	17	59	13.9	23.2	6.9 (14)	Same

1/ All male % based on known-sex bears.

2/ Length plus width given in feet.

3/ Length plus width given in inches.

4/ Tooth sample size in parenthesis.

BROWN/GRIZZLY BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 7 - Eastern Kenai Peninsula

Seasons and Bag Limits

Sept. 10 - Oct. 10

One bear every four regulatory years;
provided the taking of cubs or females
accompanied by cubs is prohibited.

Harvest and Hunting Pressure

No bears were harvested during the 1974-75 season.

Recommendations

No changes are recommended in the season or bag limit.

PREPARED BY:

Paul A. LeRoux
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SUBMITTED BY:

John S. Vania
Regional Management Coordinator

BROWN/GRIZZLY BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 8 - Kodiak and Adjacent Islands

Seasons and Bag Limits

Unit 8, that portion of Kodiak Island south and west of a line from the mouth of Hidden Basin Creek to the mouth of Kizhuyak Bay and including Uganik Island.	Oct. 25 - Dec. 31 March 1 - May 15	One bear every four regulatory years; provided that the taking of cubs or females accompanied by cubs is prohibited.
Unit 8, remainder of Kodiak Island	Sept. 1 - July 5	
Unit 8, Afognak, Shuyak and Raspberry Islands.	Oct. 1 - Dec. 31 March 1 - May 20	

Harvest and Hunting Pressure

Total annual harvest increased for the fourth consecutive season. The 1974 harvest of 164 animals represents a 5.8 percent increase over the 155 bears taken in 1973 (Appendix I). The 1974 Unit 8 take was 21.4 percent of the statewide harvest. Ninety-four males (57 percent) and 70 females (43 percent) were harvested. The spring kill included 65 males (58 percent) and 47 females (42 percent) for a total of 112 animals. Fifty-two animals were taken in the fall including 29 males (56 percent) and 23 females (44 percent). Non-sport kills accounted for five animals, one male and four females.

One hundred and thirty of the 164 bears harvested (79 percent) were killed on Kodiak National Wildlife Refuge in 1974 (Appendix II). Three hundred and ninety-six land use permits for bear hunting were issued and 47.8 percent of the 272 hunters who went afield were successful. Permit issuance was the highest since the system was begun in 1968. The refuge limited the number of permits available to 140 during the fall season. Hunting pressure measured by permit use indicated only a 3.8 percent increase over the 1973 level. Nonresidents took 98 (75 percent) and residents took 32 (25 percent) of the 130 bears harvested on the refuge. Non residents took 68 percent of the total Unit 8 harvest in 1974.

Trophy size, as indicated by average skull and hide sizes of males, remained relatively stable (Appendix I). The average skull size dropped only slightly from 24.5 inches in 1973 to 24.3 inches in 1974. The average age of males harvested dropped from 7.7 cementum lines to 7.4 in 1974. Fifty-two percent of 92 males were five years old or younger (Appendix III). Forty-eight percent (32) of 67 females were five years old or younger.

The total fall kill decreased from 62 bears in 1973 to 52 in 1974. The facts that the fall season opened five days later than in 1973 and that weather was poor during the opening week, probably contributed to a reduced harvest. The 1974 fall harvest contained 56 percent males compared to only 39 percent males in 1973. The percentage of males in the spring total harvest was 57 percent compared to a 59 percent average for the previous five years. The Unit 8 spring harvest was 41.8 percent of the statewide kill for spring 1974; this is due, in part to the fact that the spring season in Unit 9 was closed. At least six bears were wounded and not recovered during the 1974 season, according to reports by hunters and guides. Wounding loss is difficult to establish as few hunters admit having lost a bear. The reported wounding loss in 1974 probably represents a minimum annual estimate for Unit 8.

Composition and Productivity

Results of aerial stream and alpine composition counts conducted by Kodiak National Wildlife Refuge personnel are presented in Appendix IV. These surveys are flown each year over the same alpine transects and designated salmon spawning streams. The alpine counts indicated that cubs comprised 28 percent of the population. Stream counts indicated only 11 percent of the population was cubs. Yearlings comprised 18 percent and 11 percent of the alpine and stream counts, respectively. Both types of counts were consistent in indicating that 57 percent of the sample was young animals in the sub-adult, yearling and cub age classes.

Management Summary and Conclusion

The 1974 harvest of 164 bears was the highest since 1967 (Appendix I). The harvest of 130 animals on the Kodiak National Wildlife Refuge is considered to be a maximum allowable level, but with anticipated increases in hunting pressure, the harvest is expected to increase.

Trophy size as indicated by skull size and average age of males remains stable. Males comprised 57 percent (94) of the overall 1974 harvest. Males comprised only 58 percent of the spring harvest compared to 67 percent in 1973.

The spring harvest of 112 bears represents a 20.4 percent increase over the 1973 spring harvest. The fall harvest declined from 62 bears in 1973 to 52 bears in 1974. The fall harvest appears to be temporarily stabilized by the combined effects of a later opening date and the limitation of permit issuance by U.S. Fish and Wildlife Service. Hunting pressure increased only 3.8 percent in 1974 according to federal permit use statistics. The decision by U.S. Fish and Wildlife Service to limit the number of spring season land use permits for bear hunting to 174 will probably stabilize the spring harvest at a level below that recorded in 1974.

Nonresident hunters took 68 percent (112) of the total harvest for Unit 8 in 1974, compared to an average of 52 percent during the previous five years. The increase in nonresident take is due largely to the fact that federal bear hunting permits are issued on a first come basis and guides are better able to secure the best hunting areas for their clients. Resident hunters are less able to afford to spend several days waiting in line; they therefore receive permits for less desirable areas and hunting times.

Hunting pressure outside the refuge appears to be increasing. At least four additional big game guides who had little prior record of hunting in Unit 8 were conducting spring hunts on the northern portions of Kodiak and Afognak Islands in 1974. The plans of the U.S. Fish and Wildlife Service to limit the availability of bear hunting permits to improve hunting quality on Kodiak National Wildlife Refuge will undoubtedly force additional pressure into adjacent areas.

Recommendations

No changes in seasons or bag limits are recommended.

It is recommended that bear hunting to allowed only by permit during the 1975-1976 season in Unit 8. Limitations on the number of land use permits issued for bear hunting on the Kodiak National Wildlife Refuge will accelerate hunting pressure in adjacent areas. Limited information indicates that high hunter density developed in some off-refuge areas in 1974. A permit system with a mandatory hunter report will improve our ability to manage the harvest by providing necessary information on distribution of hunting effort and hunter success. The information derived from the hunter reports will provide a means for determining the level of permit issuance needed to achieve a desired harvest by area should future limitations on harvest be needed.

PREPARED BY:

Roger B. Smith
Game Biologist III

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

APPENDIX I

Brown-Grizzly Bear Sport Harvest, Calendar Years 1961 through 1974. By: Year, Total Kill, Number of Males, % of Males, No. of Nonresidents, % of Nonresidents, Mean Hide Size of Males, Mean Skull Size of Males, Mean Cementum Lines of Males and Calendar Year Seasons.

GAME MANAGEMENT UNIT 8									
Calendar Year	Total Kill	No. Males	% Males ^{1/}	No. Nonres.	% Nonres.	Mean Size Male ^{2/}	Mean Skull Size Male ^{2/}	Mean Cem. Lines Male ^{4/}	Calendar Year Seasons
1961	117	77	66	73	62	16.9			1/1-5/31
1962	131	91	78	84	64	16.5			Same
1963	109	76	70	55	50	16.2			Same
1964	118	72	63	62	53	15.2			Same
1965	185	111	60	88	48	15.7			Same
1966	200	107	55	97	49	15.7			Same
1967	186	107	58	92	49	15.3	23.6	5.0(14) Fall	1/1-5/20 10/1-12/31
1968	105	61	59	62	59	15.6	23.9	6.2(52)	Same
1969	97	61	63	51	53	15.9	24.2	6.2(53)	1/1-5/20 11/1-12/31
1970	91	60	67	44	48	15.3	23.6	6.0(57)	3/1-5/10 10/20-12/31
1971	113	63	60	51	45	15.1	24.0	6.8(59)	3/1-5/10 10/20-12/31
1972	132	79	61	72	55	15.2	24.0	6.7(76)	3/1-5/15 10/20-12/31
1973	155	86	55	90	58	15.6	24.5	7.7(82)	3/1-5/15 10/20-12/31
1974	164	94	57	112	68	15.5	24.3	7.4(92)	3/1-5/15 10/25-12/31

^{1/} All Male % based on known-sex bears.

^{2/} Length plus width given in feet.

^{3/} Length plus width given in inches.

^{4/} Tooth sample size in parenthesis.

PREPARED BY: Lee Miller, Game Tech. V

APPENDIX II

Bear Hunting Land Use Permit System Statistics

Kodiak National Wildlife Refuge, 1968-1974
(From U.S. Fish and Wildlife Service Records)

Year	No. permits issued	No. permits used	Percent permit use	No. bears killed	Percent hunter success
1968	249	203	81.5%	86	42.4%
1969	254	168	66.1%	71	42.3%
1970	228	170	74.6%	63	37.1%
1971	255	142	55.7%	70	49.3%
1972	295	202	68.5%	92	45.5%
1973	356	262	73.6%	127	48.5%
1974	396	272	68.7%	130	47.8%

PREPARED BY:

Roger B. Smith
Game Biologist III

APPENDIX III

Age Class Distribution in Known Sex Brown Bear Kill Unit 8, 1974*

No. Cementum Lines	2	3	4	5	6	7	8	9	10	11+
	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Males (92)	1(1.1)	7(7.6)	10(10.9)	15(16.3)	15(16.3)	12(13.0)	5(5.4)	3(3.3)	7(7.6)	17(18.5)
Females (67)	----	5(7.5)	5(7.5)	10(14.9)	12(17.9)	9(13.4)	4(6.0)	1(1.5)	3(4.5)	18(26.9)

* Age in years is number cementum lines less one year.

PREPARED BY: Lee Miller, Game Tech. V

APPENDIX IV

Brown Bear Alpine Composition Counts* Kodiak National Wildlife Refuge

Category	<u>1970</u>		<u>1971</u>		<u>1972</u>		<u>1973</u>		<u>1974</u>	
	No.	%	No.	%	No.	%	No.	%	No.	%
Adults	59	(43)	16	(33)	112	(52)	80	(55)	44	(43)
Subadults	32	(23)	14	(29)	59	(28)	23	(16)	11	(11)
Cub	19	(14)	8	(17)	29	(14)	38	(26)	29	(28)
Yearling	<u>28</u>	(20)	<u>10</u>	(21)	<u>13</u>	(6)	<u>5</u>	(3)	<u>18</u>	(18)
Totals	138		48		213		146		102	

Brown Bear Stream Composition Counts* Kodiak National Wildlife Refuge

Category	<u>1970</u>		<u>1971</u>		<u>1972</u>		<u>1973</u>		<u>1974</u>	
	No.	%	No.	%	No.	%	No.	%	No.	%
Adults	43	(36)	63	(32)	93	(39)	100	(55)	73	(43)
Subadults	37	(31)	71	(37)	88	(36)	47	(26)	59	(35)
Cub	14	(12)	44	(23)	39	(16)	17	(9)	18	(11)
Yearling	<u>25</u>	(21)	<u>16</u>	(8)	<u>22</u>	(9)	<u>18</u>	(10)	<u>19</u>	(11)
Totals	119		194		242		182		169	

* From U. S. Fish and Wildlife records.

PREPARED BY:

Roger B. Smith
Game Biologist III

BROWN/GRIZZLY BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 9 - Alaska Peninsula

Seasons and Bag Limits

May 10 - May 25

Oct. 7 - Oct. 21

One bear every four regulatory years; provided that the taking of cubs or females accompanied by cubs is prohibited.

Harvest and Hunting Pressure

The reported harvest of brown bears from Unit 9 in 1974 was 140 bears (Appendix I). This harvest represents only fall season data. The 1974 spring season was cancelled by Field Announcement following the harvest of 143 brown bears during the two-week, 1973 fall season. As in past years, nonresidents harvested the majority of the bears (81 percent). Males comprised 53 percent of the total harvest continuing the pattern of near equal sexes in the fall harvest of the past three years (Appendix II). Male hide size, skull size and cementum age showed a continuing decline (Appendix III) that resulted primarily from the lack of a spring season and the inclusion of data from the older males that have characterized its harvest (Appendix II).

Composition and Productivity

Data on mean litter size of brown bears in Unit 9 are available from Department and Utah State University research programs. In the Chignik-Black Lake area, 39 sows were observed with 89 cubs (mean litter size of 2.3 cubs). From the relatively unhunted brown bear population that utilized McNeil River State Game Sanctuary, the Utah State research crew reported six sows observed with a total of 16 cubs (mean litter size of 2.7 cubs). This is the first time McNeil has had a higher mean litter size than Black Lake, but the small sample size does not warrant conclusions.

Management Summary and Conclusions

Hunters on the Alaska Peninsula now have the capability to harvest a large number of brown bears in a relatively brief period of time. The 16-day fall seasons of 1973 and 1974 both produced a mean average of 8.8 bears per day in spite of less than ideal weather. Reductions in season length beyond two weeks are not considered desirable as the compression of season concentrates hunters and increases the competition for bears.

Brown bears on the Alaska Peninsula are being managed as trophy animals. Present harvest levels in the heavily hunted portion of the unit have approached the level of maximum sustained yield (66 percent of the harvest since 1963 has come from the central portion of the unit between Naknek River-Katmai National Monument and Port Moller Bay-American Bay). The result in this area has been a very young, highly productive population that was heavily biased towards females, but with few, older age class males present.

The management objective adopted by the Board of Fish and Game for Unit 9 has been to provide maximum hunting opportunity consistent with the production of a few older age class males. To achieve this objective a harvest goal of 150 bears annually south of the Naknek River-Katmai National Monument was established in the late 1960's. In 1972 this harvest goal was exceeded by 78 bears and in 1973 by 47 bears. Only the cancellation of the spring 1974 season kept the harvest south of the Naknek River-Katmai National Monument below the annual harvest goal (119 bears in 1974). It is evident that under existing hunting pressure, the harvest levels obtained from the fall season will force cancellation of the spring season in all or portions of the unit in order to remain within the 150 bear limit.

The harvest characteristics of the spring and fall seasons are distinct and can be utilized to maintain a highly productive population structure with older age class bears present. A high reproductive potential would occur with a population of one mature male for every three mature females. Since mature females breed every third year, this would result in a ratio of one mature male for each receptive female. The near equal sex ratio of the fall season harvests would eventually result in a population of one male per female. In this case there would be males in excess of those necessary for good breeding success and fewer mature females present than in a similar sized population but biased towards females. A prolonged harvest of 75 to 80 percent males as has characterized the spring seasons could result in a population without adequate mature males to breed receptive females. A sex ratio in the harvest of 65 to 70 percent males would maintain the desired population composition. If the goal of 150 bears annually south of the Naknek River-Katmai National Monument is maintained and the harvest kept between 65 to 70 percent males, there would result a very productive population with older age class males present.

Recommendations

The harvest goal of 150 bears annually south of the Naknek River-Katmai National Monument should be maintained without sacrifice of either the spring or fall seasons. At this time, permits to regulate harvest levels are not considered a viable option because they would restrict hunting opportunity to a select few permittees and would be difficult to enforce. Enforcement difficulties and reporting problems make it impractical to first establish subunits and then field close specific areas upon reaching the desired harvest quota. Shortening the season dates further would concentrate the hunting pressure, thereby decreasing the aesthetics of a hunt and possibly allowing inclement weather to eliminate any reasonable hunting opportunity.

It is recommended that brown bears on the Alaska Peninsula be hunted on an alternate year basis with the existing season dates. In any given regulatory year with an open season, up to 300 brown bears could be harvested south of the Naknek River-Katmai National Monument. The following regulatory year no bears would be harvested and the combined harvest for both years would still remain within the harvest goal. This approach should be maintained until harvest levels or increased enforcement capabilities make it feasible to return to a system of yearly open seasons.

PREPARED BY:

James B. Faro
Game Biologist III

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

APPENDIX I

Brown-Grizzly Bear Sport Harvest, Calendar Years 1961 through 1974. By: Year, Total Kill, Number of Males, % of Males, No. of Nonresidents, % of Nonresidents, Mean Hide Size of Males, Mean Skull Size of Males, Mean Cementum Lines of Males and Calendar Year Seasons.

GAME MANAGEMENT UNIT 9									
Calendar Year	Total Kill	No. Males	% Males ^{1/}	No. Nonres.	% Nonres.	Mean Size Male ^{2/}	Mean Skull Size Male ^{3/}	Mean Cem. Lines Male ^{4/}	Calendar Year Seasons
1961	120	85	73	71	59	16.4			1/1-5/31, All of 9 10/1-12/31, S. of Egegik Puale Bay, Rem. of Unit 9/10- 12/31
1962	154	108	70	96	62	16.4			Same
1963	164	100	65	114	70	16.1			1/1-5/31, 9/1-12/31
1964	155	103	70	108	70	16.1			Same
1965	210	136	66	139	66	15.7			1/1-5/31, All 9. N of Meshik 9/1-12/31 S of Meshik 9/15-12/31
1966	231	157	71	173	75	15.7			N of Meshik 1/1-5/31, 9/1-12/31, S of Meshik 1/1-5/31, 9/15-12/31
1967	214	147	70	163	76	15.8	23.5	6.6(30)	1/1-5/20, 9/15-12/31
1968	160	113	73	134	84	15.5	24.3	7.6(48)	1/1-5/10, 9/15-12/31
1969	93	66	75	67	72	15.8	24.5	8.0(57)	1/1-5/10 All of 9 - 9/15-10/30. N of Park, 10/1-11/30 S of Park.
1970	158	103	67	119	75	15.1	24.0	7.8(90)	S of Park 5/1-5/15, N of Park 5/1-5/25, All of 9 10/1-10/31
1971	195	122	66	138	71	15.1	23.7	7.1(109)	5/10-5/25, 10/1-10/31
1972	279	154	56	203	73	14.7	23.4	7.1(146)	5/10-5/25, 10/1-10/31

APPENDIX I cont.

Brown-Grizzly Bear Sport Harvest, Calendar Years 1961 through 1974. By: Year, Total Kill, Number of Males, % of Males, No. of Nonresidents, % of Nonresidents, Mean Hide Size of Males, Mean Skull Size of Males, Mean Cementum Lines of Males and Calendar Year Seasons.

GAME MANAGEMENT UNIT 9 (con't.)									
Calendar Year	Total Kill	No. Males	% Males ^{1/}	No. Nonres.	% Nonres.	Mean Size Male ^{2/}	Mean Skull Size Male ^{3/}	Mean Cem. Lines Male ^{4/}	Calendar Year Seasons
1973	241	138	59	182	76	14.9	23.6	6.3(131)	5/10-5/25, 10/7-10/21
1974	140	74	53	114	81	14.3	22.5	5.9(74)	10/7-10/21

^{1/} All male % based on known-sex bears.

^{2/} Length plus width given in feet.

^{3/} Length plus width given in inches.

^{4/} Tooth sample size in parenthesis.

PREPARED BY: Lee Miller, Game Technician V

APPENDIX II

Comparison of Spring and Fall Harvest Data, GMU 9, 1963-1974

Year	Male Cementum Lines ^{1/}		Percent Males	
	Spring Season	Fall Season	Spring Season	Fall Season
1963	Not Available		83	51
1964	Not Available		84	59
1965	Not Available		80	54
1966	Not Available		89	58
1967	Not Available		81	58
1968	Not Available		82	66
1969	Not Available		87	57
1970	9.3 (48)	6.0 (42)	76	59
1971	9.4 (38)	5.8 (69)	83	60
1972	8.9 (41)	6.4 (105)	71	52
1973	6.9 (68)	5.7 (64)	69	50
1974	No season	5.9 (74)	No season	53

^{1/} Tooth sample size in parentheses.

Prepared by: James B. Faro, Game Biologist III

APPENDIX III

Average Male Brown/Grizzly Skull Size Recorded in Inches, and by Year, Season, and Residency of Hunter for Unit 9.

YEAR	S P R I N G				F A L L				T O T A L		Sample Size %
	RES		NONRES.		RES.		NONRES.		No.	Size	
	No.	Size	No.	Size	No.	Size	No.	Size			
1967	-	-	-	-	6	23.9	44	23.5	50	23.5	93
1968	5	23.5	49	25.5	9	23.3	40	23.0	103	24.3	93
1969	10	23.9	36	25.5	5	22.5	15	23.2	66	24.5	99
1970	10	24.4	43	25.5	14	21.0	32	23.2	99	24.0	97
1971	4	26.2	37	24.8	22	22.3	50	23.2	113	23.7	96
1972	12	24.5	29	25.0	28	22.7	78	23.0	145	23.4	94
1973	17	23.4	51	24.7	15	22.3	50	22.8	133	23.6	97
1974	No season				9	22.1	56	22.5	65	22.5	88

Prepared by: Lee Miller, Game Technician V

BROWN/GRIZZLY BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 10 - Aleutian Islands

Season and Bag Limits

May 10-May 25

Oct. 1 - Oct. 31

One bear every four regulatory years; provided that the taking of cubs or females accompanied by cubs is prohibited.

Harvest and Hunting Pressure

The reported harvest for Unimak Island was two bears during the spring season and three bears in the fall, for a total of five bears (Appendix I). The harvest was entirely by Alaskan residents and three of the bears taken were males. Due to the small sample size, no conclusions can be made concerning skull size, hide size, or age of harvest.

Composition and Productivity

No information was available.

Management Summary and Conclusions

Brown bears are restricted to Unimak Island in Unit 10. The island is part of the Aleutian Island Refuge system and hunter access for brown bears is controlled by a permit system regulated by the U. S. Fish and Wildlife Service. The number of permits issued is conservative and the level of harvest remains low. Liberalization of the season would not increase the harvest as the permit system limits hunter numbers.

Recommendations

No changes in season or bag limits are recommended at this time.

PREPARED BY:

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Game Biologist III

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

APPENDIX 1
GAME MANAGEMENT UNIT 10

Brown/Grizzly Bear Sport Harvest, Calendar Years 1961 through 1974: Participation by Nonresidents in the Bear Harvest with Mean Hide, Skull Size and Cementum Age of Male Bears Presented for Sealing.

Calendar Year	Total kill	No. Males	%1/ Males	No. Nonres.	% Nonres.	Mean Hide Size Male 2/	Mean Skull Size Male 3/	Mean Cem Age Male	Calendar Year Season
1961	1	1	100	0	0	18.1	---	---	1/1-5/31 10/1-12/31
1962	3	2	67	0	0	16.6	---	---	Same
1963	0	0	0	0	0	0	---	---	1/1-5/31 9/1-12/31
1964	15	9	60	5	33	16.4	---	---	Same
1965	10	7	70	1	10	15.9	---	---	1/1-5/31 9/15-12/31
1966	6	4	67	1	17	16.1	---	---	Same
1967	8	3	38	0	0	13.4	23.5	---	1/1-5/20 9/15-12/31
1968	4	2	50	4	100	14.9	23.2	5.0(2)	Same
1969	4	3	75	0	0	19.4	27.3	15.0(1)	1/1-5/10 10/1-11/30
1970	5	4	80	0	0	12.5	19.9	3.0(4)	5/1-5/15 10/1-10/31
1971	4	1	25	0	0	15.4	23.4	4.0(1)	5/10-5/25 10/1-10/31
1972	5	3	60	0	0	14.1	19.9	4.0(2)	Same
1973	3	1	33	0	0	11.3	22.3	5.0(1)	Same
1974	5	3	60	0	0	16.3	25.9	6.3(3)	Same

1/ All male % based on known sex bears.

2/ Length plus width given in feet.

3/ Length plus width given in inches.

4/ Tooth sample size in parenthesis.

PREPARED BY: James B. Faro, Game Biologist

BROWN/GRIZZLY BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 11 - Wrangell Mountains, Chitina River

Seasons and Bag Limits

Sept. 10 - Oct. 10
May 10 - May 25

One bear every four regulatory years; provided that the taking of cubs or females accompanied by cubs is prohibited.

Harvest and Hunting Pressure

Tabulated data on brown/grizzly bear harvests from 1961 through 1974 are presented in Appendix I. The 1974 Unit 11 kill (14 bears - 3 spring, 11 fall) was fairly well dispersed. Overall trend data of male percentage in the harvest, hide sizes, skull sizes and cementum ages indicate that excessive harvesting is not presently a problem.

Composition and Productivity

No data were available.

Management Summary and Conclusions

Although harvest sample sizes are small, all presently used indices show brown/grizzly bears in Unit 11 are harvested at a relatively low level. It is believed that the harvest would have to be substantially increased before being reflected in bear abundance or sex and age composition of the harvest.

Recommendations

No change in seasons or bag limits is recommended at this time.

PREPARED BY:

Carl McIlroy
Game Biologist III

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

Brown-Grizzly Bear Sport Harvest, Calendar Years 1961 through 1974. By: Year, Total Kill, Number of Males, % of Males, No. of Nonresidents, % of Nonresidents, Mean Hide Size of Males, Mean Skull Size of Males, Mean Cementum Lines of Males and Calendar Year Seasons.

GAME MANAGEMENT UNIT 11									
Calendar Year	Total Kill	No. Males	% Males ^{1/}	No. Nonres.	% Nonres.	Mean Size Male ^{2/}	Mean Skull Size Male ^{3/}	Mean Cem. Lines Male ^{4/}	Calendar Year Seasons
1961	6	3	60	3	50	11.8			5/15-6/15 9/1-12/31
1962	15	6	40	11	73	12.4			Same
1963	9	6	67	7	78	12.6			Same
1964	23	14	67	16	70	13.2			Same
1965	19	9	50	13	68	13.3			Same
1966	11	9	90	8	73	12.4			Same
1967	19	9	47	14	74	12.4	23.2		Same
1968	15	8	53	7	47	12.0	20.9	6.8(4)	Same
1969	9	6	67	2	22	15.3	22.8	7.2(5)	5/15-6/15 9/1-9/30
1970	16	10	63	7	44	13.5	22.0	8.9(9)	5/15-6/10 9/15-10/5
1971	17	9	64	15	88	13.9	23.5	8.8(9)	9/15-10/5
1972	13	7	54	9	69	12.8	22.2	8.6(7)	9/10-10/10
1973	19	12	63	13	68	12.2	20.4	6.6(12)	5/15-5/31 9/10-10/10
1974	14	9	64	12	86	12.9	21.5	6.6(9)	Same

^{1/} All male % based on known-sex bears.

^{2/} Length plus width given in feet.

^{3/} Length plus width given in inches.

^{4/} Tooth sample size in parenthesis.

PREPARED BY: Lee Miller, Game Tech V

BROWN/GRIZZLY BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 12 - Upper Tanana-White River

Seasons and Bag Limits

May 15 - May 31
Sept. 10 - Oct. 10

One bear every four regulatory years; provided that the taking of cubs or females accompanied by cubs is prohibited.

Harvest and Hunting Pressure

Information derived from sealing documents disclosed that 22 grizzly bears were harvested by sport hunters during the 1974 season. This figure represents a 69 percent increase over the past 10-year average (15.2) but is a decrease over the 26 bears reported taken during the 1973 season. The harvest consisted of half males and half females. One additional male bear was reported taken in defense of life and property.

Mean male skull size was 20.3 inches, a slight but probably insignificant increase over the 1973 average of 19.9 inches. Female skulls averaged 19.6 inches, slightly less than last year's 20.1 inches. Hide size for male bears averaged 12.6 feet while females averaged 11.6 feet. Mean age for male bears was 5.5 years with a range of 2-11; the past 7-year average is 6.8 years.

Reported kill locations for the 1974 harvest were as follows:

<u>Drainage</u>	<u>Spring Harvest</u>	<u>Fall Harvest</u>	<u>Total</u>
Chisana River	1	4	5
Nabesna River	2	3	5
Tanana River	0	1	1
Tetlin River	0	1	1
Tok (Big) River	0	1	1
Tok (Little) River	0	4	4
White River	0	4	4
Total	3	19	22

Thirteen bears were taken during guided hunts, although only 8 animals were taken by nonresident hunters.

No means are available to measure effort aimed specifically at grizzly bears, but as moose and caribou seasons are cut back there will be less overlap between moose/caribou and bear seasons, resulting in a smaller incidental take of grizzlies. This should provide a better insight into grizzly hunting effort since, presumably, any bears taken after moose and caribou seasons close will have been specifically sought.

Composition and Productivity

Attempts were made during May 1974 to systematically survey the river bottoms of the Tok, Robertson and Johnson Rivers using aircraft. Only two bears were seen during approximately six hours of flying on three separate evenings before the surveys were discontinued. It is not felt that these surveys accurately reflect the grizzly population occupying these areas.

Management Summary and Recommendations

Although Unit 12 is large, contains considerable high quality grizzly habitat and is largely inaccessible, the harvest of 26 and 22 animals, respectively, for the past two years may be approaching the upper limits of desirable harvest. Recent reductions in moose season length should result in lower grizzly harvest levels during the 1975 season because fewer incidentally taken bears will be harvested primarily due to less overlap in seasons. In the meanwhile, techniques should be sought to ascertain population levels, trends and recruitment rates.

Because of the small sample, hide size, skull size, and ages of the bears harvested can be used only to measure gross changes. Several years of overharvest would have to occur before these indicators would reliably detect a population decline.

No changes in seasons or bag limits are recommended.

PREPARED BY:

Larry Jennings
Game Biologist III

SUBMITTED BY:

Oliver E. Burris
Regional Management Coordinator

BROWN/GRIZZLY BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 13 - Nelchina, upper Susitna, and western half of upper Copper River Basin.

Seasons and Bag Limits

Sept. 1 - Oct. 10

One bear every four regulatory years; provided that the taking of cubs or females accompanied by cubs is prohibited.

Harvest and Hunting Pressure

Bear harvests have fluctuated since 1961 with peaks occurring in 1966 (63 bears), 1971 (72 bears) and 1974 (71 bears) (Appendix I). During most years the kill was markedly affected by the opening date of the season; earlier openings resulted in greater harvests. This relationship provides a reasonably reliable method of manipulating the harvest. Mean age of male bears, mean skull size of males and percentage of males in the harvest have all fluctuated without apparent upward or downward trend. Harvests have generally been well dispersed as shown by Figure I, depicting kill sites of 222 bears taken since 1969.

Composition and Productivity

No data were available.

Management Summary and Conclusions

Harvest data indicate that hunting pressure is not changing the bear population to an abnormal sex or age composition, and past harvests have been well dispersed. Hunters and guides have reported that grizzly bears in Unit 13 appear to be more abundant than remembered during the 1950's and 1960's. The management tactic in effect is to hold the harvest at the 70 bear level for 3 years and monitor changes occurring in male:female ratios, age indices and kill locations. Further adjustments in the harvest will then be made until bear harvest data begin to respond to hunting pressure.

Recommendations

No changes are recommended in the season or bag limit.

PREPARED BY:

Carl McIlroy
Game Biologist III

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

Appendix I

Brown-Grizzly Bear Sport Harvest, Calendar Years 1961 through 1974. By: Year, Total Kill, Number of Males, % of Males, No. of Nonresidents, % of Nonresidents, Mean Hide Size of Males, Mean Skull Size of Males, Mean Cementum Lines of Males and Calendar Year Seasons.

GAME MANAGEMENT UNIT 13									
Calendar Year	Total Kill	No. Males	% Males ^{1/}	No. Nonres.	% Nonres.	Mean Size Male ^{2/}	Mean Skull Size Male ^{3/}	Mean Cem. Lines Male ^{4/}	Calendar Year Seasons
1961	41	20	50	25	61	13.0			9/1-9/30
1962	34	21	61	18	55	13.8			Same
1963	42	22	54	27	64	12.6			Same
1964	36	15	43	23	64	12.8			Same
1965	44	25	58	21	48	12.9			Same
1966	63	33	56	41	65	13.2			Same
1967	30	16	55	14	47	12.8	21.5	6.5(15) Fall	9/15-10/5
1968	38	18	49	19	50	12.9	22.0	5.9(9)	Same
1969	18	16	89	9	50	13.4	22.5	6.9(12)	9/20-10/20
1970	27	18	69	15	56	12.7	20.6	5.3(16)	9/15-10/5
1971	72	32	48	43	60	12.3	20.6	5.2(24)	9/1-10/5
1972	48	28	58	25	52	13.1	21.3	7.1(27)	9/10-10/10
1973	43	25	60	27	63	13.3	21.7	7.0(23)	9/10-10/10
1974	71	39	56	33	46	12.8	21.1	6.5(39)	9/1-10/10

^{1/} All male % based on known-sex bears.

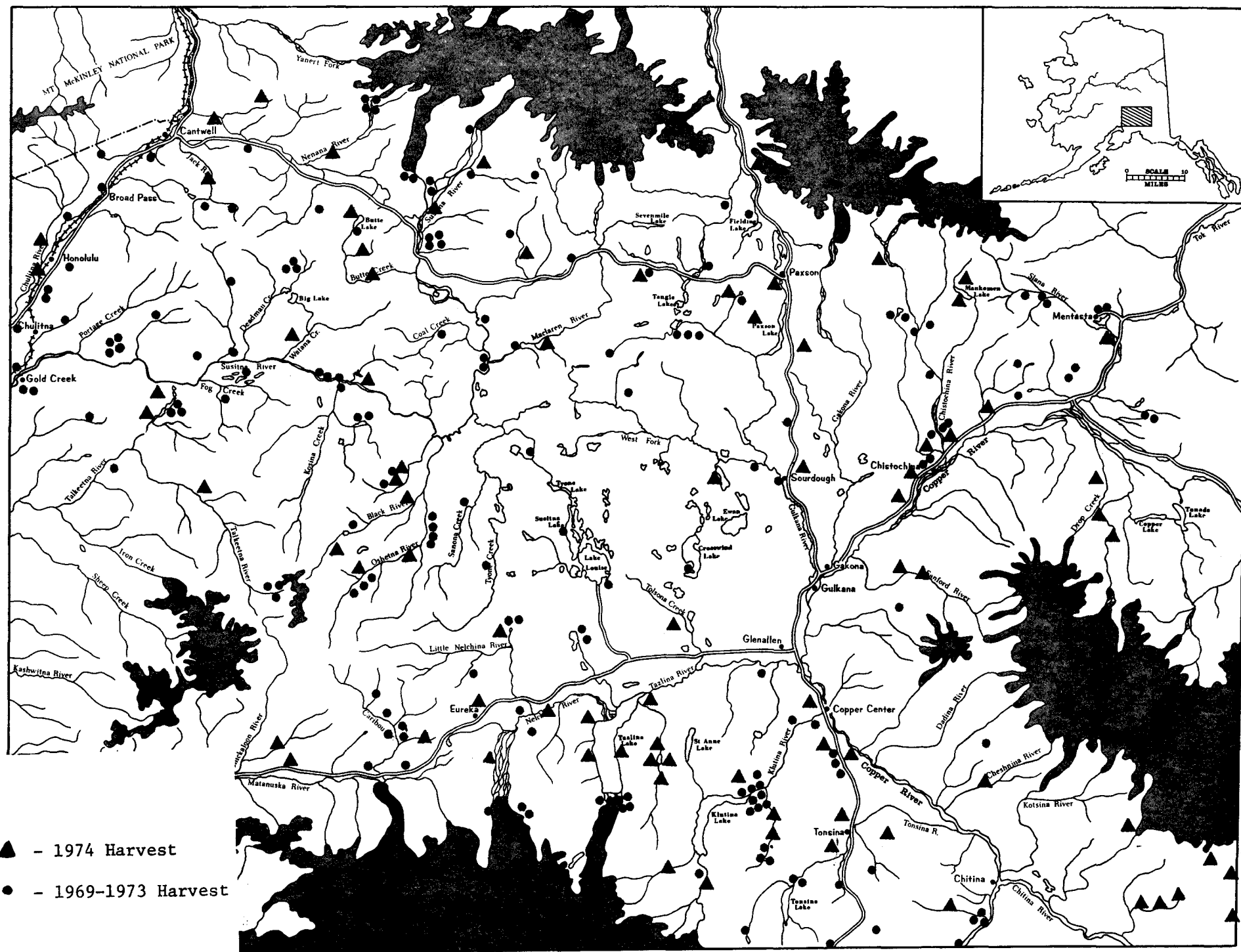
^{2/} Length plus width given in feet.

^{3/} Length plus width given in inches.

^{4/} Tooth sample size in parenthesis.

PREPARED BY: Lee Miller, Game Tech. V

Figure 1. Kill Locations of Brown/Grizzly Bears in Unit 13 since 1969.



BROWN/GRIZZLY BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 14 - Upper Cook Inlet

Seasons and Bag Limits

Unit 14, except that portion of Unit 14C in Chugach State Park	Sept. 10 Oct. 10	One bear every four regula- tory years; provided that the taking of cubs or females accompanied by cubs is pro- hibited.
Unit 14C in Chugach State Park		No Open Season

Harvest and Hunting Pressure

The 1974 brown/grizzly bear harvest in Unit 14 was three bears (Appendix I). This marks the third successive year in which brown bear harvests from Unit 14 have been very low. The average harvest for the years 1963 through 1973 was 8.6 bears per year. No reported non-sport kills were recorded from Unit 14 in 1974. During the seven years for which the opening day of brown bear season was September 1 (1963-1968 and 1971), the average harvest was 12 brown bears per year. During the years when the season opened September 10 or later (1969-1970, 1972-1974) the average harvest was 2.8 bears per year. The lack of an open season in Chugach State Park had an undetermined effect on the harvest.

No bears were taken by nonresident hunters during 1974. This is the third successive year during which nonresident hunters failed to harvest brown bears from this Unit. During the nine years prior to 1972 nonresidents took an average of 3.4 brown/grizzly bears per year from Unit 14. Nonresidents have not reported taking brown bears during any years when the bear season opened September 10 or later.

Composition and Productivity

The three brown bears harvested from Unit 14 in 1974 included 1 male, 1 female and 1 bear of unknown sex. The one male bear was 4 years old with a hide size of 10.7 feet and skull size of 16.8 inches. The female and bear of unknown sex were both three years old.

Numbers of bears taken in any one year are so small that it is difficult to make any statements concerning the status of the population based on one year's data. Combining the age data of male brown bears taken from Unit 14 between 1968 and 1974 provides a sample size of 15 bears. The greatest average age of the male bears taken during any one year during this 7-year period was 5.7 in 1968. The average age of all 15 male bears was 3.8.

Management Summary and Conclusions

The 1974 brown/grizzly bear sport harvest from Unit 14 was at a very low level for the third year in succession. As has been reported in the past, it is believed that most bears taken from Unit 14 are taken incidental to other hunting. Comparing the harvest for any one year with the opening date of the brown bear season reveals that the harvest can be significantly influenced by opening the season on an earlier date to increase the number of days on which moose, sheep and brown bear seasons overlap. The continued closure of Chugach State Park to brown bear hunting also undoubtedly contributes to the reduced harvest.

It is apparent from age, hide size and skull size data that most of the brown bears taken in Unit 14 are young bears. It is probable that these young, less wary bears are attempting to establish territories in this area of relatively high human population. There are undoubtedly reservoirs of older bears in the more remote areas of this unit where hunting pressure is minimal. Areas such as most of Subunit 14B, Chugach State Park, or the southwestern portion of 14A in the Little Susitna River drainage would provide such reservoirs. In these areas access and hunting would be difficult.

Recommendations

No changes in seasons or bag limits are recommended at this time.

PREPARED BY:

Jack C. Didrickson and Don Cornelius
Game Biologist III and Game Biologist II

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

Appendix I. Brown/Grizzly Bear Sport Harvest, Calendar Years 1963 through 1974. Participation by Nonresidents in the Bear Harvest with Mean Hide, Skull Size and Cementum Age of Male Bears Presented for Sealing in Alaska's Game Management Unit 14.

Calendar Year	Total Kill	No. Males	% Males <u>1/</u>	No. Nonres.	% Nonres.	Mean Hide Size Male <u>2/</u>	Mean Skull Size Male <u>3/</u>	Mean Cem Age Male <u>4/</u>	Calendar Year Seasons
1963	13	8	67	5	38	12.9			9/1 - 9/30
1964	12	9	75	1	8	12.9			Same
1965	15	7	47	7	47	12.7			9/1 - 10/15
1966	5	2	40	2	40	13.5			9/1 - 9/30
1967	12	6	55	6	50	12.0	21.2		Same
1968	11	3	30	6	55	14.5	22.0	5.7(3)	Same
1969	2	2	100	0	0	11.7	18.7	2.0(2)	9/20 - 10/20
1970	4	0	0	0	0	11.6	----	0	9/15 - 10/5
1971	16	6	38	4	25	11.9	20.1	3.2(6)	9/1 - 10/5
1972	4	2	50	0	0	12.6	22.2	5.0(2)	9/10 - 10/10
1973	1	1	100	0	0	10.8	----	3.0(1)	9/10 - 10/10
1974	3	1	50	0	0	10.7	16.8	4.0(1)	9/10 - 10/10

1. All male % bases on known-sex bears.
2. Length plus width given in feet.
3. Length plus width given in inches.
4. Tooth sample size in parenthesis.

PREPARED BY: Jack C. Didrickson, Game Biologist III
Don Cornelius, Game Biologist II

BROWN/GRIZZLY BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 15 - Western Kenai Peninsula

Seasons and Bag Limits

September 10 - October 10

One bear every four regulatory years; provided that the taking of cubs or females accompanied by cubs is prohibited.

Harvest and Hunting Pressure

Brown/grizzly bear sealing reports indicate that 8 bears were taken by sport hunters in Unit 15 during the 1974 season (Appendix I). The sport harvest was composed of 5 males and 3 females. In addition, 2 female bears were taken in defense of life and/or property. The 1974 sport harvest was 33 percent above the 1973 harvest and 100 percent above the average for the previous 5 years. Twenty-five percent (2/8) of the harvest was taken by nonresident hunters.

Composition and Productivity

Age, hide size and skull size data are too limited to be statistically analyzed with any degree of confidence.

Management Summary and Conclusions

The 1974 sport harvest of 8 bears is the second highest harvest on record, being exceeded only by the 1968 harvest of 11 bears. This is the second successive increase in the harvest following a 4-year declining trend.

Since most bears are taken incidental to moose hunting the magnitude of the harvest does not necessarily reflect an increase in hunting effort for bears. The harvest level probably is a reflection of the availability of bears to hunters which in turn is a function of weather, berry crops and salmon runs.

Although there is presently no method of surveying brown bears in Unit 15 the population appears to be expanding and the harvest does not appear to be excessive.

Recommendations

No changes in seasons or bag limits are recommended.

Additional information should be obtained at the time of sealing to determine the number of bears taken incidental to hunting for other species and the amount and kind of selectivity practiced by hunters.

PREPARED BY:

Paul A. LeRoux
Game Biologist III

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

Brown-Grizzly Bear Sport Harvest, Calendar Years 1961 through 1974. By: Year, Total Kill, Number of Males, % of Males, No. of Nonresidents, % of Nonresidents, Mean Hide Size of Males, Mean Skull Size of Males, Mean Cementum Lines of Males and Calendar Year Seasons.

GAME MANAGEMENT UNIT 15

Calendar Year	Total Kill	No. Males	% Males ^{1/}	No. Nonres.	% Nonres.	Mean Size Male ^{2/}	Mean Skull Size Male ^{3/}	Mean Cem. Lines Male ^{4/}	Calendar Year Seasons
1961	4	2	50	0	0	18.6			9/1-9/30
1962	5	2	40	3	60	11.5			Same
1963	4	2	50	0	0	12.8			Same
1964	2	2	100	2	100	12.9			Same
1965	3	1	33	1	33	13.2			Same
1966	4	1	25	1	25	17.3			Same
1967	4	2	50	1	25	15.5	24.5		Same
1968	11	7	64	1	9	14.5	25.1	2.0(2)	Same
1969	6	4	67	0	0	14.3	24.8	7.0(2)	Same
1970	4	2	50	1	25	15.3	26.3	8.0(1)	9/20-10/15
1971	3	2	67	0	0	12.4	19.6	3.0(1)	9/20-10/15
1972	2	1	50	0	0	0	23.7	4.0(1)	9/10-10/10
1973	6	3	50	3	50	13.8	21.0	5.0(3)	9/10-10/10
1974	8	5	63	2	25	13.0	20.4	9.3(4)	Same

^{1/} All male % based on known-sex bears.

^{2/} Length plus width given in feet.

^{3/} Length plus width given in inches.

^{4/} Tooth sample size in parenthesis.

BROWN/GRIZZLY BEAR

SURVEY-INVENTORY PROGRESS REPORT -1974

Game Management Unit 16 - West Side of Cook Inlet

Seasons and Bag Limits

May 10 - May 25

Sept. 10 - Oct. 10

One bear every four regulatory years; provided that the taking of cubs or females accompanied by cubs is prohibited.

Harvest and Hunting Pressure

The 1974 brown/grizzly bear sport harvest from Unit 16 was 24 animals (Appendix I). This is below the previous 10-year average (1964-1973) of 31.7 bears taken per year. Nine (37.5 percent) of the bears were harvested during the 1974 spring season. The remaining 15 (62.5 percent) were taken during the fall season. Nonresident hunters took 67 percent of the brown bears harvested in Unit 16 during 1974. This is slightly above the previous 10-year average for nonresident hunters of 54.9 percent participation in the harvest.

No non-sport kills were reported from Unit 16 during 1974.

Composition and Productivity

Sixty-four percent of the brown/grizzly bears taken from Unit 16 during 1974 were males. This is similar to the previous 10-year average of 61 percent males in the harvest.

The mean hide size for male bears in 1974 of 13.3 feet was similar to the previous 10-year average. The mean skull size of 22.3 inches demonstrated the same trend. The mean age of male bears from cementum lines in 1974 was 7.0 from a sample of 14 bears. This compares well with the previous 7-year average of 7.3 from a total sample of 127 male brown bears.

Management Summary and Conclusions

The 1974 Unit 16 brown/grizzly bear harvest of 24 bears was below the previous 10-year average. This may be partially if not wholly the result of the September 10 rather than the usual September 1 opening date of the fall season. Reduced harvests were realized in 1972 and 1974, the only two years during which the opening dates were September 10.

Mean hide and skull sizes and the average age of male brown bears taken in Unit 16 closely approximate the previous 10-year average. This suggests that recent harvests have not been excessive.

Recommendations

No changes in seasons or bag limits appear necessary at this time.

PREPARED BY:

Jack C. Didrickson and Don Cornelius
Game Biologist III and Game Biologist II

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

Appendix I. Brown/Grizzly Bear Sport Harvest, Calendar Years 1964 through 1974 by: Year, Total Kill, Number of Males, Percentage of Males, Number of Non-residents, Percentage of Non-residents, Mean Hide Size of Males, Mean Skull Size of Males, Mean Cementum Lines of Males and Calendar Year Seasons in Alaska's Game Management Unit 16.

Calendar Year	Total Kill	No. Males	% <u>1/</u> Males	No. Nonres.	% Nonres.	Mean Hide ^{2/} Size Male	Mean Skull ^{3/} Size Male	Mean Cem. ^{4/} Lines Male	Calendar Year Seasons
1964	19	13	68	9	47	12.7			9/1-12/31
1965	37	22	73	19	51	13.5			Same
1966	28	11	41	14	52	13.3			Same
1967	25	11	48	16	64	14.4	23.1	8.1(10) (fall)	Same
1968	23	16	70	16	70	14.5	23.3	8.1(14)	Same
1969	37	23	62	17	46	14.2	22.7	7.0(21)	5/15-6/15 9/1-10/15
1970	41	32	80	28	68	13.6	22.6	7.5(28)	5/15-6/10 9/1-10/15
1971	41	20	51	20	49	12.7	21.0	5.3(19)	5/15-6/10 9/1-10/15
1972	23	13	59	11	48	13.7	23.6	9.3(12)	5/15-6/10 9/10-10/10
1973	43	24	60	24	56	13.0	22.0	6.9(23)	5/10-5/25 9/1-10/10
1974	24	14	64	16	67	13.3	22.3	7.0(14)	5/10-5/25 9/10-10/10

1/ All male % based on known-sex bears.

2/ Length plus width given in feet.

3/ Length plus width given in inches.

4/ Tooth sample size in parenthesis.

Submitted by: Jack C. Didrickson, Game Biologist III and Don Cornelius, Game Biologist II.

BROWN/GRIZZLY BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 17 - Bristol Bay

Seasons and Bag Limits

May 15-June 10

Oct. 7 - Oct. 21

One bear every four regulatory years; provided that the taking of cubs or females accompanied by cubs is prohibited.

Harvest and Hunting Pressure

The reported harvest of 29 bears from Unit 17 in 1974 is a 12-bear decline from the record 41-bear harvest of 1973 (Appendix I). The spring season produced 18 bears (62 percent of the harvest), only three of which were taken by Alaskan residents. The fall season produced 11 bears, seven of which were taken by residents. The spring harvest was 88.9 percent males and the fall 72.7 percent males with females representing only 17.2 percent of the total unit harvest. No significant changes were recorded in mean hide size or skull size of males in the harvest, but there was a noticeable decrease in mean age (Appendices I and II). The mean age of 7.8 years was still older than three of the previous six years for which such data were available, however, no conclusions should be made because of the small sample size.

Composition and Productivity

Unit 17 produced a spring harvest of 18 bears, surpassed only by the record harvest of 23 in the spring of 1973. In these two spring seasons alone the total harvest (41 bears) has exceeded that recorded for the unit between 1961 and 1972 (23 bears). The high harvest for spring 1974 resulted because the season for adjoining Unit 9 had been closed by emergency regulation. This funneled Unit 9 guides into Unit 17 to fulfill hunts for clients. In some instances, bears killed illegally in Unit 9 were presented for sealing as Unit 17 bears.

The fall season for Unit 17 coincides with that of Unit 9 so there was less reason for guides based in that unit to hunt or claim bears from 17. For the first time in the unit's history, the reported fall kill was less than the spring harvest. With the seasons now established by the Board of Fish and Game that make both the spring and fall seasons for 1975 the same as Unit 9, the harvest data for Unit 17 should be more accurate now that it will no longer be used as a "dump" unit for bears illegally taken in Unit 9.

Recommendations

No changes in the hunting seasons or bag limits are recommended.

PREPARED BY:

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Game Biologist III

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

APPENDIX I
GAME MANAGEMENT UNIT 17

Brown/Grizzly Bear Sport Harvest, Calendar Years 1961 through 1974: Participation by Nonresidents in the Bear Harvest with Mean Hide, Skull Size and Cementum Age of Male Bears Presented for Sealing.

Calendar Year	Total Kill	No. Males	%/ Males	No. Nonres.	% Nonres.	Mean Hide Size Male 2/	Mean Skull Size Male 3/	Mean Cem Age Male 4/	Calendar Year Season
1961	2	1	50	0	0	13.7	---	---	5/15-6/15 9/1-12/31
1962	2	2	100	0	0	15.5	---	---	Same
1963	3	1	33	0	0	16.3	---	---	Same
1964	4	2	50	3	75	11.5	---	---	Same
1965	6	2	33	5	83	13.3	---	---	Same
1966	9	4	50	4	44	14.1	---	---	Same
1967	11	3	27	10	91	14.8	22.5	---	Same
1968	10	7	70	6	60	13.6	23.4	7.3(3)	Same
1969	5	2	40	3	60	15.3	23.2	8.5(2)	5/15-6/15 9/1-10/15
1970	23	12	55	20	87	14.7	23.0	6.4(11)	5/15-6/10 9/1-10/15
1971	33	21	66	26	79	14.1	23.2	6.4(17)	5/15-6/10 9/1-10/15
1972	35	22	63	27	77	13.9	22.1	8.2(21)	Same
1973	41	30	75	33	80	15.0	24.0	10.1(26)	5/15-6/10 10/7-10/21
1974	29	24	83	22	76	15.2	23.8	7.8(21)	Same

1/ All male % based on known-sex bears.

2/ Length plus width given in feet.

3/ Length plus width given in inches.

4/ Tooth sample size in parenthesis.

Prepared by: Lee Miller, Game Technician V

APPENDIX II

Average Male Brown/Grizzly Skull Size Recorded in Inches, and by Year, Season, and Residency of Hunter of Unit 17.

Year	S P R I N G				F A L L				T O T A L		Sample Size%
	RES.		NONRES.		RES.		NONRES.		No.	Size	
	No.	Size	No.	Size	No.	Size	No.	Size			
1967	-	-	-	-	-	-	2	22.5	2	22.5	100
1968	2	23.5	-	-	1	20.8	2	24.6	5	23.4	71
1969	1	23.5	-	-	-	-	1	22.8	2	23.2	100
1970	0	0	4	25.4	1	19.6	7	22.1	12	23.0	100
1971	0	0	5	25.6	3	21.4	10	22.6	18	23.2	86
1972	1	24.1	2	24.6	5	20.3	13	22.3	21	22.1	95
1973	3	23.8	14	24.3	1	23.5	11	24.2	29	24.2	97
1974	3	24.3	13	24.3	4	21.1	3	24.2	23	23.8	96

Prepared by: Lee Miller, Game Technician V

BROWN/GRIZZLY BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 18 - Yukon-Kuskokwim Delta

Seasons and Bag Limits

Sept. 1 - Nov. 30
May 15-May 31

One bear every four regulatory years; provided that the taking of cubs or females accompanied by cubs is prohibited.

Harvest and Hunting Pressure

No reported harvest in 1974.

Composition and Productivity

No surveys were made in Unit 18 during 1974.

Management Summary and Recommendations

Bears are present in huntable numbers in several areas within the unit. There is little interest in hunting by local residents or by hunters from outside the unit.

PREPARED BY:

Peter E. K. Shepherd
Game Biologist III

SUBMITTED BY:

Oliver E. Burris
Regional Management Coordinator

BROWN/GRIZZLY BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 19 - McGrath

Seasons and Bag Limits

Sept. 1 - Oct. 10

One bear every four regulatory years; provided that the taking of cubs or females accompanied by cubs is prohibited.

Harvest and Hunting Pressure

The reported sport harvest of grizzly bears in Unit 19 during 1974 was 57 bears, a decrease of only 1 bear over the record take of 58 in 1973. This continued level of exploitation is partially in response to high bear numbers, increased hunting by guided hunters and diversion of hunters to Unit 19 as a result of spring closures in other areas.

In anticipation of a shift in spring hunting pressure, hunters were monitored in the Alaska Range and Nushagak Hills. While some spring hunting developed in the Alaska Range, most of the grizzlies were reported taken in the Nushagak Hills. A very cold spring delayed bear emergence until quite late and few were taken in the Nushagak Hills area until the last week of the season. Fifteen bears were harvested during the spring, most of these on hunts guided by the same outfitters.

Nonresident hunters continue to take the majority of bears. The Unit 19 bear population seems to be capable of supporting at least the present level of harvest when one considers the resulting harvest data from 1974. The mean skull size of 41 bears measured was 22.8 inches, which certainly attests to the trophy quality of these bears as well as being the largest sample of this size range since the sealing program was initiated in Unit 19. Examination of 41 teeth taken from these bears produced a mean number of cementum lines of 8.8, not significantly lower than the 1973 sample. The mean hide size of 41 bears was 13.7 feet, which is also the best average group of hides since inception of the sealing program in Unit 19. All these parameters of population status suggest this population is not being overharvested.

Composition and Productivity

No surveys were conducted in Unit 19 during 1974. Sightings of bears made during the 1974 spring hunter monitoring are recorded in the BGDIF.

Management Summary and Recommendations

The grizzly bear harvest, with the exception of the spring take, seems to have stabilized in Unit 19. Until 1974 the spring harvest has been insignificant; however, it doubled from the 1973 take in spring 1974. This increase was largely a result of closures in other units. No overharvest is indicated by the harvest data. Pressure has shifted away from the heavily hunted Alaska Range area. This may relieve this population from the probable overexploitation in the past.

PREPARED BY:

Peter E. K. Shepherd
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SUBMITTED BY:

Oliver E. Burris
Regional Management Coordinator

BROWN/GRIZZLY BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 20 - Fairbanks, Central Tanana

Seasons and Bag Limits

Subunit 20A	Sept. 10-Oct. 10	One bear every four regulatory years; provided that the taking of cubs or females accompanied by cubs is prohibited.
Subunit 20B, C, D	May 15-May 31	

Harvest and Hunting Pressure

The reported sport harvest of grizzly bears for Unit 20 during calendar year 1974 was 28 bears, a decrease of 3 animals from the 1973 harvest (revised harvest data indicated a kill of 31, not 29 as reported in previous S&I reports). Harvest levels have fluctuated from 25 (1970) to 36 (1972) for a 5-year average (1969-1973) of 30 bears. An additional three bears were reported as non-sport kills in 1974; two taken in defense of life and property and one road kill.

Spring and fall season dates remained the same as those in 1973. Conservative management goals in 1971 and 1972 resulted in fall-only seasons for the entire unit, although spring harvests have rarely exceeded one-half the fall take. During 1974, 24 bears (86% of the harvest) were taken in fall, while only 4 bears were harvested during the 17-day spring season.

The harvest chronology for the past two fall seasons (Table 1) indicates that 83 percent of the bear harvest occurred during the first two weeks of the 1974 season, compared to 56 percent for the same period in 1973. The increase may be due largely to bears taken incidental to moose hunting; nine grizzlies were taken from September 10-20 in Subunit 20A where the early moose season was extended from August 20-September 20.

The high proportion of bears taken by residents in fall (71%) probably reflects resident hunting effort for other species as well during this period. Bears taken by nonresident guided hunters comprised 29 percent of the total, 4 of which were taken in Subunit 20A.

Table 1. Unit 20 fall season harvest chronology by week, 1973 and 1974.

Date of kill	Harvest		Fall Harvest Percent of Unit 20	
	1973	1974	1973	1974
Sept. 10-16	9	12	36	50
Sept. 17-23	5	8	20	33
Sept. 24-30	6	1	24	4
Oct. 1-10	5	3	20	13
Total	25	24	100	100

Male bears comprised 44 percent of the known sex harvest in 1974, a decrease from the 5-year average (1969-1973) of 58 percent.

Data on hide size, skull size and mean age of bears harvested in 1974 are presented in Appendix I. Hide size increased for males (12.4' vs. 13.2') and females (10.8' vs. 11.9') over the 1973 harvest; skull size increased for males (20.4" vs. 21.7") and females (18.4" vs. 19.8"); while older males (6.3 years vs. 7.9 years) and females (5.9 years vs. 8.1 years) comprised the harvest in 1974.

Analysis of kill locations obtained from sealing certificates indicates the central and western portions of the Alaska Range within Unit 20 continue to furnish the majority of bears in the harvest. Nineteen bears, or 68 percent of the spring-fall harvest, were taken between the Toklat River on the west and the Delta River on the east. It is not known whether this is a reflection of higher bear density or more intensive fall hunting pressure in these areas.

Summarized below are spring and fall 1974 harvest data for 28 known-location kills.

Table 2. Unit 20 spring and fall 1974 grizzly bear harvest by drainage.

Drainage	No. Taken	Percent of Unit Harvest
Toklat River	4	14
Yanert River, Totatlanika River, Wood River, Healy Creek, Carlo Creek	12	43
Delta River, Delta Creek	3	11
Robertson River, Berry Creek	2	7
Nome Creek, Birch Creek	2	7
Blair Lakes	1	4
Chena River	1	4
Fortymile River	1	4
Goodpaster River	1	4
Salcha River	1	4

Composition and Productivity

Formal surveys are not conducted in this unit. However, observations by Department personnel in conjunction with caribou composition surveys on traditional calving grounds at the headwaters of Delta Creek revealed a minimum of six adults and four cubs between Hayes and McGinnis Glaciers from May 30 to June 14, 1974.

Age structure of the 1974 harvest for 27 known-age bears indicates that 63 percent of the animals were 8 years old or older. Sixty-seven percent of the females and 58 percent of the males consisted of bears in this category. Limited data on productivity of grizzly bears in the Brooks Range indicate that most females do not produce young until they

reach 8.5 or more years of age. If it is assumed that the minimum age at which females bear young is similar in the Alaska Range, and the age structure of the harvest is representative of that in the population, it appears that older, productive females are present in sufficient proportions to insure continued recruitment to the population. Average age of females in the 1972 and 1973 harvest, 4.7 and 5.9 years, respectively, may reflect a productive, increasing bear population in the unit since the late 1960's. Old age females (10.7 years) and the high proportion of females (48%) in the 1971 harvest indicate a recruitment of huntable bears to the population as the 3-year-old cohort becomes legal.

Management Summary and Recommendations

The Unit 20 grizzly harvest has stabilized during the past 6 years, with an average annual harvest of 30 bears. Parameters used to evaluate the level of exploitation on the population indicate this harvest is not excessive. Although harvests from central and western portions of the unit remain high, hide size, skull size and age of bears harvested indicate the population can sustain this level of removal. A 24 percent increase in the female composition of the harvest in 1974 may reduce the reproductive potential of the population for one season; if the trend toward a 50-50 sex ratio in the harvest continues, recruitment will be reduced. Age data indicate sufficient numbers of mature females capable of maintaining the current population level.

A large number of bear observations continue to occur in Subunit 20A, an area which receives heavy fall hunting pressure for other big game species during the bear season. Nevertheless, the harvest has not exceeded 10 bears annually from this subunit in 1973 and 1974.

The level of hunting effort for grizzly bears in Unit 20 is unknown. Considering the low nonresident take (8 bears) and the spring harvest by residents (2 bears), it is likely that most bears are taken incidental to other hunting. Spring and fall seasons should coincide with adjacent units to disperse hunting pressure.

Implementation of proposed grizzly bear management plans for Unit 20 will result in the establishment of certain areas with the goal of providing bear hunting opportunities under aesthetically pleasing conditions along with the opportunity to harvest a big bear. Subalpine areas in the Alaska Range and drainages of Beaver and Birch Creeks should have limited hunter density and restrictive transportation methods. Spring and fall seasons will be established when hide quality is prime. In areas unable to sustain both seasons (in terms of hunter density or recruitment of old bears to the population) a spring season is recommended.

Less aesthetically pleasing areas in marginal grizzly bear habitat should provide hunters maximum recreational opportunity and the opportunity to harvest bears under potentially crowded conditions with minimal restrictions on transportation. Provisions should be made for concurrent seasons with other big game species within limitations of pelt primeness.

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Appendix I. Characteristics of Unit 20 grizzly bear harvest, calendar year 1974.

Total					Non-sport kill	Harvest by Nonresidents		Spring Harvest	Fall Harvest
Sport Kill	M	F	Unk.			No.	%		
28	12	15	1		3	8	29	4	24

Mean Hide Size (Feet)		Mean Skull Size (Inches)		Mean Cem. Age (Years)		Subunit Harvest			
Male	Female	Male	Female	Male	Female	20A	20B	20C	20D
13.2	11.9	21.7	19.8	7.9	8.1	10	2	14	2

BROWN/GRIZZLY BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 21 - Middle Yukon

Seasons and Bag Limits

Sept. 1 - Nov. 30

One bear every four regulatory years; provided that the taking of cubs or females accompanied by cubs is prohibited.

Harvest and Hunting Pressure

Two grizzly bears were reported taken in Unit 21 in 1974. Both were taken by residents. However, it is extremely doubtful if these bears were actually taken in this unit. They rightfully belong in the Unit 19 harvest statistics. This type of subterfuge is used by both guides and resident hunters to mask areas of operation and is highly undesirable from a management standpoint.

Composition and Productivity

No surveys of Unit 21 were made in 1974.

Management Summary and Recommendations

Unit 21 does not contain a large amount of grizzly habitat, higher elevations or alpine zones. The unit does contain grizzly populations capable of supporting annual harvests.

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BROWN/GRIZZLY BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 22 - Seward Peninsula

Seasons and Bag Limits

May 25-June 10
Sept. 1-Oct. 31

One bear every four regulatory years; provided that the taking of cubs or females accompanied by cubs is prohibited.

Harvest and Hunting Pressure

The reported sport harvest of grizzly bears in Unit 22 was 10 bears in 1974. This was the largest harvest on record for Unit 22 and was five times greater than the previous 13-year average harvest. The increased reported harvest is primarily a reflection of a more intense effort to get bears sealed. There was very little interest in sport hunting of grizzly bears on the Seward Peninsula as only 2 of the 10 bears sealed were taken by hunters who were specifically hunting grizzly bears.

Composition and Productivity

No composition surveys were conducted, however, bears appear to be relatively widespread in Game Management Unit 22.

Management Summary and Recommendations

There continues to be minimal interest in sport hunting of grizzly bears on the Seward Peninsula. The bear population appears to be increasing and sport hunting should be encouraged.

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BROWN/GRIZZLY BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 23 - Kotzebue Sound

Seasons and Bag Limits

Spring season dates to be
described by Commissioner's
announcement.
Sept. 10-Oct. 10

One bear every four
regulatory years; provided
that the taking of cubs or
females accompanied by cubs
is prohibited.

Harvest and Hunting Pressure

The spring season was not opened in 1974. Twelve bears, 10 males and 2 females, were reported taken during the fall season. This was the lowest harvest since 1962 and is a reflection of the lack of a spring season, fewer guides operating in Unit 23, the concurrent open season in the entire Brooks Range (so that bears taken in Units 24 or 26 were not reported to have been taken in the upper Noatak of Unit 23) and the transfer of the Protection Officer from Kotzebue to Nome. Only one bear was reported to have been taken by a resident. The average age, skull size and hide size continued to show a slight decline over previous years. The upper Noatak and Wulik River areas accounted for over three-fourths of the reported harvest in Unit 23.

Composition, Productivity and Abundance

No composition surveys were conducted during 1974. Pilot reports, guide reports and observations made during other surveys indicated the grizzly bear population is increasing throughout Unit 23.

Management Summary and Recommendations

With concurrent seasons throughout the Brooks Range, most sport hunting is concentrated in the other units. Local residents, especially along the Kobuk River system, take approximately 10-15 bears each year for home consumption and efforts to get these bears sealed have been largely unsuccessful.

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SUMMITTED BY:

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BROWN/GRIZZLY BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Units 24-26 - Brooks Range and North Slope

Seasons and Bag Limits

Sept. 10-Oct. 10

One bear every four regulatory years; provided that the taking of cubs or females accompanied by cubs is prohibited.

Harvest and Hunting Pressure

During 1974, sport hunters reportedly killed 34 grizzly bears in the area comprised by Units 24-26. This was a sizable reduction from the 61 bears which were reported killed in 1973 and is close to the mean yearly kill for the preceding two, 5-year periods of 37.2 and 35.4 bears. Additionally, four bears were killed in defense of life and property; estimated illegal and unreported kills totaled 20-30 bears. The mean age structure of the kill, as determined from premolar cementum annuli, was 9.0 years, an insignificant change from the mean of 8.8 years for the previous six years.

Hunting pressure has steadily increased in the area since 1961; season length has been shortened considerably but the number of bears killed has remained static or increased. Despite closure of the spring season in 1974 and the fact that the fall season occurred during a time of frequent snowstorms and inclement weather, the number of bears killed, and presented for sealing (34), did not decrease appreciably from the mean hunter take for the previous 10 years when generally longer seasons prevailed. Lessened hunting pressure may explain the decrease in the percentage of males taken in 1974 which dropped from 70 percent for the two previous 5-year periods to 62 percent in 1974. The percentage of the kill taken by nonresidents was 76 percent, compared to the 1969-1973 mean of 60 percent and the 1964-1968 mean of 51 percent.

Composition, Productivity and Abundance

² Composition and productivity data are only available from a 5000-mi² area in the eastern portion of GMU 26 and the northern portion of GMU 25. Studies conducted in this area in 1973 and 1974 indicated that the density of grizzlies was low, about 1 bear/50 square miles in prime habitat and 1 bear/100 square miles if all available habitat is considered.

The reproductive potential of bears in this study area is lower than has been reported in other parts of North America. Although some grizzly sows were observed with cubs at age 8.5 years, the mean age at which females produced their first young was 10.3 years. Females may remain productive until age 22.5. The average litter size was 1.78 based on a sample of 14 females with cubs, 7 with yearlings, 1 with two-

year-olds and 1 with three-year-olds. The average interval between litters was 4.2 years, calculated from a model based on the reproductive status of adult females in the population.

The age structure of the bears in the area (Table 1) appears to indicate a declining population, since there are more bears in the 12.5 to 14.5 and 15.5 to 17.5 year age classes than are present in the previous age classes from 3.5 to 11.5 years. Additionally, there are not enough mature breeding females in the population at this time to produce the number of young which would be necessary to maintain the population at its present numbers, indicating that the population can be expected to decline to lower levels unless the present rates of survival and productivity change.

Table 1. Age structure of the grizzly bear population in a study area in the eastern Brooks Range, 1974.

Age years	<u>0.5-2.5</u>	<u>3.5-5.5</u>	<u>6.5-8.5</u>	<u>9.5-11.5</u>	<u>12.5-14.5</u>	<u>15.5-17.5</u>	<u>18.5-20.5</u>	<u>21.5-24.5</u>
# age group	27	9	9	11	20	14	6	3

Management Summary and Recommendations

Hunting pressure in GMU 24-26 is increasing and more hunters will very likely be attracted to these remote areas in the future. Based on the available data, the present level of sport hunting harvest of grizzlies in the Brooks Range units is decreasing the bear population size and affecting its ability to recover. While it is possible that the population data presented are only representative of a relatively small area, the low reproductive potential of females is probably areawide and gives support to timeliness of a policy of low harvests in these units.

It is recommended that harvest in these units be held to no more than a total of 30 bears per calendar year. This level of harvest would allow recovery of the populations to former numbers and eventually allow increased harvests. This level could be reached by shortening present seasons, biennial alternation of open seasons, or by instituting a season by permit only. Of these three options, the permit system offers the greatest exercise of control over the hunter kill and at the same time allows seasons to be lengthened so persons receiving permits can hunt during more pleasant weather conditions than seasons now allow. Shortening or biennial opening of the season may not adequately reduce hunting pressure but rather concentrate it into a shorter span of time with no effective decrease in the total kill. For these reasons a permit system may offer the best solution to the problems posed by overhunting in this area.

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POLAR BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Units 22 and 23 - Seward Peninsula - Kotzebue Sound

Seasons and Bag Limits

The passage of the Federal Marine Mammal Protection Act, on October 21, 1972 prohibited the killing of all marine mammals (including polar bears), except that Alaskan natives could utilize such animals for subsistence (including the arts and crafts industry) providing it was not done in a wasteful manner. During the 1974-1975 season Alaskan natives continued to take polar bears with no restrictions on seasons or bag limits.

Harvest and Hunting Pressure

Since 1972, there has been a significant increase in the polar bear harvest by natives using surface transportation. Weather and ice conditions are certainly factors in the availability of bears near the coast, and undoubtedly the cessation of aerial hunting has been the single most important factor accounting for the substantial increase in the bear kill.

During the 1974-1975 season the known kill by natives in Units 22 and 23 was 35 polar bears; 14 males, 12 females and 9 of undetermined sex.

People in only 3 villages took bears; those of Pt. Hope were the most successful taking 88 percent of the kill (31 bears), Shishmaref followed with 9 percent (3 bears) and a Kivalina resident retrieved 1 bear for 3 percent of the harvest.

Polar bears were taken more often during late January and the month of February, but one animal was killed as early as December 15, and the last near mid-March.

Hunters showed little or no selectivity with regard to sex or age; sows with one-year-old cubs were sought as eagerly as lone boars. Yet, most hunters seemed reluctant to take a sow with newborn cubs.

During January and February hunters from Pt. Hope saw a large amount of bear sign near the coast, and earnest hunters seemed to have no difficulty killing a bear. In fact during these 2 months, 28 bears were taken by 12 men, and of these 12, 2 hunters each killed 4 polar bears apiece. Undoubtedly the harvest would have been higher, but several families had moved to obtain pipeline related employment, and approximately 10 Pt. Hope residents were employed 7 days a week to complete construction of the local high school.

Distribution and Abundance

Although the absence of aircraft hunting was of foremost importance in increasing the abundance of polar bears near the coast, the high harvest at Pt. Hope was certainly influenced by weather and ice conditions.

During the winter, strong north winds were a common occurrence and this condition had a tendency to move the pack ice south, bringing with it "resident" bears. In fact, "old pack ice" (polar ice) was observed on numerous occasions at Pt. Hope, and was seen as far south as Little Diomede. As early as December polar bear tracks were seen in the vicinity of Bering Strait, and bear sign was also found at St. Lawrence later in the year.

During January there was an intense cold spell through most of northwestern Alaska and, with little wind, most of the open leads so characteristic of the moving pack ice were frozen. But, some leads persisted along the coast in the vicinity of Cape Thompson. Apparently, polar bears were drawn to the coast along these leads in search of seals and other food. Several bears were seen on the beach feeding on walrus carcasses. In fact, well-worn trails were common because there was so much bear activity along the coast.

Toward the end of February, strong northeast winds moved much of the nearshore ice to the south, producing larger expanses of open water. Although some "good ice" remained north of Pt. Hope, most of the bears dispersed to hunt the open leads further out to sea. Thus, hunter success dropped, and only three bears were taken during the remainder of the season.

Management Summary and Recommendations

With the Marine Mammal Protection Act restricting polar bear hunting to natives and with natives only using ground transportation, it is unlikely that the annual kill will exceed the productivity of the species. However, the present federal regulations result in considerable waste of this resource. For instance, natives are allowed to kill cubs and nursing sows. The killing of cubs less than one-year-old is not only undesirable from an esthetic consideration, but is certainly wasteful because of the small quantity of meat and hide.

Federal law does not require that polar bear hides be salvaged. Since it is illegal to sell raw hides to a non-native, skins have been neglected and lost because natives did not have enough incentive to properly care for them.

Natives in all villages are rapidly evolving into a total cash economy. Prior to 1972, a considerable amount of money went into the village economy, as a result of guided polar bear hunts, and now the federal prohibition against non-natives taking bears cuts severely into that source of income.

Efforts should continue to return management to the State so that regulations can be promulgated which will benefit both the resource and the public.

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POLAR BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 26 - Arctic Slope

Seasons and Bag Limits

The passage of the Federal Marine Mammal Protection Act, on October 21, 1972 prohibited the killing of all marine mammals (including polar bears), except that Alaskan natives could utilize such animals for subsistence (including the arts and crafts industry) providing it was not done in a wasteful manner. During the 1974-1975 season Alaskan natives continued to take polar bears with no restrictions on seasons or bag limits.

Harvest and Hunting Pressure

Since the passage of the Marine Mammal Protection Act of 1972 (MMPA), there has been no sport harvest of polar bears. Included in the Act, however, was an exclusion allowing native hunters to take polar bears for the purpose of subsistence or the manufacture of clothing or native handicrafts. During 1974, eight polar bears taken by natives were sealed; additional bears were probably taken and not sealed. There was a great deal of confusion as to the use to which polar bear hides could be put by natives: there were no registered tanneries as provided under the regulations and as a result skins could not be sent away for tanning. This resulted in a lack of interest and even an avoidance of polar bears by hunters who would otherwise have taken them.

Distribution and Abundance

The general feeling of village residents along the coast was that polar bears were rapidly becoming more abundant. Indeed bears have been visiting village dumps and occasionally entering townsites, even when people were visible. This has led to concern among these residents, since bears have approached areas where children were playing. It appears that unless the harvest pattern changes polar bear numbers or distribution may cause nuisance problems in local areas.

Management Summary and Recommendations

Prior to the passage of the MMPA, there was no evidence of overharvest. Because there has been very low harvest and little hunting pressure to influence bear distribution since the Act, polar bears have become common on the coast and in some instances dangerous to the public. Efforts should continue to return management to the State so that regulations can be promulgated which will benefit both the resource and the public.

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BLACK BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Units 1A and 2 - Ketchikan and Prince of Wales Island

Seasons and Bag Limits

Sept. 1 - June 30

Two bears; provided that not more than one may be a blue or glacier bear and that the taking of cubs or females accompanied by cubs is prohibited.

Harvest and Hunting Pressure

A total of 47 black bears from Subunit 1A and 27 from Unit 2 were presented for sealing during 1974 (Appendix I). The spring season in Subunit 1A produced 31 males (91%), 2 females and 1 of unknown sex while the fall season produced only 8 males (62%) and 5 females all from the same area.

Unit 2 receives less hunting pressure and during the spring season 17 males (77%), 3 females and 2 of unknown sex were sealed; only 3 males, 1 female and 1 of unknown sex were sealed during the fall.

The chronology of the harvest is presented in Appendix II. Forty-six percent of the combined Subunit 1A and Unit 2 harvests was reportedly taken from May 11 through May 31. Seventy-six percent of the harvest for the two units was taken during the spring season.

Nonresident harvest amounted to seven percent (5 bears) of the total 74 bears taken during the year in these two units.

Most of the bears were apparently taken by hunters specifically hunting bears. Slightly over half the hunters were asked if they were hunting only for bears and 27 of 33 spring hunters indicated they were, while 3 of 5 fall hunters said they were.

Primary methods of transportation to the hunting areas varied somewhat between Units 1A and 2. In Subunit 1A (Ketchikan) 77 percent of the hunters used boats and 19 percent used aircraft. In Unit 2 (Prince of Wales Island) 37 percent used aircraft, 33 percent used boats and 22 percent used road vehicles.

The Unit 2 kill came primarily from the central one-third of Prince of Wales Island while the Subunit 1A harvest was about evenly split between Revilla Island and the mainland. It is interesting to note that no bears were reported taken from the Cleveland Peninsula. Six cinnamon phase blacks were sealed and all but one was reportedly taken on the mainland. One was reported from Nichols Passage and I strongly suspect it was reported erroneously as no other cinnamon bears I know of have ever been taken on the islands in this area.

Skull measurements indicated a size difference in bears between Units 1A and 2. Average size of 36 males sealed from Subunit 1A was 17.8 inches and five females averaged 15.2 inches. Fifteen males from Unit 2 averaged 19.1 inches and two females averaged 16.2 inches.

Sex of approximately 80 percent of the bears was determined by asking the hunters whether the bear was male or female. Depending on the accuracy of the hunter's word, this could affect both the sex ratio of the harvest and the average skull sizes. I believe the actual sex ratio would be close to that reported, however.

Days hunted by successful hunters indicated less time spent per bear taken during the fall, although this is undoubtedly tied to more incidental kills during this season. More time was also spent per bear taken in Subunit 1A than in Unit 2. Thirty-three successful hunters in Subunit 1A averaged 3.4 days per bear in the spring while 11 hunters averaged 1.9 days/bear in the fall. In the Unit 2 spring season 20 hunters averaged 2.2 days/bear and 4 hunters averaged 1.3 days/bear during the fall portion of the season.

No bears were reported taken on guided hunts in either Unit 1A or 2 during 1974.

Fourteen percent of the successful hunters took two bears; second bears comprised 12 percent of the total harvest.

Two non-sport kills were sealed - one cub taken in a wolf trap in December and one bear taken in defense of life or property. Undoubtedly quite a few more bears taken both in and out of season were not reported due to the difficulty of getting to a sealing location and the requirement of skinning and sending in hides from non-sport kills.

Composition and Productivity

No data were available.

Management Summary and Conclusions

1974 was the first full year when sealing of all black bears taken in Units 1A and 2 was required. The 74 bears sealed and interest generally shown for black bears indicate their importance as game animals in this area even though the harvest is considered light.

Excessive hunting pressure is not likely to be a problem for many years and no changes in seasons or bag limits are recommended.

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APPENDIX I. Black Bear Harvest Statistics for GMU's 1A and 2 with Color Phase, Kill by Non-Residents,
Mean Skull Size and Methods of Transportation Used for Calendar Year 1974.

GMU	Season	Kill	No.* Males	No.* Females	Unk. Sex	%	Kill by Cinnamon Non-Resident	Mean Skull**	Mean Skull**	Transport Used (%)			
								Size-Male	Size-Female	Air	Boat	Road Vehicle	Other
1A	Spring 1974	34	31	2	1								
	Fall 19,4	13	8	5	0								
	Total	47	39	7	1	12.8	2 (4.3%)	17.8(36)	15.2(5)	19	77	2	2
2	Spring 1974	22	17	3	2								
	Fall 1974	5	3	1	1								
	Total	27	20	4	3	0	3 (11.1%)	19.1(15)	16.2(2)	37	33	22	7

* Sex classification based 81% on hunters word.

** () = Sample Size.

Prepared by: Robert E. Wood, Game Biologist III

APPENDIX II

Chronology of Black Bear Sport Hunting Harvest, Units 1A and 2 from January 1, 1974 thru December 31, 1974

<u>Date</u>	Number of Bears Harvested	
	<u>Unit 1A</u>	<u>Unit 2</u>
April 10-20	0	2
April 21-30	0	0
May 1-10	0	2
May 11-20	16	7
May 21-31	7	4
June 1-10	8	3
June 11-20	3	2
June 21-30	0	1
Unknown Spring	0	1
Sept. 1-10	2	2
Sept. 11-20	5	0
Sept. 21-30	4	2
Oct. 1-10	0	1
Oct. 11-20	2	0
	<u>47</u>	<u>27</u>

Prepared by: Robert E. Wood, Game Biologist III

BLACK BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Units 1C, 1D and 5 - Northern mainland portion of Southeastern Alaska

Seasons and Bag Limits

Sept. 1 - June 30

Two bears; provided that not more than one may be a blue or glacier bear and that the taking of cubs or females accompanied by cubs is prohibited.

Harvest and Hunting Pressure

The harvest of black bears during 1974 was 47, 13 and 9 animals, respectively, for Units 1C, 1D and 5 (Appendix I). Harvest data for Subunits 1C and 1D have only been gathered for 1 year and in Unit 5 for 3 years so trends have not been established.

In 1974 the cinnamon color phase of the black bear accounted for 12.8 percent of the harvest in Subunit 1C, 30.8 percent of the harvest in Subunit 1D and none were harvested in Unit 5. The cinnamon color phase has never been reported in Unit 5. One blue color phase bear was harvested in Unit 5 in 1974, one in 1973 and two in 1972.

Composition and Productivity

No data were collected.

Management Summary and Conclusions

Black bear hunting pressure and/or the ability to take a bear is largely influenced by weather conditions (typically severe) in Southeastern Alaska. Also, in this area hunter access is difficult and vegetative cover is dense. Black bears are plentiful and hunting is believed to have little impact on the population or the color phases.

Recommendations

No changes in seasons or bag limits are recommended at this time.

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APPENDIX I

Black bear harvest, calendar years 1972 through 1974: participation by nonresidents, mean and range of skull sizes and color phase of bears presented for sealing.

GMU	Calendar Year	Tot. Kill	No. Males	% Males	No. <u>1/</u> Nonres.	% Nonres.	Mean Skull Size M. <u>2/</u>	Range Skull Sizes M. <u>2/</u>	Mean Skull Size F. <u>2/</u>	Range Skull Sizes F. <u>2/</u>	No. Cinn. or Blue*	% Cinn. or Blue* Color
1(C)	1974	47	38	81	12	26	17.1	14.5-19.2	15.8	14.0-17.6	6	12.8
1(D)	1974	13	10	77	1	8	16.7	13.3-18.4	13.3	11.8-15.4	4	30.8
5	1972	17	12	71	10	59	17.9	14.3-19.3	14.2	9.8-15.8	2*	11.8*
5	1973	19	12	63	13	68	15.9	13.0-18.8	15.3	12.8-16.3	1*	5.3*
5	1974	9	6	67	7	78	16.7	15.0-18.6	15.5	15.5-15.5	1*	11.1*

1/ All male % based on known sex bears

2/ Length plus width given in inches

Prepared by: David A. Johnson, Game Biologist III and Warren Ballard, Game Biologist II.

BLACK BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 6 - Prince William Sound

Season and Bag Limits

January 1 - June 30	One bear; provided that the taking of cubs or females accompanied by cubs is prohibited.
September 1 - December 31	

Harvest and Hunting Pressure

Because 1974 was the first full year that black bears taken in Unit 6 had to be sealed, the following data represent the first comprehensive analysis of the Unit 6 black bear harvest.

Sealing data revealed a 1974 harvest of 108 bears: 66 percent males, 26 percent females and 8 percent unknown (Appendix I).

As expected, most of these bears were taken during the spring season (75 percent) and most were males (70 percent of spring harvest). The fall harvest contributed 21 percent of the take with a higher percent of females being taken. Nearly half of the 1974 harvest occurred in May (48.1 percent); June contributed 25.9 percent and September 17.6 percent (Appendix II). The peak of the spring harvest occurred May 18-24 and was followed by a smaller peak June 6-9. The majority of the fall harvest occurred the first week of the season.

Cementum age data (Appendix III) were obtained on 99 black bears. The average age was 6.7 years with a range of 1.8-16.8 years. Males averaged 6.4 years of age while females averaged 7.2 years. The females taken in the fall were considerably older than those taken in the spring (9.2 vs 6.2).

Approximately 34 percent of the 1974 harvest occurred within the Tatitlek to Cordova portion of Prince William Sound. This same area accounted for 70 percent of the fall harvest. Other areas in Prince William Sound and along the Copper River Highway produced moderate harvests of 5 to 13 percent per area (Appendix IV). The vast area east of the Copper River contributed only about 5 percent of the total harvest.

Composition and Productivity

A Prince William Sound black bear survey of key areas was flown in early June but leaf emergence prohibited obtaining any meaningful data.

Four days in August were spent in Olsen Bay observing black bears. During that period, 13 bears were observed: 2 females with twins and 7 single bears. This observation compares favorably with the number of bears (18) seen by George Frame (MS Thesis) during the entire summer of 1967.

Management Summary and Conclusions

Sealing data obtained during 1974 have provided good baseline information on the harvest of black bears in Unit 6.

The 1974 Unit 6 harvest of 108 black bears is probably a moderate level of harvest. The area between Tatitlek and Cordova, where 34 percent of the harvest occurred, may warrant some concern in the near future.

Analysis of the age data indicates a bear population that is not being closely cropped, even in the Tatitlek to Cordova area. The average age of the harvested bears was 6.7 years, well above the sexual maturity age of 3 or 4. Thus, the reproductive potential of the bear population is not adversely affected.

The spring season accounted for three-fourths of the Unit 6 harvest which was predominately males. Fewer bears were taken in the fall but females constituted a higher percent and were older animals. Thus the data suggest season changes can be used as a management tool to manipulate the sex composition of the harvest.

Sealing data suggest a direct timing correlation: peak of spring black bear harvest (May 18-24) and spring brown bear season (May 10-25). The "combination hunt" probably affects the timing and magnitude of the spring harvest along with such factors as winter snow depths and spring leaf emergence.

The small harvest of black bears east of the Copper River can probably be attributed to the regulation which prohibits taking an animal on the same day airborne, not a lack of bears.

It should be noted that no glacier bears were taken in Unit 6. The few sealing certificates indicating a glacier bear had been taken proved to be incorrect. Also, the taking of brown-colored black bears is fairly rare in Unit 6, probably because the color phase is not common and hunters mistake them for small brown bears.

Recommendations

No changes are recommended in the season or bag limit.

PREPARED BY:

Julius Reynolds
Game Biologist III

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

APPENDIX I

UNIT 6

1974 Black Bear Harvest

Chronology by Month and Sex

	<u>Month</u>	<u>Male</u>	<u>Female</u>	<u>Unknown</u>	<u>Total</u>
Spring	May	36	12	4	52
	June	22	5	1	28
	Unknown	0	1*	0	1
	Total	58 (71.6%)	18 (22.2%)	5 (6.2%)	81 (100%) (75.0%)
Fall	September	10	8	1	19
	October	2	2	0	4
	Unknown	0	0	0	0
	Total	12 (52.2%)	10 (43.5%)	1 (4.3%)	23 (100%) (21.3%)
Plus: (1) One male taken in August				*1	
(2) Three taken - Unknown sex and month				*3	
				(3.7%)	
	Unit 6	71 (65.7%)	28 (25.9%)	9 (8.3%)	108 (100%) (100)%

* Non sports or illegal take.

PREPARED BY: Julius Reynolds
Game Biologist III

APPENDIX II

UNIT 6

1974 Black Bear Harvest

Chronology by Month and Day

<u>Day</u>	<u>May</u>	<u>June</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>UNK</u>
1		2				
2		1		7		
3		2				
4	2					
5		1		1		
6		3		1		
7		4		1		
8	1	3				
9		3			1	
10		1				
11	1	2				
12	1		1*			
13		1				
14	1					
15	2				1	
16	2			3		
17	2			1		
18	7	1				
19	6					
20	6					
21	2					
22	4			1		
23	3					
24	4				1	
25	1	2				
26	2			2		
27	2					
28		1		1	1	
29	1	1				
30	1			1		
31	1					
Unk.						4*
Total	52 (48.1%)	28 (25.9%)	1 (.9%)	19 (17.6%)	4 (3.7%)	4 (3.7%)

* Non sport kill.

PREPARED BY: Julius Reynolds
Game Biologist III

APPENDIX III

UNIT 6

1974 Black Bear

Cementum Age Data

	Males			Females			Unknown		
	Number	Age	Range	Number	Age	Range	Number	Age	Range
Spring	55	6.5	2.4-15.4	16	6.2	2.4-15.4	4	4.4	3.4-5.4
Fall	11	5.8	1.8-16.8	8	9.2	1.8-14.8	1	2.8	2.8
Unknown	0	---	---	0	---	---	4	12.0	9.7-13.7
Total	66	6.4	1.8-16.8	24	7.2	1.8-15.4	9	7.6	2.8-13.7

Unit 6: Total bears aged 99
Average age 6.7
Range 1.8-16.8

PREPARED BY: Julius Reynolds - Game Biologist III
Chuck Irvine - Game Biologist II

APPENDIX IV

UNIT 6

1974 Black Bear

Composition of Harvest by Area

<u>Area</u>	<u>Male</u>	<u>Female</u>	<u>Unk.</u>	<u>Total Harvest</u>
1. East of Copper River-Icy Bay	3	1	1	5 (4.6%)
2. Cordova to Copper River	10	1	1	12 (11.1%)
3. Tatitlek to Cordova	22	14	1	37 (34.3%)
4. Valdez Arm	3	2	0	5 (4.6%)
5. Esther Is. to Valdez Arm	12	2	0	14 (13.0%)
6. Port Wells	8	1	0	9 (8.3%)
7. Passage Canal to Port Nellie Juan	7	3	2	12 (11.1%)
8. Port Nellie Juan to Cape Fairfield	3	4	4	11 (10.2%)
9. Prince William Sound - unknown	3	0	0	3 (2.8%)
UNIT 6	71 (65.7%)	28 (25.9%)	9 (8.3%)	108 (100%)

PREPARED BY: Julius Reynolds
Game Biologist III

BLACK BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 7 - Seward

Seasons and Bag Limits

August 10 - June 30

Three bears; provided that not more than one may be a blue or glacier bear and that the taking of cubs or females accompanied by cubs is prohibited.

Harvest and Hunting Pressure

Forty black bears were sealed from Unit 7 during the 1974 season (Appendix I). Twenty-eight bears (14 males, 8 females and 6 sex unknown) were taken during the spring season and 12 (7 males and 5 females) were taken during the fall season.

Since the sealing requirement for black bears took effect on July 1, 1973 only data for the fall season of 1973 are available. The 1974 fall harvest was down 68.4 percent compared to the fall harvest in 1973.

In 1974 the mean skull size (length plus width) for males was 16.8 inches (n = 19) and for females 15.4 (n = 11) (Appendix II). The mean skull size for males was 16.9 inches (n = 13) and 16.6 inches in spring and fall, respectively. The mean skull size for females was 15.5 inches (n = 7) and 15.9 inches (n = 4) in spring and fall, respectively.

Two and one-half percent (1/40) of the harvest was taken by non-residents and 97.5 percent (39/40) by residents. Successful resident hunters averaged 2.0 days of hunting to take a black bear (Appendix III).

Thirty-seven percent (16/43) of all successful hunters reported utilizing boats; 21 percent (9/43) aircraft; 9 percent (4/43) horses and 33 percent (14/43) other means. Three persons reported utilizing both aircraft and boats in taking a bear.

The harvest was distributed throughout the unit with no area producing an unbalanced portion of the take.

Composition and Productivity

Thirty-four black bears were observed incidental to other surveys in Unit 7 during 1974 (Appendix IV). Although these data were collected throughout the summer and the sample is not large enough to be statistically

accurate, it appears that production and/or survival of cubs was low during 1974 with 12.5 percent of the sample being composed of cubs compared to 37.4 percent in 1973 (Appendix IV).

Management Summary and Conclusions

The drop in the fall harvest from 38 bears in 1973 to 12 bears in 1974 is probably, in part, due to the effect of a regulation prohibiting the taking of big game the same day airborne.

The difference between skull sizes of both male and female bears taken in the fall of 1973 and 1974 is slight and not of statistical significance.

The harvest was evenly distributed throughout the entire unit.

Recommendations

No changes are recommended.

PREPARED BY:

Paul A. LeRoux
Game Biologist III

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

Appendix I - Harvest Data for Black Bears Taken in Game Management Unit 7

<u>Year</u>	<u>Season</u>	<u>Resident</u>			<u>Non-Resident</u>			<u>Total</u>			<u>Total</u>	<u>% Males^{1/}</u>	<u>% Non-Residents</u>
		<u>♂</u>	<u>♀</u>	<u>Unk</u>	<u>♂</u>	<u>♀</u>	<u>Unk</u>	<u>♂</u>	<u>♀</u>	<u>Unk</u>			
1973	Fall	13	14	1	5	6	0	18	20	1	39	47	28
1974	Spring	14	8	6	0	0	0	14	8	6	28	64	0
1974	Fall	6	5	0	1	0	0	7	5	0	12	58	8
1974	Combined	20	13	6	1	0	0	21	13	6	40	62	2,5

^{1/}Male % based on bears of known sex

PREPARED BY: Paul A. LeRoux, Game Biologist III

Appendix II. Mean Skull Sizes (inches) of Black Bear Taken in Game Management Unit 7.

Year	Spring Season		Fall Season		Combined Seasons	
	Mean Skull Size Male	Mean Skull Size Female	Mean Skull Size Male	Mean Skull Size Female	Mean Skull Size Male	Mean Skull Size Female
1973	-	-	16.1 (13)	15.4 (17)	-	-
1974	16.4 (13)	15.1 (7)	16.6 (6)	15.9 (4)	16.8 (19)	15.4 (11)

Sample size in parentheses

Appendix III. Residency, Days Hunted, Number of Guided Hunts, and Method of Transportation for Successful Hunters in Game Management Unit 7, 1974.

Year	Residency of Successful Hunters				Average Days Hunted		Guided Hunts				Transportation Used									
	Res		Non-Res		Res	Non-Res	Res		Non-Res		Off Road									
	No	%	No	%			No	%	No	%	Aircraft	Vehicles	Boat	Horse	Other					
	No	%	No	%			No	%	No	%	No	%	No	%	No	%	No	%	No	%
1973	27	71	11	29	2.3	3.4	0	0	8	73	16	42	1	3	3	8	3	8	15	39
1974	39	97.5	1	2.5	2.0	1	1	100	1	2.6	9	21	0	0	16	37	4	9	14	33

PREPARED BY: Paul A. LeRoux, Game Biologist III

Appendix IV. Black Bear, Age Composition Data Obtained Incidental to Other Surveys in Game Management Unit 7, 1974.

<u>Date</u>	<u>Single^{1/} Adults</u>	<u>Groups^{2/} of Adults</u>	<u>Sows with 1 Cub</u>	<u>Sows with 2 Cubs</u>	<u>Sows with 3 Cubs</u>	<u>Total Bears</u>	<u>Area Observed</u>
7/24/74	1	-	-	-	-	1	Goat Lake
7/24/74	3	-	-	-	-	3	Lost Lake
7/23 & 26/74	8	-	-	-	-	8	Resurrection Creek & Big Indian
6/28/74	1	1(4)	2	-	-	7	Big Indian Creek
6/28/74	1	1(2)	-	-	-	3	Big Indian
6/28/74	1	-	-	-	-	1	Chickaloon River
9/28 & 30/74	4	-	-	1	1	11	Chickaloon River

^{1/} Includes yearlings
^{2/} Group size in parentheses

PREPARED BY: Paul A. LeRoux, Game Biologist III

Appendix V. Chronology of Black Bear Hunting Harvest in Game Management Unit 7, 1974.

<u>Period</u>	<u>Number of Bears Harvested</u>			<u>Total</u>
	<u>Male</u>	<u>Female</u>	<u>Unknown Sex</u>	
Jan 1-April 30	0	0	0	0
May 1-10	0	1	0	1
May 11-20	4	0	2	6
May 21-31	4	2	3	9
June 1-10	3	2	1	6
June 11-20	1	2	0	3
June 21-30	2	1	0	3
Closed Season				
Aug 10-20	2	1	0	3
Aug 21-31	2	1	0	3
Sept 1-10	0	2	0	2
Sept 11-20	1	0	0	1
Sept 21-30	0	0	0	0
Oct 1-10	1	1	0	2
Oct 11-20	1	0	0	1
Oct 20-31	0	0	0	0
Nov 1-Dec 31	0	0	0	0
	<u>21</u>	<u>13</u>	<u>6</u>	<u>40</u>

PREPARED BY: Paul A. LeRoux, Game Biologist III

BLACK BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1975

Game Management Unit 9 - Alaska Peninsula

Seasons and Bag Limits

No closed season

Three bears; provided that the taking of cubs or females accompanied by cubs is prohibited.

Harvest and Hunting Pressure

No harvest data were available as the sealing of black bears is not required in this unit. The estimated harvest is 10-20 bears annually.

Composition and Productivity

No work was accomplished.

Management Summary and Conclusions

Black bears occur regularly in the northern portion of Unit 9. Occasional reports of black bears as far south as Katmai National Monument are received. Most of the harvest is believed incidental to hunts for other species. There is some use of black bears for meat by local residents.

Recommendations

No changes in seasons and bag limits are recommended at this time.

PREPARED BY:

Nick Steen
Game Biologist II

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

BLACK BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 11 - Wrangell Mountains

Seasons and Bag Limits

No Closed Season

Three bears; provided that the taking of cubs or females accompanied by cubs is prohibited.

Harvest and Hunting Pressure

A requirement that the hide and skull of black bears be presented to the Department of Fish and Game for sealing went into effect July 1, 1973. This report covers the calendar year 1974, therefore, 1974 will be the first complete year of data on black bears from sealing certificates. Sealing data show a harvest of 16 black bears, 10 males, 5 females and 1 of unknown sex, with a mean male skull size of 16 6/8 inches and a mean female skull size of 15 1/8 inches (Appendix I).

An analysis of the harvest by location of kill shows that all 16 black bears were harvested in the Chitina Valley. Residency of successful hunters indicates that residents (56%) harvested more black bears than nonresidents (44%) (Appendix II). Since this hadn't been the case before the Chitina-McCarthy road was open, the new access may be the reason for increased resident hunting pressure. As in the past, all successful nonresidents were guided whereas successful residents were not. The transportation used indicates that aircraft and road vehicles are most often used with 31 percent and 37 percent, respectively. The average number of days hunted was 5.3 compared to 3.7 last year. However, this number was arrived at by figuring in one resident hunter who reported spending 30 days to harvest 2 black bears and a nonresident who spent 21 days. The nonresident tagged his black bear with a brown/grizzly tag indicating he settled for a black bear when unsuccessful for a grizzly. Deleting these two hunters, a more meaningful figure may be 2.6 for the average days hunted (Sample of 13).

The number of black bear hunters cannot be determined, but most black bears are believed to have been harvested incidental to hunts for other big game species. This is suggested by a comparison of the chronology of the harvest with the established hunting seasons for sheep, caribou and moose (Appendix III). Two black bears were harvested in the spring whereas the remaining 14 were taken from August 10-September 30.

Composition and Productivity

Sealing data show the harvest to be comprised of 63 percent males, 31 percent females and 6 percent unknown sex. This high male harvest is probably an indication of a lightly hunted population. Age data from collected teeth are not available at this time.

Management Summary and Conclusions

A comparison of the average skull size and sex composition of the harvest of 1973 with that of 1974 indicates a lightly hunted population, however, our sample sizes were low. Black bear hunting was restricted primarily to the Chitina Valley and was probably done in conjunction with hunts for other game species. The total reported harvest from fall 1973 was three, whereas 16 were taken during 1974 with reports for the entire year. The 48 percent decrease in harvest may be a product of an extremely poor berry crop. With a poor berry crop, black bears spend less time feeding on open slopes where they are more vulnerable to hunters.

Recommendations

No changes in seasons or bag limits are recommended at this time.

PREPARED BY:

Ted Spraker
Game Biologist II

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

Appendix I. Black Bear Harvest with Mean Skull Size of Male and Female Bears Sealed in Alaska's Game Management Unit 11.

<u>Date</u>	<u>Unit</u>	<u>Total Harvest</u>	<u>No. Males</u>	<u>% Males</u>	<u>No. Females</u>	<u>% Females</u>	<u>No. Unknown Sex</u>	<u>% Unknown Sex</u>	<u>Mean Skull Size Male*</u>	<u>Mean Skull Size Female*</u>
7/1-12/31/73	11	31	20	65%	11	35%	0	0	17.0(20)	15.9(8)
1/1-12/31/74	11	16	10	63%	5	31%	1	6%	16 6/8(10)	15 1/8 (5)

* Skull sample size in parenthesis, skull measurements were recorded in 1/8 ths of an inch during 1974.

Appendix II. Residency, Days Hunted, Number of Guided Hunts, and Methods of Transportation for Successful Black Bear Hunters in Alaska's Game Management Unit 11.

Date	Unit	Residency of Successful Hunters						No. Guided Hunts						Transportation Used							
		Non-res.		Res.		Av. Days Hunted	Non-res.		Res.		Aircraft		Off Road Vehicle		Boat		Horse		Other		
		No.	%	No.	%		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%			
		No.	%	No.	%		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%			
7/1-12/31/73	11	18	58%	13	42%	3.71	18	100%	0	0	9	29%	3	9.7%	0	0	8	25.8%	11	35.5%	
1/1-12/31/74	11	7	44%	9	56%	5.3	7	100%	0	0	5	31%	2	13%	0	0	3	19%	5	37%	

PREPARED BY:

Ted Spraker
Game Biologist II

Appendix III. Chronology of Black Bear Sport Hunting Harvest in Alaska's
Game Management Unit 11, January 1, through December 31, 1974.

	<u>No. of Bears Harvested</u>
May 10-20	1
May 21-31	0
June 1-10	1
June 11-20	0
July 1-10	0
July 11-20	0
July 21-31	0
August 1-9*	0
August 10-19 **	4
August 20-31	2
September 1-10	3
September 11-20 ***	2
September 20-30 ****	3
October 1-10	0
October 11-20	0
October 21-December 31	0

* Period August 1-9 used because sheep, goat and caribou season opened in Unit 11 on August 10.

** Period August 10-19 used because this time interval represented the period when sheep, goat and caribou season was open, but before moose season opened August 20.

*** September 20 was the closing date of sheep season in all of Unit 11.

**** September 30 was the closing date of moose and caribou season in Unit 11.

PREPARED BY:

Ted Spraker
Game Biologist II

BLACK BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 12 - Upper Tanana-White River

Seasons and Bag Limits

No closed season

Three bears; provided that the taking of cubs or females accompanied by cubs is prohibited.

Harvest and Hunting Pressure

Sealing information, first required for black bears beginning July 1, 1974, disclosed that 23 bears were taken in Unit 12. Five males and 1 female were taken prior to July 1 and 5 males and 11 females were reported after July 1. These figures should be considered minimal because although an effort was made to seal bears which were taken prior to July 1 and a concentrated I&E effort was undertaken to inform the public of the new bear sealing requirement it soon became obvious that many people were not aware of the regulation, and compliance with the new sealing regulations was not universal, particularly in rural areas of Unit 12.

Black bear hunting by residents has usually been light and on an opportunistic basis, but there is some indication that this situation may be changing. Casual conversations with hunters have disclosed that an increasing number of people are specifically seeking black bears, especially during the early spring when pelts are prime and the animals are still fat and palatable.

The present harvest is light and, except for local situations, has little or no effect on the population size.

Composition and Productivity

No data were available. Casual observations suggest that the Unit 12 black bear population was moderate in size during 1974.

Management Summary and Recommendations

While Unit 12 black bear population fluctuations are not related to hunting pressure, there is increasing evidence of a growing public dissatisfaction with the current three bear bag limit. Although they were long considered a nuisance in the Interior this public attitude may be changing. Since this valuable game animal may be increasing in importance to Interior Alaska hunters and since the Department is increasing the S&I effort toward the species, it may be wise to reevaluate the desirability of continuing a three bear bag limit.

No changes in seasons or bag limits are recommended at this time.

PREPARED BY:

SUBMITTED BY:

Larry Jennings
Game Biologist III

Oliver E. Burris
Regional Management Coordinator

BLACK BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 13 - Wrangell Mountains

Seasons and Bag Limits

No closed season

Three bears; provided that the taking of cubs or females accompanied by cubs is prohibited.

Harvest and Hunting Pressure

A requirement that the hide and skull of black bears, taken in certain units, be presented to the Department of Fish and Game for sealing went into effect July 1, 1973. This report covers the calendar year of 1974, the first complete year of data on black bears from sealing certificates. The sealing data indicate that 50 black bears were taken from Unit 13; 32 (64 percent) were males, 16 (32 percent) females and two (4 percent) were of unknown sex. The mean skull size of harvested bears was 16 2/8 inches for males and 15 7/8 inches for females (Appendix I).

An analysis of the harvest by location of kill shows the following number of black bears taken from each subunit: Subunit 13A-3, Subunit 13B-4, Subunit 13C-6, Subunit 13D-32, and Subunit 13E-5. Subunit 13D has a number of roads and trails providing hunters with easy and inexpensive access. The large black bear population and good access in 13D help explain why this area produced 64 percent of the Unit 13 harvest. This harvest is not believed to be excessive since the mean skull size of males is larger than the mean skull size of males for the entire unit (Appendix I).

Data from sealing certificates indicate that walk-in and road vehicles are the most popular means of transportation (Appendix III).

Residency of successful hunters indicates that 40 (80 percent) hunters were residents and 10 (20 percent) were nonresidents. All nonresidents hunted in Subunit 13D and nine of the ten were accompanied by guides. The average number of days required for a successful hunt decreased from 3.6 in 1973 to 3.3 this year (Appendix III).

It is generally felt that black bears are taken incidentally during hunts for other big game species. This is suggested from the chronology of the harvest from 1974 (Appendix II) compared to the established hunting seasons for sheep, caribou and moose. Nevertheless, a fairly constant number of black bears were taken from May 11 to August 10, indicating that hunters are taking advantage of the open season during spring and summer months. Since sealing was not required prior to July 1, 1973 a comparison of the spring hunting pressure cannot be made. The spring hunting success for 1974 was low, with five black bears being taken from May 11 to June 20.

Composition and Productivity

Sealing data for Unit 13 show the harvest to be comprised of 64 percent males, 32 percent females and 4 percent of unknown sex (Appendix I). Age data from the collected teeth are not available at this time.

Management Summary and Conclusions

A comparison of the average skull sizes and sex composition of the harvest between 1973 and 1974 (Appendix I) indicates a lightly hunted population, with the exception of Subunit 13D. In 1973, 32 (46.4 percent of total harvest) black bears were removed from 13D between July 1 and December 31. In 1974, with reports for the entire year, 32 black bears were taken comprising 64 percent of the total harvest. The mean skull size of males and females remained sufficiently large and the male/female ratio (59.4 percent/34.4 percent) indicated the harvest was not excessive. With a generally increasing amount of hunting pressure, especially in Subunit 13D, the black bear population could be affected. Future sealing data should be closely monitored to avert that possibility.

Recommendations

No changes in seasons or bag limits are recommended at this time.

PREPARED BY:

Ted Spraker
Game Biologist II

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

Appendix I. Black Bear Harvest with Mean Skull Size of Male and Female Sealed in Alaska's Game Management Unit 13, by subunits. This table covers the periods 7/1-12/31, 1973 and 1/1-12/31, 1974.

<u>Date</u>	<u>Subunit</u>	<u>Total Harvest</u>	<u>No. Males</u>	<u>% Males</u>	<u>No. Females</u>	<u>% Females</u>	<u>No. Unknown Sex</u>	<u>% Unknown Sex</u>	<u>Mean Skull Size Male*</u>	<u>Mean Skull Size Female*</u>
1973	13A	11	5	45.5	6	54.5	0	0	17.2(5)	15.4(5)
1974	13A	3	3	100.0	0	0	0	0	17 5/8(3)	----(0)
1973	13B	3	1	33.3	2	66.6	0	0	15.8(1)	15.4(2)
1974	13B	4	4	100.0	0	0	0	0	17 2/8(4)	----(0)
1973	13C	1	1	1.0	0	0	0	0	14 (1)	0
1974	13C	6	2	33.3	4	66.7	0	0	14 5/8(2)	16 1/8(1)
1973	13D	32	20	62.5	10	31.3	2	6.3	16.1(16)	15.6(8)
1974	13D	32	19	59.4	11	34.4	2	6.3	16 5/8(16)	14 5/8(9)
1973	13E	22	15	68.2	7	31.8	0	0	16.1(13)	15.6(5)
1974	13E	5	4	80.0	1	20.0	0	0	15 1/8(2)	16 7/8(1)
<u>Total</u>										
1973		69	42	60.9	25	36.2	2	2.9	16.2(36)	15.5(20)
1974		50	32	64.0	16	32.0	2	4.0	16 2/8(27)	15 7/8(11)

* Skull sample size in parenthesis, skull measurements were recorded in 1/8 ths of an inch during 1974.

PREPARED BY:

Ted Spraker
Game Biologist II

Appendix II. Chronology of Black Bear Sport Hunting Harvest in Alaska's Game Management Unit 13. January 1 through December 31, 1974

	<u>No. of Bears Harvested</u>
May 11-20	2
May 21-31	2
June 1-10	1
June 11-20	0
June 21-30	2
July 1-10	2
July 11-20	2
July 21-31	3
August 1-9 *	2
August 10-19 **	5
August 20-31	4
September 1-10	16
September 11-20 ***	5
September 21-30	2
October 1-10	2
October 11-20	0
October 21-December 31	0

* Period August 1-9 used because sheep, goat, and caribou opened in Unit 13 on August 10.

** Period August 10-19 used because this time interval represented the period when sheep, goat, and caribou season was open, but before moose season opened on August 20.

*** September 20 was the closing date of sheep, caribou, and moose season in all of Unit 13.

PREPARED BY:

Ted Spraker
Game Biologist II

Appendix III. Residency, Days Hunted, Number of Guided Hunts, and Methods of Transportation for Successful Black Bear Hunters in Alaska's Game Management Unit 13. This table covers the period 7/1-12/31,1973 and 1/1-12/31,1974.

Date	Unit	Residency of Successful Hunters				Av. Days Hunted	No. Guided Hunts				Transportation Used									
		Non-res.		Res.			Non -res.		Res.		Aircraft		Off Road Vehicle		Boat		Horse		Other	
		No.	%	No.	%		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1973	13A	6	54.5	5	45.5	3.5	3	60	0	0	4	36.4	0	0	0	0	0	0	7	63.6
1974	13A	0	0	3	100.0	5	0	0	0	0	2	67.0	0	0	0	0	0	0	1	33.3
1973	13B	0	0	3	100.0	6	0	0	0	0	1	33.3	0	0	0	0	0	0	2	66.7
1974	13B	0	0	4	100.0	1.4	0	0	0	0	0	0	0	0	0	0	0	0	4	100.0
1973	13C	0	0	1	100.0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	100.0
1974	13C	0	0	6	100.0	1.7	0	0	0	0	0	0	3	5.0	0	0	0	0	3	50.0
1973	13D	12	37.5	20	62.5	2.6	11	91.7	0	0	10	31.3	2	6.3	1	3.1	3	9.4	16	5
1974	13D	10	32.0	22	68.0	5.0	9	90.0	0	0	9	28.0	0	0	2	6.0	4	13.0	17	53.0
1973	13E	16	72.7	6	27.3	4.9	16	100.0	1	16.7	13	59.1	0	0	2	9.1	0	0	7	31.8
1974	13E	0	0	5	100.0	3.4	0	0	1	20.0	2	40.0	0	0	0	0	0	0	3	60.0
Total Unit 13																				
1973		34	49.3	35	50.7	3.6	30	88.2	1	2.9	28	40.6	2	2.9	3	4.3	3	4.3	33	47.8
1974		10	20.0	40	80.0	3.3	9	90.0	1	2.5	13	26.0	3	6.0	2	4.0	4	8.0	28	56.0

PREPARED BY:

Ted Spraker
Game Biologist II

BLACK BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Subunits 14A and 14B - Upper Cook Inlet

Seasons and Bag Limits

No Closed Season

Three bears; provided that the taking of cubs or females accompanied by cubs is prohibited.

Harvest and Hunting Pressure

This was the first full year during which black bears taken in Subunits 14A and 14B were required to be presented to the Alaska Department of Fish and Game for sealing. This regulation went into effect on July 1, 1973.

During 1974, 24 black bears taken in Subunits 14A and 14B were presented for sealing (Appendix I). This includes 6 bears (25%) taken in the spring (prior to July 1) and 18 (75%) taken in the fall (July 1-December 31) (Appendix II). During the fall period in 1973 a total of 67 black bears were harvested in Subunits 14A and 14B.

Seventeen of the black bears taken in Subunits 14A and 14B during 1974 came from Subunit 14A and 7 came from 14B. During the 1973 season 42 bears were taken in Subunit 14A and 22 in 14B.

Residency information on bear hunters who took black bears in Subunits 14A and 14B during 1974 indicates that all the bears taken in Subunit 14A were taken by resident hunters, but that 4 (57%) of the bears taken in 14B were harvested by nonresidents (Appendix III). Two (50%) of the 4 nonresidents were on guided hunts.

Method of transportation data indicate that 12 (70.6%) of the successful bear hunters in Subunit 14A during 1974 used "other" methods of transportation. The "other" category includes foot and highway vehicle transportation. In 14B, three (42.9%) of the hunters utilized aircraft while two (28.6%) listed their transportation means as "other".

In Subunit 14A the average number of days hunted per successful black bear hunter in 1974 was 1.5 days (contrasting with 2.3 days in 1973). In 14B the 1974 average was 9.6 days per bear as opposed to 2.7 days per bear in 1973. No effort data are available for unsuccessful black bear hunters.

The chronology of the reported harvest data for 1974 indicates that six (25%) of the bears were harvested in the spring prior to July 1 and 17 (70.8%) were taken between August 10 and September 20 when sheep and/or moose hunting seasons were in progress.

Composition and Productivity

Eleven (52.4%) of the black bears taken in Subunits 14A and 14B during 1974 were males, 10 were females and 3 were of unknown sex. In 1973, 66.2 percent of the bears were males. In subunit 14A the percentage of males in the harvest in 1974 (52.9%) was similar to that of 1973 (58.5%). In Subunit 14B, two (50.0%) of the bears taken in 1974 were males, while in 1973, 19 (90.5%) of the bears were males.

Mean skull size data for Subunits 14A and 14B in 1974 closely approximate those of 1973 for both male and female bears. The 1974 mean for males was 17.4 inches as opposed to 17.3 inches in 1973. The 1974 mean for females of 15.6 inches was similar to the 15.5-inch mean in 1973.

Management Summary and Conclusions

The fall black bear harvest from Subunits 14A and 14B during 1974 was well below the 1973 level. Nearly four times as many bears were harvested in fall (July 1-December 31) 1973 compared to fall 1974.

The reduced harvest as well as a decrease in the number of bear complaints and incidental bear observations and conversations with hunters all indicate the black bear population in Subunits 14A and 14B was at a lower level in 1974 than in 1973.

The new regulation which took effect on July 1, 1974 that prohibited the taking of black bear on the same day an individual is airborne could have had a slight effect on the Subunit 14A and 14B black bear harvest. In contrast, method of transportation data indicate a greater percentage of the bear hunters reported utilizing aircraft in 1974 than in 1973.

No nonresidents participated in the harvest in Subunit 14A, but four (57.1%) of the seven successful hunters in 14B were nonresidents.

In Subunit 14A, the average number of days hunted per successful bear hunter was lower during 1974 than 1973. Successful hunters hunted 3.5 times as much in 1974 than in 1973. Small sample sizes and the probable nature of nonresident hunts influenced this increase in 14B.

Chronology of harvest data revealed that the majority of the harvest (70.8%) in Subunits 14A and 14B occurred in the fall while other big game seasons (moose and sheep) were in progress. This indicates that many of the bears may have been taken while hunting for other species or at least while hunters were on multiple species hunts.

Skull size data indicate there were no appreciable differences in the age structure of bears harvested in 1974 compared with those harvested in 1973.

Recommendations

No changes in seasons or bag limits are recommended at this time.

PREPARED BY;

Jack C. Didrickson and Don Cornelius
Game Biologist III and Game Biologist II

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

Appendix I. Black Bear Harvest with Mean Skull Size of Male and Female Bear Sealed in Alaska's Game Management Subunits 14A and B During the Period July 1 through December 31, 1973 and January 1 through December 31, 1974.

Sub Unit	Year <u>1/</u>	Total Harvest	No. Males	% <u>2/</u> Males	No. Females	% <u>2/</u> Females	No. Unknown Sex	Mean Skull <u>3/</u> Size Male	Mean Skull <u>3/</u> Size Female
14A	1973	42	24	58.5	17	41.5	1	17.6 (21)	15.6 (15)
	1974	17	9	52.9	8	47.1	0	17.3 (7)	15.9 (5)
14B	1973	22	19	90.5	2	9.5	1	16.8 (16)	13.6 (1)
	1974	7	2	50.0	2	50.0	3	17.8 (2)	14.9 (2)
14A or B	1973	3	0	0.0	3	100.0	0	---- (0)	15.3 (2)
	1974	0	0	0.0	0	0.0	0	---- (0)	---- (0)
Total									
14A, B,	1973	67	43	66.2	22	33.8	2	17.3 (41)	15.5 (18)
14A or B	1974	24	11	52.4	10	47.6	3	17.4 (9)	15.6 (7)

1/ 1973 data for period July 1-December 31; 1974 data for period January 1-December 31.

2/ Percentage based on known sex bears.

3/ Skull sample size in parentheses.

PREPARED BY: Jack C. Didrickson, Game Biologist III
Don Cornelius, Game Biologist II

Appendix II. Chronology of Black Bear Harvest in Alaska's Game Management Subunits 14A and B, July 1 through December 31, 1973 and January 1 through December 31, 1974.

<u>No. of Bears Harvested</u>			<u>No. of Bears Harvested</u>		
<u>Time Interval</u>	<u>1973</u>	<u>1974</u>	<u>Time Interval</u>	<u>1973</u>	<u>1974</u>
Prior to May	--	0	July 1-10	1	0
May 1-10	--	1	July 11-20	2	0
May 11-20	--	1	July 21-31	5	0
May 21-31	--	0	Aug. 1-9 <u>1/</u>	2	0
June 1-10	--	1	Aug. 10-19 <u>2/</u>	10	2
June 11-20	--	1	Aug. 20-31	13	4
June 21-30	--	2	Sept. 1-10	20	3
			Sept. 11-20 <u>3/</u>	11	8
			Sept. 21-30	0	1
			Oct. 1-10	0	0
			Oct. 11-20	3	0
			Oct. 21-Dec. 31	0	0
Total Harvest			Total Harvest		
Prior to July 1	--	6	After July 1	67	18

- 1/ Period August 1-9 used because sheep season opened on Aug. 10.
 2/ Period August 10-19 used because this time interval represents the period when sheep season was open, but before moose season opened on Aug. 20.
 3/ Sept. 20 was the closing date of moose and sheep seasons in Subunits 14A and B.

PREPARED BY: Jack C. Didrickson, Game Biologist III
 Don Cornelius, Game Biologist II

Appendix III. Residency, Days Hunted, Number of Guided Hunts, and Methods of Transportation for Successful Black Bear Hunters in Alaska's Game Management Subunits 14A and B; July 1 through December 31, 1973 and January 1 through December 31, 1974.

											<u>Transportation Used</u>									
Sub-Unit	Year	Residency of Successful Hunters				Av. Days Hunted	No. Guided Hunts													
		Non-res.		Res.			Non-res.		Res.		Aircraft		O.R.V.		Boat		Horse		Other	
		No.	%	No.	%		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
14A	1973	3	7.1	39	92.9	2.3	2	66.7	0	0.0	3	7.1	5	11.9	3	7.1	3	7.1	28	66.7
	1974	0	0.0	17	100.0	1.5	0	0.0	0	0.0	3	17.6	2	11.8	0	7.0	0	0.0	12	70.6
14B	1973	4	18.2	18	81.8	2.7	2	50.0	1	5.6	6*	27.3	2	9.1	1	4.5	1*	4.5	13	59.1
	1974	4	57.1	3	42.9	9.6	2	50.0	0	0.0	3	42.9	1	14.3	0	0.0	1	14.3	2	28.6
14A orB	1973	1	33.3	2	66.7	3.3	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	100.0
	1974	0	0.0	0	0.0	---	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
<u>Total</u>																				
14A, B, 1973		8	11.9	59	88.1	2.5	5	62.5	1	1.7	9	13.2	7	10.3	4	5.9	4	5.9	44	64.7
14A orB 1974		4	16.7	20	83.3	3.8	2	50.0	0	0.0	6	25.0	3	12.5	0	0.0	1	4.2	14	58.3

* One hunter reported using both aircraft and horse and was included twice.

PREPARED BY: Jack C. Didrickson, Game Biologist III
Don Cornelius, Game Biologist II

BLACK BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 14C - Anchorage

Seasons and Bag Limits

Unit 14C (except that portion in Chugach State Park).	No closed Season	Three bears; provided that the taking of cubs or females accompanied by cubs is prohibited.
Unit 14C in Chugach State Park.	Day after Labor Day - April 30	One bear; provided that the taking of cubs or females accompanied by cubs is prohibited.

Harvest and Hunting Pressure

During 1974, 4 black bears were harvested in Subunit 14C. All 4 were taken in the month of May. During fall 1973, 6 bears were taken. Harvest data were not available for spring 1973.

All black bears taken in 1974 were shot by residents of the area, and only one bear was harvested with the aid of a motorized vehicle.

All successful hunters spent only one day hunting to kill a bear.

Composition and Productivity

Three of the bears taken in 1974 were males and one was of unknown sex. Of the 6 bears taken in 1973, 5 were males and one was a female.

Mean skull size for male bears in 1974 was 16.6 inches. In 1973 male mean skull size was 17.6 inches.

Management Summary and Conclusions

During fall 1973, 6 bears were harvested in Game Management Subunit 14C. In fall 1974 no bears were taken. The reduced harvest, coupled with reduced sightings by hunters and other users of the area, indicate that bears were not available during the 1974 fall season. The reasons for their apparent scarcity are unknown, although not thought to be related to actual population levels.

Black bear kill locations indicate that 3 of the 4 bears killed were taken as a result of chance encounters rather than on an actual hunt.

The black bear harvest in 14C is believed to be far below what the area could support.

Recommendations

No changes in season or bag limits are recommended at this time.

PREPARED BY:

Dave Harkness
Game Biologist II

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

BLACK BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 15 - Western Kenai Peninsula

Seasons and Bag Limits

Aug. 10 - June 30

Three bears; provided that not more than one may be a blue or glacier bear and that the taking of cubs or females accompanied by cubs is prohibited.

Harvest and Hunting Pressure

Prior to July 1973 the only bear harvest data available were from the 1969 multiple species harvest questionnaire which was a part of the harvest report packet. Since compliance was voluntary and reminder letters were not sent these data must be considered minimum (Appendix I).

Sealing of black bear hides and skulls was initiated July 1, 1973 in Unit 15. Therefore, 1974 was the first complete data collection year. General unfamiliarity with the new sealing requirement, especially on the lower Kenai, resulted in some black bears remaining unsealed and not included in the final tabulations.

Sixty-seven black bears were sealed in 1974 (Appendix I). This harvest appears considerably below the 1973 harvest when 71 bears were sealed in the fall alone and the estimate for the entire year was nearly 90 bears. Casual observations in the upper Peninsula Kenai Mountains by several biologists during survey flights for other species gave the impression that black bears were not as abundant in 1974 in that area as they were in 1973. Harvest figures seem to support this. While the harvest increased in 15B by 6 bears (30%) and in 15C by 7 bears (44%) it dropped by 17 bears (49%) in Subunit 15A.

Both Subunits 15B and 15C had considerably higher harvests in 1974 than 15A, while the 1973 harvest in 15A was as large as 15B and 15C combined. Relative abundance of bears is the only readily apparent reason for this large shift in distribution of the harvest. Since a large number of bears appear to be taken incidental to other activities, especially fall moose hunting, changes in moose hunting pressure might be suspected to be causing this shift in harvest. Although the 1973 and 1974 moose seasons were identical in timing and length, there did appear to be a significant decline in 15A moose hunting pressure in 1974. This could have been important in causing the observed changes in bear harvest, but it appears unlikely to have been solely responsible.

Mean skull size for males in 1974 was the same as in 1973 (Appendix I). Female skulls averaged 1.2 inches smaller in 1974, but it is doubtful that this is a significant difference. Meaningful trends cannot be established from two year's data.

The sex ratio of the harvest showed no significant differences in the 3 year's data for the entire unit (Appendix I).

Nonresidents took 22 percent of the total harvest, which was a 100 percent increase from 1973 (Appendix II). A high proportion of this increase came from a large group of nonguided Swedish hunters on Green Lake in 15B. The nonresident harvest in 15A was nearly the same, while 15C decreased from 7 to 4 bears taken.

The average number of days hunted increased from 2.5 days in 1973 to 3.4 days in 1974 (Appendix II). Again, this was due primarily to the increase in nonresident harvest. Nonresidents average more days hunted for bear than residents because many resident kills are incidental. This statistic, however, has a high degree of variability because some bear sealers do not make an effort to distinguish between total length of hunt and days hunted until a bear was taken.

The number of resident guided hunts remained the same as 1974 with 2 residents employing the services of a guide (Appendix II). Nonresident guided hunts increased from 4 to 8, however. There were 7 successful nonresidents who were unguided.

Four persons shot black bears in defense of life or property at their homes or hunting camps. These 4 persons were licensed, however, and retained the hides and/or meat. Therefore, these bears are included in the sport harvest figures.

During calendar year 1974, one hunter took 3 bears and 2 additional hunters each took 2 bears. The regulatory year (July to July) limit is 3 bears per hunter.

Appendix II presents the transportation means employed by successful hunters. Notable is the nearly 100 percent increase in hunters using aircraft and the 50 percent decrease in those using "other" (which usually means highway vehicle and/or foot) transportation. Examination of the subunit figures shows that the increase in aircraft transportation came primarily from 15B and 15C. The decrease in the "other" category came predominantly from 15A.

Appendices III and IV present the chronology and percent males in the spring and fall harvests. The 1969 harvest report questionnaire showed that 80 percent of the harvest was in the fall. In 1974 the fall harvest was 79 percent of the total.

Male bears comprised 71 percent of the spring harvest, although the sample size was small (14 bears). Sixty percent of fall bears were males. No bears were taken after October 20 in 1973 or 1974.

Composition and Productivity

Techniques for measuring sex and age composition of black bear populations have not been developed. Premolar teeth are being collected from harvested bears for aging, but have not been processed at this time.

Seven observations of black bears incidental to other work totaled 9 adults plus 1 sow with 2 cubs or yearlings.

Management Summary and Conclusions

It is generally believed that black bear populations fluctuate independently of hunting pressure in most areas. This appears to be the case in comparing distribution of the harvest for 1973 and 1974. The sealing requirement initiated in July 1973 should provide some useful trend data after 2 or 3 years of data accumulation. Sample sizes may be too small to show significant changes within some subunits, however.

The reported harvest appears well distributed throughout the unit, but must be considered an underestimate at this time. Another year or two and public knowledge of the relatively new sealing requirement should be fairly complete.

The 1974 harvest is probably below the level of harvest the unit can sustain. Since black bears are a relatively low density species and inhabit forested terrain, they are not easily overharvested. Harvest levels are somewhat self regulating by the principle of diminishing return in such cases. Subunit 15A in 1974 appears to be an example of this.

Recommendations

No changes in the season or bag limit are recommended.

The black bear sealing form might be revised to determine: degree of selectivity exercised; number of bears taken incidental to other hunting; how many bears the hunter has taken during the year; whether the bear was taken for meat or for a trophy and whether the meat was salvaged.

PREPARED BY:

Spencer Linderman
Game Biologist II

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

Appendix I - Black Bear Harvest and Mean Skull Size of Male and Female Bears.

Game Management Unit 15

<u>Year</u>	<u>Total Harvest</u>	<u>No. Males</u>	<u>% Males</u>	<u>No. Females</u>	<u>% Females</u>	<u>No. Unknown Sex</u>	<u>Mean Skull Size Male³</u>	<u>Mean Skull Size Female³</u>
1969 ¹	50	33	66	15	30	2	-	-
1973 ²	71	38	54	24	34	9	16.2 (30)	15.7 (21)
1974	67	42	53	22	33	3	16.3 (37)	14.5 (19)

Game Management Unit 15 (A)

<u>Year</u>	<u>Total Harvest</u>	<u>No. Males</u>	<u>% Males</u>	<u>No. Females</u>	<u>% Females</u>	<u>No. Unknown Sex</u>	<u>Mean Skull Size Male³</u>	<u>Mean Skull Size Female³</u>
1973 ²	35	21	60	9	26	5	15.8 (17)	16.3 (9)
1974	18	9	50	9	50	0	17.2 (9)	13.5 (8)

¹ Data from multiple species harvest questionnaire.

² Harvest for July 1 - Dec. only. Black bear sealing was initiated July 1, 1973.

³ Skull sample size in parenthesis.

Prepared by: Spencer Linderman, Game Biologist II

Appendix I - Black Bear Harvest and Mean Skull Size of Male and Female Bears.

Game Management Unit 15 (B)

<u>Year</u>	<u>Total Harvest</u>	<u>No. Males</u>	<u>% Males</u>	<u>No. Females</u>	<u>% Females</u>	<u>No. Unknown Sex</u>	<u>Mean Skull Size Male²</u>	<u>Mean Skull Size Female²</u>
1973 ¹	20	10	50	8	40	2	16.3 (8)	15.3 (8)
1974	26	19	73	7	27	0	15.7 (19)	15.0 (6)

Game Management Unit 15 (C)

<u>Year</u>	<u>Total Harvest</u>	<u>No. Males</u>	<u>% Males</u>	<u>No. Females</u>	<u>% Females</u>	<u>No. Unknown Sex</u>	<u>Mean Skull Size Male²</u>	<u>Mean Skull Size Female²</u>
1973 ¹	16	7	44	7	44	2	17.8 (5)	14.9 (4)
1974	23	14	61	6	26	3	16.6 (9)	15.6 (5)

¹ Harvest for July 1 - Dec. 31 only. Black bear sealing was initiated July 1, 1973.

² Skull sample size in parenthesis.

Prepared by: Spencer Linderman - Game Biologist II

Appendix II - Residency, Days Hunted, Number of Guided Hunts and Method of Transportation for Successful Black Bear Hunters.

Game Management Unit 15

Year	Residency of Successful Hunters				Av. Days Hunted	No. Guided Hunts				Transportation Used									
	Non-Res		Res.			Non-Res		Res.		Aircraft		Off Road Vehicle		Boat		Horse		Other	
	No.	%	No.	%		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1973 ¹	8	11	63	89	2.5	4	50	2	3	13	18	1	1	16	23	8	11	33	46
1974	15	22	52	78	3.4	8	53	2	4	25	37	4	6	15	22	5	7	17	25

Game Management Unit 15 (A)

Year	Residency of Successful Hunters				Av. Days Hunted	No. Guided Hunts				Transportation Used									
	Non-Res		Res.			Non-Res		Res.		Aircraft		Off Road Vehicle		Boat		Horse		Other	
	No.	%	No.	%		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
	No.	%	No.	%		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1973 ¹	1	3	34	97	2.1	0	0	1	3	5	14	0	0	1	3	1	3	28	80
1974	2	11	16	89	2.4	0	0	2	13	4	22	3	17	3	17	0	0	8	44

¹ Harvest for July 1 - Dec. 31 only. Black bear sealing was initiated July 1, 1973.

Prepared by: Spencer Linderman, Game Biologist II

Appendix II - Residency, Days Hunted, Number of Guided Hunts and Method of Transportation for Successful Black Bear Hunters.

Game Management Unit 15 (B)

Year	Residency of Successful Hunters				Av. Days Hunted	No. Guided Hunts				Transportation Used									
	Non-Res		Res.			Non-Res		Res		Aircraft		Off Road Vehicle		Boat		Horse		Other	
	No.	%	No.	%		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1973 ¹	0	0	20	100	2.7	0	0	1	5	3	15	0	0	10	50	4	20	3	15
1974	9	35	17	65	4.0	4	44	0	0	11	42	0	0	9	35	1	4	4	15

Game Management Unit 15 (C)

Year	Residency of Successful Hunters					Av. Days Hunted	No. Guided Hunts				Transportation Used									
	Non-Res		Res.		No.		%	Res		Aircraft		Off Road Vehicle		Boat		Horse		Other		
	No.	%	No.	%				No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
1973 ¹	7	44	9	56	3.7	4	57	0	0	5	31	1	6	5	31	3	19	2	13	
1974	4	17	19	83	3.6	4	100	0	0	10	43	1	4	3	13	4	17	5	22	

¹ Harvest for July 1 - Dec. 31 only. Black bear sealing was initiated July 1, 1973.

Prepared by: Spencer Linderman, Game Biologist II

Appendix III - Chronology of Number and Sex of Black Bears Harvested in Game Management Unit 15.

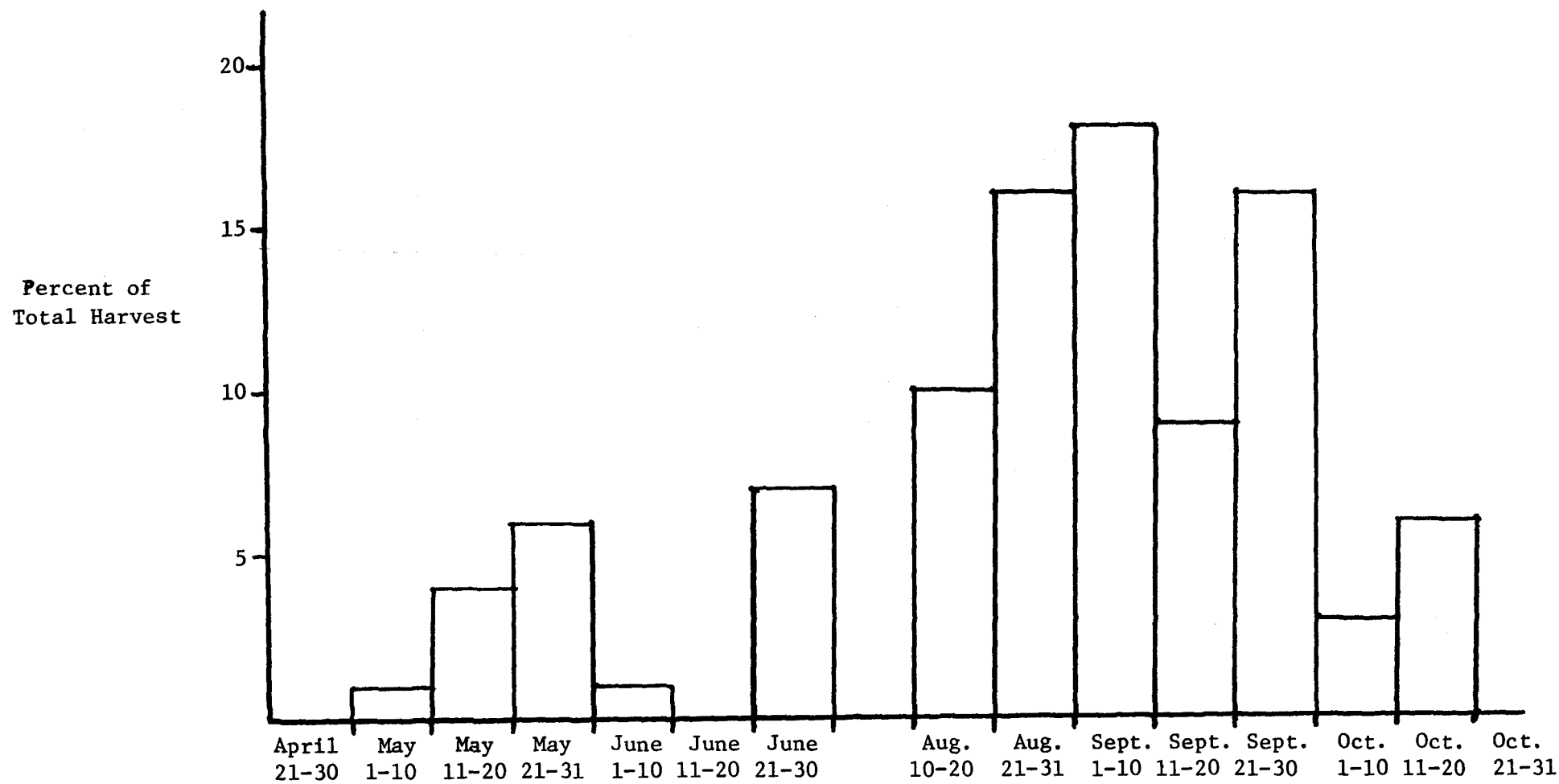
	<u>1973¹</u>			<u>1974</u>		
	<u>No. Bears</u>	<u>% of the total harvest²</u>	<u>% males</u>	<u>No. Bears</u>	<u>% of the total harvest</u>	<u>% males</u>
April 21-30				0	0	0
May 1-10				1	1	100
May 11-20				3	4	67
May 21-31				4	6	25
June 1-10				1	1	100
June 11-20				0	0	0
June 21-30				5	7	100
Total Spring				14	21	71
Aug. 10-19	14			7	10	71
Aug. 20-31	14			11	16	54
Sept. 1-10	16			12	18	58
Sept. 11-20	15			6	9	50
Sept. 21-30	8			11	16	54
Oct. 1-10	2			2	3	50
Oct. 11-20	1			4	6	100
Oct. 21-31	0			0	0	0
Total fall	70			53	79	60

¹ Black bear sealing was initiated July 1, 1973.

² Not given since 1973 data is for July 1 - Dec. 31 only.

Prepared by: Spencer Linderman, Game Biologist II

APPENDIX IV. CHRONOLOGY OF G.M.U. 15 BLACK BEAR HARVEST



BLACK BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 16 - West Side of Cook Inlet

Seasons and Bag Limits

No Closed Season

Three bears; provided that the taking of cubs or females accompanied by cubs is prohibited.

Harvest and Hunting Pressure

This was the first full year during which black bears taken in Unit 16 were required to be sealed by the Alaska Department of Fish and Game. The sealing regulation went into effect on July 1, 1973.

Sixty-six black bears taken in Unit 16 were presented for sealing during 1974 (Appendix I). Thirty-six (54.5 %) of the bears were taken in the spring (January 1 - July 1) and 30 (45.5 %) were taken in the fall (July 1 - December 31) (Appendix II). In the fall of 1973, 156 black bears were harvested in GMU 16.

Fifteen of the bears taken in Unit 16 during 1974 came from Subunit 16A. This was the same number taken during the fall portion of the 1973 season. In 1974, 49 of the Unit 16 black bears came from Subunit 16B (compared to 140 in 1973).

Information is not available regarding the number of unsuccessful black bear hunters. Individuals who took black bears in Unit 16 hunted an average of 2.6 days per bear (Appendix III). This is below the 4.3-day average for success in 1973.

Residency information reveals that 50 (75.8%) of the successful hunters were residents and 16 (24.2%) were nonresidents. Two (4%) of the residents and all 16 of the nonresident hunters were on guided hunts.

Method of transportation data reveal that 42 (63.6%) of the successful hunters utilized aircraft. Eight (12.1%) utilized boats and 12 (18.2%) listed their transport means as "other", which includes afoot and highway vehicle categories. In 1973, 71.2 percent of the successful hunters utilized aircraft.

The chronology of the reported black bear harvest in Unit 16 reveals that the periods of May 11-20, May 21-31, August 20-31 and September 11-20 had the highest reported harvest. Only one bear was taken from September 1-10 in 1974 compared to 53 bears taken during the same period in 1973.

Composition and Productivity

The mean skull size of 41 male bears harvested in all of Unit 16 during 1974 was 16.8 inches. This is similar to 16.5 inches from a sample of 80 in 1973. The mean skull size of 16 female bears taken during 1974 was 15.8 inches compared to 15.6 inches from a sample of 43 female black bears taken during 1973.

The average skull size of 9 male black bear taken in Subunit 16A during 1974 was 15.7 inches compared to 17.1 inches from a sample of 31 bears from Subunit 16B. Female bears exhibited a similar, though less pronounced, trend.

Management Summary and Conclusions

The black bear harvest from Unit 16 during 1974 was well below the 1973 level. If the harvests during the July 1 through December 31 time period are compared, this reduction is even more pronounced. The July 1-December 31 harvest in 1973 was five times as great as that harvest in 1974. During 1974 the spring harvest slightly exceeded the fall harvest.

Two factors probably contributed to the reduced harvest during 1974. Indices such as harvest, numbers of bear complaints, incidental observations of black bears and conversations with bear hunters all indicate the population of black bears was lower in 1974 than in 1973.

The second factor was a new regulation which took effect on July 1, 1974 adding black bear to the list of big game species which may not be hunted the same day an individual is airborne. Removing the opportunity for black bear hunters to spot bears from the air and shoot them on the same day could be very effective in reducing the harvest on this wary species in a unit where air transportation is important.

The spring 1974 harvest may have been inflated if hunters made extra effort to hunt black bear prior to the inception of the no hunting the same day airborne law.

Black bear harvests in Subunit 16A, where hunters have more alternative methods of transportation available, were less drastically altered in 1974 compared with 1973.

Mean skull sizes of black bears were slightly larger in 1974 than in 1973. Skull sizes from bears taken in Subunit 16A were smaller than those taken from Subunit 16B. This may indicate an altered age structure that resulted from intensive utilization. It must be noted, however, that sample sizes were small.

Recommendations

No changes in seasons or bag limits are recommended at this time.

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SUBMITTED BY:

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Appendix I. Black Bear Harvest in Alaska's Game Management Unit 16, with Mean Skull Size of Male and Female Bears Sealed During the Periods July 1 through December 31, 1973 and January 1 through December 31, 1974.

Sub Unit	Year <u>1/</u>	Total Harvest	No. Males	% <u>2/</u> Males	No. Females	% <u>2/</u> Females	No. Unknown Sex	Mean Skull <u>3/</u> Size Male	Mean Skull <u>3/</u> Size Female
16A	1973	15	8	61.5	5	38.5	2	15.2 (8)	15.2 (5)
	1974	15	9	64.3	5	35.7	1	15.7 (9)	15.2 (4)
16B	1973	140	88	67.7	42	32.3	10	16.7 (72)	15.7 (38)
	1974	49	34	72.3	13	27.7	2	17.1 (31)	16.1 (11)
16?	1973	1	0	0.0	0	0.0	1	---- (0)	---- (0)
	1974	2	1	50.0	1	50.0	0	17.6 (1)	14.4 (1)
Total									
Unit 16	1973	156	96	67.1	47	32.9	13	16.5 (80)	15.6 (43)
	1974	66	44	69.8	19	30.2	3	16.8 (41)	15.8 (16)

1/ 1973 data for period July 1-December 31; 1974 data for period January 1-December 31.

2/ Percentage based on known sex of bears.

3/ Skull sample size in parentheses.

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Appendix II. Chronology of Black Bear Harvest in Alaska's Game Management Unit 16; July 1-December 31, 1973 and January 1-December 31, 1974.

<u>No. of Bears Harvested</u>			<u>No. of Bears Harvested</u>		
<u>Time Interval</u>	<u>1973</u>	<u>1974</u>	<u>Time Interval</u>	<u>1973</u>	<u>1974</u>
Prior to April 1	--	0	July 1-10	1	2
April 1-30	--	1	July 11-20	0	0
May 1-10	--	2	July 21-31	2	0
May 11-20	--	14	Aug. 1-9 <u>1/</u>	4	1
May 21-31	--	8	Aug. 10-19 <u>2/</u>	10	3
June 1-10	--	2	Aug. 20-31	33	8
June 11-20	--	3	Sept. 1-10	53	1
June 21-30	--	3	Sept. 11-20 <u>3/</u>	37	8
			Sept. 21-30 <u>4/</u>	15	5
May (Date Unknown)	--	3	Oct. 1-10	0	1
			Oct. 11-20	1	0
			Oct. 21-Dec. 31	0	1
Total Harvest			Total Harvest		
Prior to July 1	--	36	After July 1	156	30

- 1/ Period August 1-9 used because sheep season opened in Unit 16 on Aug. 10.
2/ Period August 10-19 used because this time interval represents the period when sheep season was open, but before the moose season opened on August 20.
3/ September 20 was the closing date of sheep season in Unit 16.
4/ September 30 was the closing day of the fall moose season in 16A and 16B.

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Appendix III. Residency, Days Hunted, Number of Guided Hunts, and Methods of Transportation for Successful Black Bear Hunters in Alaska in Game Management Unit 16; July 1 through December 31, 1973 and January 1 through December 31, 1974.

Sub- Unit	Year	Residency of Successful Hunters					Av.Days Hunted	No. Guided Hunts				Transportation Used									
		Non-res.		Res.		Non-res.		Res.		Aircraft		O.R.V.		Boat		Horse		Other			
		No.	%	No.	%	No.		%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
16A	1973	1	6.7	14	93.3	2.2	0	0.0	0	0.0	1	6.7	2	13.3	1	6.7	0	0.0	11	73.3	
	1974	0	0.0	15	100.0	1.9	0	0.0	0	0.0	4	28.6	4	28.6	0	0.0	0	0.0	7	42.9	
16B	1973	46	32.9	94	67.1	4.4	34	73.9	1	1.1	109*	77.9	1	0.7	30*	21.4	0	0.0	4	2.9	
	1974	16	32.7	33	67.3	2.8	16	100.0	2	6.1	36**	72.0	0	0.0	8	16.0	1**	2.0	5	10.0	
16?	1973	1	100.0	0	0.0	2.0	1	100.0	0	0.0	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	
	1974	0	0.0	2	100.0	1.5	0	0.0	0	0.0	2	100.0	0	0.0	0	0.0	0	0.0	0	0.0	
<u>Total</u>																					
Unit 16	1973	48	30.8	108	69.2	4.3	35	72.9	1	0.9	111	71.2	3	1.9	31	19.9	0	0.0	15	9.6	
	1974	16	24.2	50	75.8	2.6	16	100.0	2	4.0	42	63.6	4	6.1	8	12.1	1	1.5	12	18.2	

* Four hunters who reported using both aircraft and boat were included in both categories.

** One hunter who reported using both aircraft and horse was included in both categories.

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BLACK BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1975

Game Management Unit 17 - Bristol Bay

Seasons and Bag Limits

No closed season

Three bears; provided that the taking of cubs or females accompanied by cubs is prohibited.

Harvest and Hunting Pressure

No harvest data were available as sealing of black bears is not required in this unit. The estimated annual harvest is less than 10 black bears.

Composition and Productivity

No work was accomplished.

Management Summary and Conclusions

Most of the harvest is believed incidental to hunts for other species. Some black bears are harvested by local residents for meat.

Recommendations

No changes in seasons or bag limits are recommended at this time.

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Regional Management Coordinator

BLACK BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 19 - McGrath

Seasons and Bag Limits

No closed season

Three bears; provided that the taking of cubs or females accompanied by cubs is prohibited.

Harvest and Hunting Pressure

Black bears were abundant through the spring and fall of 1974. However, hunting pressure decreased in most areas with the exception of the Alaska Range foothills. Trophy hunting of black bear has become popular with many guided hunters. Although most of these bears were unreported I would estimate this kill at 40-50 bears in 1974. Elsewhere bears were difficult to find, especially during the fall. Berry crops have suffered nearly complete failures the past two seasons, fall 1974 was no exception. Low lying areas throughout the unit had few if any berries and only occasional patches could be found at the higher altitudes. This may, in part, account for better bear hunting in the foothill areas.

Abundance, Composition and Productivity

No formal black bear surveys were attempted in 1974. Black bears seem to be decreasing; but, this observation may be due to shifts in distribution due to food shortages.

Management Summary and Recommendations

No regulatory changes are recommended.

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BLACK BEAR

SURVEY-INVENTORY PROGRESS REPORT - 1974

Game Management Unit 20 - Fairbanks, Central Tanana

Season and Bag Limit

No closed season

Three bears, provided that the taking of cubs or females accompanied by cubs is prohibited.

Harvest and Hunting Pressure

The sealing requirement for black bears was extended to Unit 20, effective July 1, 1974, in an effort to more accurately assess the harvest. Prior estimates of harvest were based on the number of nuisance/depredation complaints received at the Fairbanks office, the incidence of bears shot in defense of life and property and the number of hides received for processing by local taxidermists. These crude estimates indicated a harvest of 100 bears taken in the Interior in 1973, most of which were assumed to have been taken within or adjacent to Unit 20.

The 1974 reported harvest of 91 bears corresponded closely to the 1973 estimate. In as much as the sealing requirement was not effective until July 1 a lack of compliance may have existed. With a regulation initiating a new reporting system for a big game animal held in low esteem by many hunters, this harvest should be considered minimal. Public information efforts were undertaken prior to July 1 to obtain harvest information for bears taken prior to that date; some degree of success in this undertaking was evident in that 36 bears, or 40 percent of the total harvest, were sealed in May and June.

Evaluation of harvest data reveals that 72 percent of bears of known sex were males; this likely was not a reflection of the sex composition of the population due to the prohibition of taking sows with cubs. Subunit 20B, although occupying a relatively small portion of what is assumed to be black bear habitat in Unit 20, accounted for 41 percent of the total harvest. This is probably due to its extensive road and trail network and associated residential areas which increase the incidence of bear-human interactions. Sealing officers were instructed to record whether bears were taken specifically on a bear hunt or harvested incidental to other activities. Forty-one percent of the hunters from whom this information was obtained indicated they were hunting specifically for black bears; however, analysis of interest in black bear hunting from May-September indicates that 66 percent of the bear harvest in May and June was taken by hunters specifically on black bear hunts, while only 16 percent of the August-September harvest was comprised of bears not taken incidental to other hunting.

Bears are assumed to be uniformly distributed throughout Unit 20 and analysis of kill locations indicated a harvest of varying intensity

from the Taylor Highway on the east to the Kantishna River on the west. Two areas in the central portion of the unit, whether due to improved access or higher bear densities, contributed substantial numbers to the harvest. Seventeen bears were taken in the Chena drainage while the Tolovana River-Minto Flats harvest consisted of 16 bears. Kill densities for the remainder of the unit were less concentrated.

Harvest data do not include bears taken in defense of life and property. Two bears were dispatched for this reason in 1974, one by a local resident near Fairbanks, and another by Burgess Construction Company personnel at the Yukon River bridge site. Calls too numerous and varied to document here were received at the Fairbanks office involving nuisance bears; many potential depredations were eliminated by recommending these bears be taken by licensed hunters. Pipeline related incidents, dealing for the most part with grizzlies north of the Yukon, involved black bears at Five Mile Camp. As many as six bears were observed in the vicinity of the camp at one time; reluctance by Alyeska to dispose of nuisance black bears will perpetuate the existing problem regardless of proper sanitary measures.

Skull measurements, although provided for on sealing certificates, were not taken in order to expedite sealing. It was assumed that age data would provide necessary criteria with which to evaluate the level of exploitation on the bear population in this unit.

Abundance, Composition and Productivity

Standardized surveys are not conducted in this unit. Bear sightings made incidental to moose surveys on the Tanana Flats (GMU 20A) on May 16 and 17, 1974 revealed a total of seven adults, three cubs and three subadults. If the number of bears observed in this standardized moose survey area reflect bear abundance throughout the unit, black bear numbers did not fluctuate significantly from 1973 levels, when 11 adults and 1 cub were observed during May surveys. Indices of population levels in the remainder of the unit were not available.

Management Summary and Conclusions

It appears that Unit 20 has been able to support a relatively high bear population for three consecutive years. The estimated annual sport harvest of 100 bears in 1972 and 1973 corresponded to the known harvest of 91 in 1974, the first year in which black bears were sealed in Unit 20. This level of harvest does not appear to have adversely affected population levels in as much as observations of bears on standardized moose surveys did not fluctuate significantly in 1973 and 1974. However, the unit in which these surveys are conducted supports a small portion (14%) of the unit harvest. Age data for the 1974 harvest will provide a baseline index for future levels of exploitation.

Interest in spring (May-June) black bear hunting is relatively high (66 percent of the successful hunters during this period hunted specifically for bears). Management efforts should be directed toward providing the opportunity to hunt during this period when hide quality is best, especially in areas less susceptible to bear-human interactions. Wildlife planning efforts have proposed areas within the unit with the objective of maintaining a population with a high proportion of old bears, limited hunter density, and reduced bag limits of one bear. Specific regulation proposals have not been made and are not planned until wildlife plans are reviewed and accepted.

Portions of Unit 20 near residential areas should maintain liberal seasons and bag limits to minimize nuisance/depredation problems and maximize the opportunity to hunt until a potential overharvest exists. Preventive techniques stressing proper garbage disposal on manned fires and pipeline camps should be continued.

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