

ALASKA DEPARTMENT OF FISH AND GAME
JUNEAU, ALASKA

STATE OF ALASKA
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Robert A. Hinman, Acting Director

ANNUAL REPORT OF
SURVEY-INVENTORY ACTIVITIES
PART I. DEER, MOUNTAIN GOAT,
DALL SHEEP, ELK, SMALL GAME

Edited and compiled by
Robert A. Hinman, Acting Director

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(Printed September 1978)

ARCTIC OCEAN

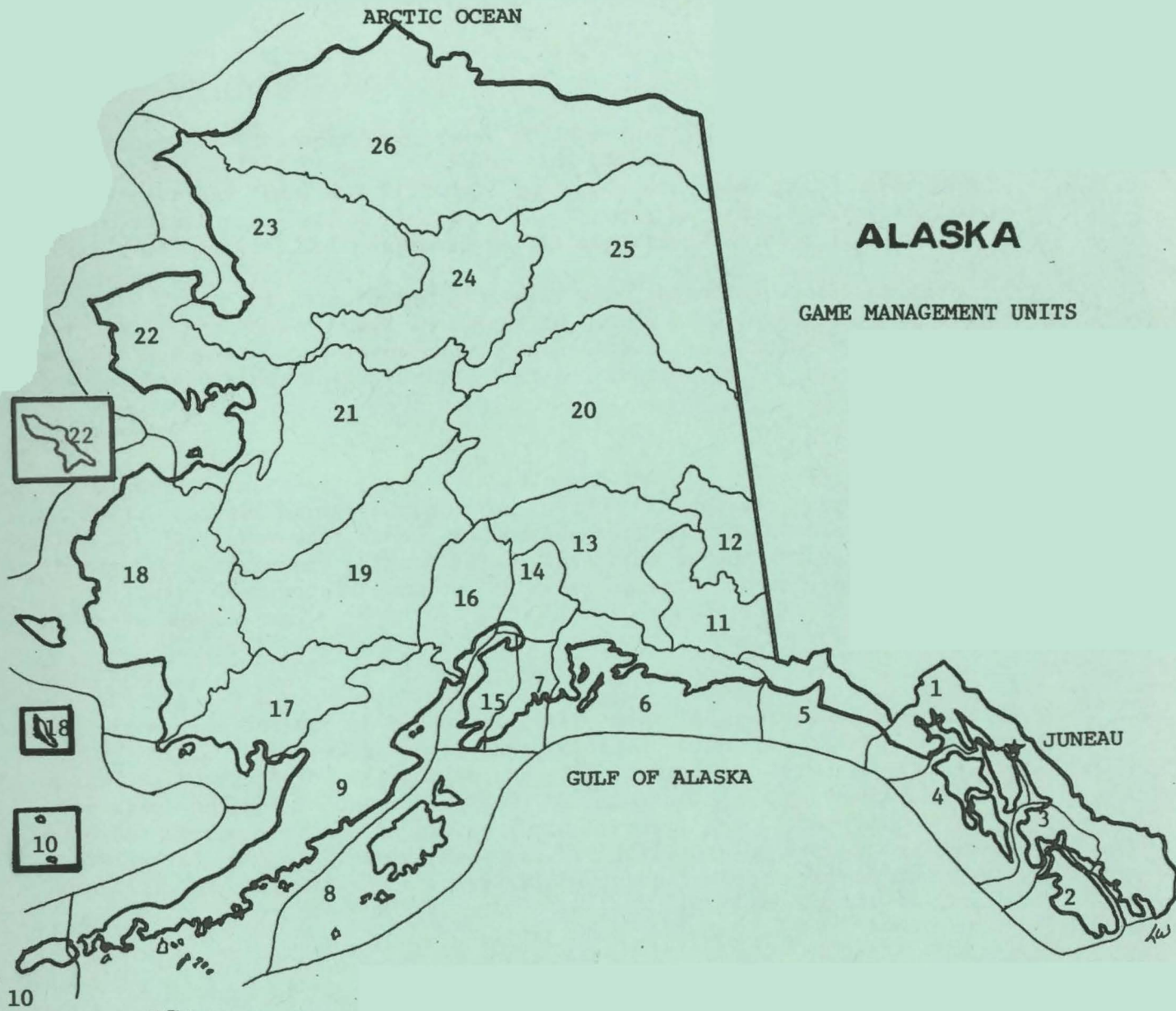
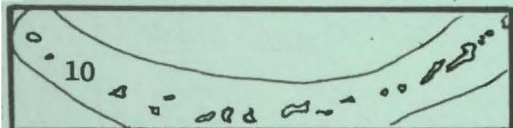
ALASKA

GAME MANAGEMENT UNITS

GULF OF ALASKA

JUNEAU

Aleutian Islands



STATEWIDE HARVESTS AND POPULATION STATUS

Sitka Black-Tailed Deer

The statewide recorded harvest of deer was 3,200 in 1976, considerably lower than the 1975 figure of 6,496. Low harvest reflected the extremely mild winter and resultant difficult hunting conditions, rather than lower deer populations. Unit 4 sustained the highest recorded harvest in the State (1,475), with Unit 8 second with a reported kill of 1,111.

The winter of 1975-76 was generally mild, allowing excellent deer survival. Populations have recovered to fairly high levels in Unit 4, but are still low in other portions of Southeastern, particularly in Units 1B and 3. Populations on Kodiak are high and increasing.

Mountain Goat

Statewide harvest of goats in 1976 was 431, only slightly lower than in 1975. Largest harvests came from Unit 6 (123 goats), Unit 7 (67) and Unit 15 (67). Downward trends in Southeastern goat populations appear to have been arrested; harvest levels have been reduced by season restrictions. Goat populations on the Kenai appeared to be stable or slightly decreasing.

Dall Sheep

Statewide harvest of sheep was 1,112, near the average of the last five years. Statewide sheep harvests have remained remarkably stable, although shifts in hunting pressure due to changing populations or weather conditions result in variance in certain units. The Alaska Range West has shown a slow but steady increase in pressure and harvest; the Brooks Range sustained slightly increased pressure, but little or no decline in average horn size. No significant changes in sheep populations were apparent.

Elk

The harvest of Elk in Unit 8 was 26 animals in 1976, near the five year average. Harvest is held to this low level by permits, and populations may be increasing slightly.

Small Game

Grouse populations were at a low level statewide, although ruffed grouse were at moderate levels in the Interior. Generally, grouse appear to be starting a recovery from their periodic low. Ptarmigan were moderately low in much of the state, and very low in the Steese Highway area of Interior Alaska. Snowshoe hare remained low in the Interior, Gulf and Southeastern areas, but moderately high in Western Alaska.

STATEWIDE DEER HARVEST - 1976

<u>Unit</u>	<u>Males</u>	<u>Females</u>	<u>Unknown</u>	<u>Total</u>
1A	164	43	---	207
1B	---	---	7	7
1C	51	40	7	98
2	92	11	---	103
3	---	---	10	10
4	991	447	37	1,475
5	---	---	---	0
6	109	60	---	189*
8	813	298	---	<u>1,111**</u>
TOTAL				3,200

* Interview data indicate 379 Cordova hunters took 412 deer in Unit 6

**Based on telephone interviews

STATEWIDE HARVEST OF SHEEP - 1976

Unit	Number of Rams	Area	Number of Rams
7	12	Kenai Mountains (KMR)	41
9	13	Talkeetna-Chulitna-Watana (TCW)	77
11	137	Tanana-White Mountains (THW)	8
12	214	Wrangell-Mentasta-Nutzotin (WMN)	322
13	136	Alaska Range East (ARE)	207
14	74	Alaska Range West (ARW)	131
15	29	Brooks Range (BRR)	186
16	23	Chugach Range (CRR)	132
17	2	Unknown (UNK)	8
19	93	TOTAL	<u>1,112</u>
20	185		
23	22		
24	37		
25	45		
26	82		
Unknown	8		
TOTAL	<u>1,112</u>		

STATEWIDE HARVEST OF GOATS - 1976

<u>Unit</u>	<u>Males</u>	<u>Females</u>	<u>Unspecified</u>	<u>Total</u>
1A	10	5	--	15
1B	13	10	--	23
1C	13	28	--	41
1D	--	--	17	17
4	18	9	--	27
5	--	--	7	7
6	74	49	--	123
7	38	29	--	67
8	2	1	--	3
11	16	10	1	27
13	7	5	--	12
14	2	0	--	2
15	41	26	--	67
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TOTAL	234	172	25	431

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DEER

SURVEY-INVENTORY PROGRESS REPORT - 1976

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

Seasons and Bag Limits

Aug. 1-Nov. 30

Three deer; provided that only one deer may be antlerless and that antlerless deer may be taken only from November 1 - November 30.

Harvest and Hunting Pressure

Hunting and harvest data for the 1976 season were obtained from harvest ticket report cards and the reminder letters sent to non-responding harvest ticket holders.

In Southeastern Alaska, 7,124 deer harvest tickets were issued for the 1976 season; 2,714 (38.1%) of these were not returned. Of those reports returned, 25.8 percent of the hunters indicated that they did not hunt deer in 1976.

In Unit 1A, 207 deer (21% females) were reported taken during the 1976 season. The average number of hunting days for successful hunters was 4.8 and for unsuccessful hunters was 3.4.

In Unit 2, 103 deer (11% females) were taken. Hunter success was slightly less in Unit 2, where successful hunters averaged 4.9 days and unsuccessful hunters averaged 4.3 days.

Chronology of the harvest in Unit 1A shows that 66 percent of the harvest occurred in November, the month in which one antlerless deer was allowed in the bag. November is also the peak of the rut, when chances for hunter success are improved. Only 6 percent of the kill occurred in August and 14 percent occurred in both September and October.

In Unit 2 the harvest was distributed somewhat more evenly. August, September, October and November accounted for 15 percent, 24 percent, 19 percent, and 41 percent, respectively.

Gravina Island was once again the most heavily hunted area in sub-unit 1A. Of the total for unit 1A, thirty-eight percent of all bucks and 29 percent of all does were harvested on Gravina Island, and 26 percent of the total hunting effort was expended there.

Composition and Productivity

No data were collected during 1976.

Management Summary and Recommendations

The winter of 1976-77 was one of the mildest on record and essentially no snow accumulated below 500 feet elevation. Many alpine areas had snow cover for only a small part of the winter. As a result of the weather, the winter mortality transects were not walked in spring 1977. Three deer carcasses examined in March and April indicated the deer were in excellent condition with good fat reserves.

The harvest during 1976 in Unit 1A was down 35 percent from 1975 and in Unit 2 dropped 42 percent. These decreases were partially, if not totally, the result of lack of snow during the 1976 season.

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DEER

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Units 1B and 3 - Petersburg-Wrangell Area

Seasons and Bag Limits

Unit 1(B)	Sept.1-Nov.30	One antlered deer
Unit 3	No open season	

Harvest and Hunting Pressure

Based on harvest report data, 27 hunters took seven deer in Subunit 1B in 1976, compared to 31 hunters taking nine deer in 1975. Each of the successful hunters in 1976, spent one day hunting while unsuccessful hunters spent an average of 4.3 days hunting.

Although the deer season has been closed in Unit 3 since 1974, 15 persons reported hunting in Unit 3 and taking 10 deer in 1976. After review of the original harvest reports submitted by these hunters, it appears that most probably hunted in other game management units but recorded the area hunted as Unit 3.

Composition and Productivity

No signs of deer mortalities were observed on established mortality transects in the spring of 1977. Pellet groups, deer tracks or recently browsed shrubs were observed on some transects indicating a slight recovery of the deer population, however, most areas were similar to 1975-76.

Management Summary and Conclusions

The deer population level in Subunit 1B appears to be similar to last year's and on the mainland of S.E. Alaska deer populations are rarely abundant.

Two local trappers were hired for approximately two months to trap wolves on Kupreanof, Mitkof, Wrangell and Etolin Islands in the winter of 1976-1977. Trapping success was low due to very limited amounts of snow during the winter. There are signs that deer populations, in some areas of Unit 3, are slowly recovering from their recent low levels and that the wolf population is being further reduced. Predator control efforts should be continued to enable the depressed deer population in Unit 3 to recover more rapidly.

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DEER

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Unit 1C - Juneau

Seasons and Bag Limits

Aug. 1-Dec. 31

Four deer; provided that antlerless deer may be taken only from Sept. 15-Dec. 31.

Harvest and Hunting Pressure

Harvest ticket returns for the 1976 deer season indicate that 430 hunters bagged 98 deer, a 15.6 percent hunter success rate. These figures are based on a 64.4 percent return of harvest report cards by Juneau residents and a 66.1 percent statewide return. A summary of harvest statistics for Unit 1C is contained in Appendix I. Statistics on the harvest of deer by Juneau hunters in Units 1 through 4 are found in Appendix II.

Significant hunting pressure was restricted to three major areas in Unit 1C: 1) the mainland area behind Juneau (Point Bishop to Berners Bay), where 81 hunters bagged 13 deer (8.6% hunter success); 2) Douglas Island, where 246 hunters bagged 57 deer (17.1% hunter success rate); 3) the Lynn Canal Islands, where 44 hunters bagged 25 deer (34.1% hunter success).

The most popular areas for Juneau residents were in the following descending order: 1) Admiralty Island - 535 Juneau hunters killed 315 deer (35.9% hunter success rate); 2) Douglas Island - statistics presented above; 3) Chicagof Island, excluding Peril Strait - 152 hunters killed 104 deer (40.5% hunter success rate); 4) the mainland behind Juneau (statistics presented above); 5) the Lynn Canal Islands (statistics presented above).

Compared to the 1975 season, the deer harvest from Unit 1C decreased 59 percent (from 238 to 98 deer), and the harvest of deer by Juneau residents decreased from 1,730 to 539 (68.8%). The significant decreases in harvest and hunter success ratios were due primarily to unusually warm weather and lack of sufficient snowfall to force deer to low elevations, where they are more easily taken by hunters.

The previous three winters were mild and deer in Unit 1C should be relatively abundant during the 1977 season. No change in seasons or bag limits is recommended for the 1977-78 regulatory year.

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APPENDIX I: 1976 Unit 1C Deer Harvest and Hunting Pressure as Derived From Hunter Report Cards 1/

Area	Sex of Harvest			Total Harvest	Successful Hunters	Total Hunters	% Success
	Male	Female	Unknown				
Cape Fanshaw to Taku River	0	0	0	0	0	4	00.0
Taku River to Eldred Rock	10	3	0	13	7	81	8.6
Douglas Island	32	24	1	57	42	246	17.1
Lynn Canal Islands	8	12	5	25	15	44	34.1
1C Unknown	1	1	1	3	3	54	5.6
Total Unit 1C	51	40	7	98	65	429	15.1

1/ Based on a 66.1% return of report cards.

APPENDIX II: 1976 Deer Harvest and Hunting Pressure by Juneau Hunters in GMU's 1-4. 1/

Area	Sex of Harvest			Total Harvest	Successful Hunters	Total Hunters	% Success
	Male	Female	Unknown				
Unit 1A	1	1	0	2	2	7	28.6
Unit 1B	0	0	1	1	1	2	50.0
Unit 1C	42	38	7	87	60	352	17.0
Unit 1 Unknown	1	1	1	3	3	19	15.8
Unit 2	0	0	0	0	0	6	0.0
Unit 3	1	1	0	2	2	2	100.00
*Admiralty Is.	196	115	4	315	192	535	35.9
*Chicagof Is.	75	25	4	104	62	152	40.5
*Baranof Is.	10	4	1	15	11	41	26.8
Kruzof Is.	1	0	0	1	1	6	16.7
Peril Strait	1	3	0	4	4	13	30.8
Unit 4 Unknown	5	0	0	5	4	15	26.7
Totals	333	188	18	539	342	1150	32.6

1/ Based on a 64.4% return of hunter report cards.

* Excluding Peril Straits

DEER

SURVEY-INVENTORY PROGRESS REPORT - 1976-1977

Game Management Unit 4 - Admiralty, Baranof, Chichagof, and Adjacent Islands

Seasons and Bag Limits

Unit 4, that portion of Admiralty Island including all drainages into Frederick Sound and Stephens Passage on southeast Admiralty Island between Pleasant Bay and Point Gardner	Aug.1-Nov.30	Four deer, provided that antlerless deer may be taken only from Nov.1-Nov.30
Remainder of Unit 4	Aug.1-Dec.31	Four deer, provided that antlerless deer may be taken only from Sept.15-Dec.31

Harvest and Hunting Pressure

The 1976 Unit 4 deer harvest as measured by harvest ticket returns was 1,475 animals - 991 males, 447 females, and 37 sex unspecified. Chronologically 4.2 percent of the harvest was taken in August, 4.8, 16.1, 39.0, and 29.7 in September, October, November, and December, respectively. Hunters failed to give the date of kill on 6.3 percent of the harvest. Sitka hunters took 37.1 percent of the Unit 4 deer harvest and 96.3 percent of their total harvest from Unit 4. Juneau hunters took 30.1 percent of the Unit 4 harvest and 81.0 percent of their harvest from Unit 4. Petersburg, Wrangell, and Ketchikan, the other large population centers of southeast Alaska, took 7.5, 2.1, and 1.2 percent, respectively, of the Unit harvest and 94.1, 58.5, and 7.1 percent, respectively, of their total harvest from Unit 4. Combined, residents of these communities took 78.1 percent of the Unit 4 deer harvest. The smaller communities of Hoonah, Angoon, Pelican, Elfin Cove, Tenakee, Kake, and Port Alexander took most of their deer from Unit 4, which accounted for about 20 percent of the Unit 4 deer harvest. These communities, where contact with personnel of the Alaska Department of Fish and Game is minimal, perhaps show less factual total harvest figures than do the large communities.

Hunter success in Unit 4 during 1976 was 44.1 percent. There were 2,132 persons who reported hunting in Unit 4. These persons hunted a reported 10,687 days.

These harvest figures are based on a 66 percent return of all harvest tickets issued.

Composition and Productivity

No precise data have been gathered that would properly describe the trend of the Unit 4 deer population. Many dozens of contacts with active hunters as well as my own observations suggest that there was minimal fawn survival during the winter of 1975-1976. Additionally, these sources indicate that fawn production was low in the spring of 1976. If these observations are correct, a year of minimal survival followed by a year of low production combined with the heavy hunter harvest of 1975 would strongly suggest a lowered population. These are direct impacts of winter severity.

The winter of 1976-1977 was perhaps the least severe with respect to temperatures and snowfall of any on record for southeast Alaska. In Sitka, only once was the ground ever snow covered and that lasted for less than 24 hours. With no snow to concentrate deer on the beaches where they are readily visible, reliable population assessments were not possible.

Winter mortality transects were conducted over 13 of the 23 established units during late spring of 1977. Commitments to higher priority projects precluded reading all transects. No instances of winter mortality were observed. It is noteworthy that deer were present at low elevations throughout the Unit during late spring even though they were not forced there by snow. Deer were readily observable on beaches. It was possible to approach these deer to very close range by skiff for observation. As spring progressed, the deer appeared to decline in body condition. This was a surprising observation in view of the fact that those hunter killed deer I observed in late December were in excellent condition with heavy fat reserves, and the winter was so mild.

Gross observations of the beach fringe vegetation made in early spring showed a considerable improvement in forage availability (less deer use) over previous years. This would be the result of the snow-free winter together with the suspected lowered deer population.

Management Summary and Conclusion

The Unit 4 deer population appears to be healthy and the range only slightly less than fully stocked. As I have cautioned in recent years (see 1974 and 1975 Unit 4 Deer S&I reports), a conservative approach toward late season hunting should be taken if the deer become concentrated on the beaches by deep snow. This is especially true in the Sitka area where the hunting population has increased considerably through the expansion of the U.S. Coast Guard facility and through an alarming increase in the number of small, fast, recreational boats.

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DEER

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Unit 5 - Yakutat

Seasons and Bag Limits

Unit 5	Aug. 1 - Dec. 31	Four deer; provided that antlerless deer may be taken only from Sept. 15 - Dec. 31.
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Harvest and Hunting Pressure

Deer hunter reports indicate that 4 people hunted deer and all were unsuccessful in 1976. Based on my observations and discussions with hunters in Yakutat, 19 to 25 individuals hunted deer in Unit 5, all unsuccessfully. Low hunter success was probably due to lack of snow and poor hunting conditions during the open season.

Composition and Productivity

No data were gathered on the composition or productivity of the Unit 5 deer herd.

Management Summary and Conclusions

In Unit 5 deer are present in low densities along the south and east mainland shore and islands of Yakutat Bay. The range is restricted and accessible by boat.

Recommendations

No changes are recommended for the 1977 season. Reductions in season length and bag limits should be considered for the 1978 season.

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DEER

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Unit 6 - Prince William Sound

Season and Bag Limits

Aug. 1 - Dec. 31

Four deer; provided that antlerless deer may be taken only from Sept. 15-Dec. 31

Harvest and Hunting Pressure

Harvest information was gathered from statewide hand-compiled harvest report data and from interviews with 100 Cordova hunters. A comparison of the data is given in Appendix I. According to the harvest report data 219 hunters took 189 deer whereas 379 Cordova hunters took 412 deer. Hunter success was 46 percent statewide as compared to 23 percent for local hunters. Statewide harvest data revealed the majority of deer were taken in November and December off Montague Island. Cordova hunters primarily hunted Hawkins Island in December.

Composition and Productivity

Age data were obtained from 70 deer jaws taken by Cordova hunters:

Age*	<u>F</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5+</u>	<u>Total</u>
Number	10	24	6	8	5	17	70
Percent	14.3	34.3	8.6	11.4	7.1	24.3	100.0
Born in Spring of	1976	1975	1974	1973	1972	1971	
First Winter	76-77	75-76	74-75	73-74	72-73	71--	

* Age was determined by tooth eruption and wear.

Management Summary and Conclusions

Analysis of the age data indicates a good age distribution of the Prince William Sound deer population and the occurrence of a fairly mild winter in 1975-1976.

The 1976 deer harvest from Unit 6 was below par because of hunting conditions, not because of lack of animals. Foul weather (wind and rain) from September through December discouraged hunting. Also, snow did not concentrate deer along the beach fringe during the hunting season.

Discrepancies between statewide harvest report data and the Cordova hunter interview data points out the obvious lack of compliance by hunters in returning their harvest report cards.

Recommendations

Retain the present season and bag limits.

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APPENDIX I

1976 Deer Harvest Data

Unit 6

		<u>Harvest Report Data</u>		<u>Cordova Interview*</u>	
		<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>
License Buyers		UNK		807	100.0
License Buyers not hunting		UNK		428	53.0
Hunters Afield		219		379	47.0
Successful Hunters		100	45.7	186	23.0
Deer Harvested		189		412	
Males Harvested		109	57.7	218	53.0
Deer per Hunter Afield		2.2		1.1	
Days per Deer		UNK		3.7	
Total Days Hunted		UNK		1541	
Harvested:	1 deer	48	48.0	65	35.0
	2 deer	26	26.0	57	30.7
	3 deer	15	15.0	24	12.9
	4 deer	11	11.0	40	21.5
Chronology:	August	8	4.2	24	5.8
	September	10	5.3	65	15.7
	October	36	19.0	65	15.7
	November	71	37.6	65	15.7
	December	54	28.6	194	47.0
	Unknown	10	5.3		
Location:	Mainland	4	2.1	16	3.9
	Hawkins	51	27.0	202	49.0
	Hinchinbrook	24	12.7	113	27.4
	Montague	83	43.9	49	11.9
	Other	15	7.9	32	7.8
	Unknown	12	6.4	0	0

* Personal interviews with 100 Cordova license holders. Harvest figures extrapolated from 12 percent sample of Cordova license buyers.

PREPARED BY: Julius Reynolds, Game Biologist III

DEER

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Unit 8 - Kodiak and Adjacent Islands.

Seasons and Bag Limits

Unit 8, that portion of Kodiak Island draining into Ugak Bay east of a line from the mouth of Saltery Creek to Crag Point and west of Pasagshak River.	Aug.1-Nov.30	One deer, provided that antlerless deer may be taken only from Sept.15-Dec.31.
Unit 8, remainder of Kodiak Island east of the Saltery Creek-Crag Point line.	Aug.1-Oct.31	One deer, provided that antlerless deer may be taken only from Oct.1-Oct.31.
Remainder of Unit 1	Aug.1-Dec.31	Four deer, provided that antlerless deer may be taken only from Sept.15-Dec.31.

Harvest and Hunting Pressure

Harvest information was collected by telephone interviews with 185 (8.7%) of the 2,118 Kodiak hunting license buyers. When extrapolated, these interviews indicated that 1,030 hunters took 1,111 deer in 1976 (Appendix 1). Eight hundred-thirteen males (73%) and 298 females (27%) comprised the indicated harvest. Fifty-one percent of the hunters were successful in 1976. The indicated 1976 harvest is up slightly from that recorded in 1975 (Appendix 2). Only 4 percent of the harvest was taken during August and September (Appendix 3). More than two-thirds of the harvest was taken during the last two months of the season.

The Zachar Bay-Uyak Bay subunit showed an indicated harvest of 229 deer in 1976, or 21 percent of the Unit 8 total (Appendix 4). The previous high for this subunit was 79 animals (7%) in 1973. The deer population has increased rapidly in this area within the last five years and the Uyak, Zachar and Larsen Bay drainages probably have the highest density of deer in Unit 8. Deer sightings are becoming common in the Deadman Bay, Olga Bay and Karluk Lake drainages, areas in which deer sightings were rare five years ago. Only 10 percent of the indicated harvest was taken in the northeastern corner of Kodiak Island generally accessible by road. Afognak Island sustained 26 percent of the harvest.

Interest in hunting deer in Unit 8 by mainland Alaskan hunters appears to be increasing. Information compiled from 1975 harvest

reports indicates that 18 percent of the harvest that year was taken by hunters not residing in Unit 8. With present short seasons on moose and caribou elsewhere in the state, Kodiak's liberal bag limit and lengthy deer season will continue to attract additional hunters each year.

Composition and Productivity

No sex or age composition data were collected in 1976.

No evidence of winter mortality was found while walking 11.5 miles of beach fringe in Zachar Bay, Discoverer Bay (Afognak Island), Ugak Bay and Chiniak Bay areas during April, May and June. Several deer observed along the north coast of Afognak Island during April 1976 appeared to be in good condition despite near complete snow cover to sea level. Overwinter mortality was apparently light.

Hunters generally reported deer to be more abundant in 1976 than during the preceeding season.

Management Summary and Recommendations

Deer numbers are steadily increasing in the southwestern part of Kodiak Island. Although harvests did increase over previous years in the heavily populated Zachar and Uyak Bay drainages, it is unlikely that sport hunting sufficient to impact herd growth will materialize in the near future. Relative inaccessibility of most of Unit 8, severe weather and high transportation expenses will probably continue to limit the extent of increased hunting pressure.

Public interest in having an area accessible by road open later in the season resulted in the opening of the Pasagshak River to Saltery River drainages into Ugak Bay during November for bucks-only hunting. The area received only light hunting pressure and negligible harvest as deer remained scattered in the absence of significant snow during the season.

Hunting effort should be directed into areas with high deer population including Uyak, Zachar, and Spiridon Bays. Although it is unlikely that hunting can arrest the present growth trend before overuse of winter range occurs, liberal seasons and bag limits should be maintained to encourage harvest.

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APPENDIX I

Unit 8 - Deer Harvest Statistics, 1976*

	<u>No.</u>	<u>Percent</u>
License Buyers	2,118	---
*License Buyer Interviews	185	8.7%
License Buyers Not Hunting	1,088	51%
Hunters Afield	1,030	49%
Females Harvested	298	27%
Males Harvested	813	73%
Total Deer Harvested	1,111	100%
Hunter Success	527	51%
Days Per Deer	3.8 days	---
Deer Per Hunter Afield	1.54	---
Deer Per Successful Hunter	2.11	---
Total Days Hunted	4,259	---
Number and Percent Hunters Taking:		
One deer	217	41%
Two deer	126	24%
Three deer	92	17%
Four deer	<u>92</u>	<u>17%</u>
Total	527	100%

* From telephone hunter interviews; harvest figures extrapolated from 8.7% sample of Kodiak hunting license buyers.

PREPARED BY: Roger B. Smith, Game Biologist III

APPENDIX II

Unit 8 - Deer Harvest Statistics, 1969 - 1976

	1969	1970	1971	1972	1973	1974	1975	1976
Number of Hunters:	1,441	658	925	689	1,127	1,141	1,068	1,088
Number of Deer Harvested:	1,420	870	915	587	1,166	1,754	1,057	1,111
Hunter Success:	43%	55%	45%	46%	47%	61%	47%	51%
Average No. of Deer per Hunter:	1.0	1.3	1.0	.85	1.0	1.5	1.0	1.5
Average No. of Hunting Days per Deer:	6.3	2.4	4.5	5.2	5.0	3.7	4.8	3.8

APPENDIX III

Unit 8 - Chronological Distribution of Deer Harvest, 1976*

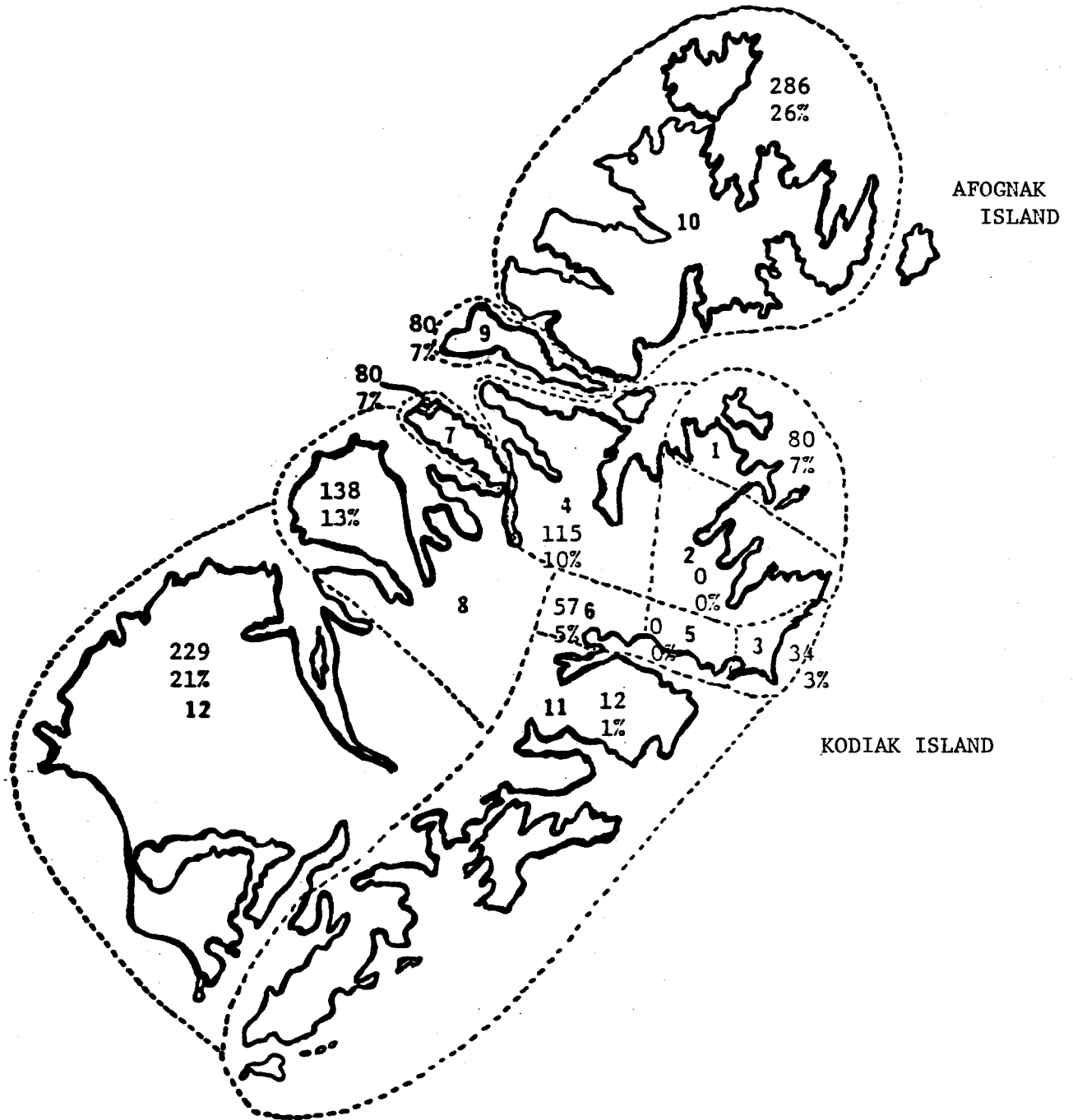
	<u>AUG.</u>	<u>SEPT.</u>	<u>OCT.</u>	<u>NOV.</u>	<u>DEC.</u>	<u>TOTAL</u>
Number	23	23	309	412	344	1,111
Percent	2%	2%	28%	37%	31%	100%

* From telephone hunter interviews; harvest figures extrapolated from 8.7 percent sample of Kodiak hunting license buyers.

PREPARED BY: Roger B. Smith, Game Biologist III

APPENDIX IV

Unit 8 - Distribution of Deer Harvest by Subunit, 1976



PREPARED BY: Roger B. Smith, Game Biologist III

MOUNTAIN GOAT

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Subunit 1A - Ketchikan

Seasons and Bag Limits

August 1 - December 31

One goat

Harvest And Hunting Pressure

Goat harvest ticket returns for the 1976 season show 55 reporting hunters took 15 goats (33% females) in Subunit 1A. The 1976 Subunit 1A harvest was down 12% from the 1975 harvest and 68% from the 1974 harvest. Data from the harvest ticket program for the 1972-1976 seasons are summarized below:

Season.	Goat Harvest				Hunters Taking 2 Goats .	Per Cent Harvest By Non-Res..	Number Successful Hunters .	Total # Hunters	Per Cent Hunter Success
	MM .	FF .	Unk. .	Total.					
1972	23	23	2	48	6	--	42	117	36
1973	36	20	4	60	10	22	50	133	38
1974	26	19	2	47	10	13	37	109	34
1975	8	9	-	17	0*	24	17	93	18
1976	10	5	-	15	0*	0	15	55	27

* Bag limit reduced from 2 to 1 in 1975.

The Subunit 1A kill represented 15 percent of the total Unit 1 harvest for 1976. Subunit 1A accounted for 13 percent of the harvest in 1975 and 22 percent in 1974.

Chronology of the goat harvest for 1A indicates that the later portion of the season was again important. The November 1 - December 4 period, in which 47 percent of the harvest occurred, was the most productive. Two goats (13 percent) were taken in August, four goats (27 percent) in October, and one goat in December.

Forty percent of the 15 goats taken came from the Rudyerd-Walker-Chickamin area and 40 percent came from the Yes Bay-Reflection Lake area. Only one goat was taken south of Smeaton Bay.

Of all reporting hunters in Unit 1A, 74 percent used aircraft for transportation and the remainder used boats. There was no difference in use of aircraft or boats between successful and unsuccessful hunters.

Successful hunters averaged 3.0 days in the field, while unsuccessful hunters averaged 3.1 days. The maximum length hunt recorded was seven days.

Composition and Productivity

Most of the survey areas covered in 1975 were again flown in September 1976. Past survey results and maps of the routes have been included in past reports (Wood, 1974 and Wood, 1975).

The best populations were again in the Unuk River-Rudyerd Bay area. Survey K-9 (Klahini River to Chickamin River) produced 61 goats per hour of survey and 27 kids per 100 adults were classified. The Chickamin River to Walker Cove (K-10) appeared to have the highest density of goats with 86 per hour of survey. The Walker Cove-Rudyerd Bay area (K-11) had 74 goats per hour. Both K-10 and K-11 routes had 31 kids per 100 adults recorded.

The southern areas remained low. Twenty-six goats per hour were seen on the K-4 route (Wilson Arm-Boca de Quadra) with 39 kids per 100 adults, while the K-5 route (Marten Arm-Portland Canal) showed 29 goats per hour and 18 kids per 100 adults.

The Rudyerd Bay-Smeaton Bay area (K-3) was flown for the first time since 1971 and 27 goats per hour of survey were seen. Thirty-one kids per 100 adults were recorded.

All surveys were flown between September 1 and September 11 in a Piper PA-12, generally in late evening (between 7:00 and 9:00 P.M.) and in the upper half of the alpine area. Contours were followed as closely as possible. Both the observer's and the pilot's observations were recorded, and the same pilot and plane have been used for virtually all surveys conducted since 1968.

Management Summary and Conclusions

The 1976 harvest was about the same as last year. The number of hunters dropped 41 percent, however, and hunter success rose from 18 percent to 27 percent in 1976.

Overall survey results from comparable areas indicated a slight decrease in the goat population. In 1975, 52.9 goats were seen for each hour of survey time, while in 1976, the number of goats per hour dropped to 47.8. The kids per 100 adults ratio also declined somewhat, from 31.4 in 1975 to 25.8 in 1976. Apparently the population is still declining.

Winter 1976-1977 was exceedingly mild and winter mortality should have been very light.

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PREPARED BY:

Robert E. Wood
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SUBMITTED BY:

Robert E. Pegau
Regional Research/Management Coordinator

MOUNTAIN GOAT

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Unit 1B - Southeast Mainland, Cape Fanshaw to
Lemesurier Point

Seasons and Bag Limits

Subunit 1B

Aug.1-Dec.31 One goat

Harvest and Hunting Pressure

Harvest ticket returns for the 1976 season indicated that 54 people hunted goats in Subunit 1B. Twenty-three hunters were successful and bagged 13 male and 10 female goats, an increase from a total of 15 taken in 1975. The 43 percent success rate was a considerable improvement over the 29 percent recorded in 1975. Of the 23 successful hunters, only one was a nonresident.

Chronology of the harvest showed a nearly evenly divided harvest during August, September and October which was similar to 1974 and 1975.

Transportation used by successful hunters consisted of airplanes (61%) and boats (39%). Forty-three percent of the unsuccessful hunters used aircraft and 57 percent used boats.

Successful hunters spent an average of 3.9 days hunting while unsuccessful hunters hunted an average of 2.8 days. The area north of the Stikine River was used 62 percent of the total days hunted in 1B. The LeConte Bay and Horn Cliffs area continues to be the most heavily hunted area, preferred by 5 of the successful hunters and 12 of the unsuccessful hunters.

Composition and Productivity

Aerial surveys were conducted over selected areas primarily in the southern portion of Subunit 1B in August and September 1976. Though the survey area in 1976 is not comparable to 1975, general trends in herd condition can be derived. Kid:adult ratios which indicate herd productivity remained about the same during 1975 and 1976, with ratios of 27:100 and 30:100, respectively.

Three days were spent obtaining counts of goats from the ground in both the Wilkes Range and Patterson Glacier-Muddy River area. Aerial surveys were flown in the same locations after these counts. Forty-four goats were observed during one ground count on August 4 on the Wilkes Range, compared to aerial survey results: August 24-5, August 25-6, and

October 20-27. Similar results were obtained from the Muddy River-Patterson Glacier area, where 19 goats were observed from the ground (1/4 of the area could not be seen by the observer), compared to 3 and 4 goats observed from aircraft. Considerable differences were detected between aerial surveys conducted in August and October.

Management Summary and Conclusions

The 1976 harvest data suggest that the steadily declining hunting pressure and harvest since 1972 may have finally stabilized.

A few areas have shown improved productivity levels, however, overall herd conditions in Unit 1B appear to be stable.

The disparity between the number of goats observed from the ground and those seen during aerial surveys, and comparison of aerial surveys of the same areas at different times of the year, indicates that greater effort should be made to determine the accuracy of different survey methods.

The reported harvest levels from all areas in GMU 1B should not adversely effect goat populations.

Recommendations

Seasons and bag limits should remain unchanged.

PREPARED BY:

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SUBMITTED BY:

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MOUNTAIN GOAT

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Unit 1(C) - Juneau

Seasons and Bag Limits

Unit 1(C), that portion draining into Lynn Canal, Stephens Passage and Taku Inlet between Antler River and Taku Glacier	Oct.1-Nov.30	One goat
Remainder of Unit 1(C)	Aug.1-Dec.31	One goat

Harvest and Hunting Pressure

Harvest ticket returns for 1976 indicate that 107 hunters bagged 41 goats, 32 percent of which were males. Overall hunting pressure was lower than in the previous 4 years, harvest declined by 40 percent (68 in 1975 to 41 in 1976), and hunter success decreased by 11 percent, to 38 percent successful hunters in 1976.

The Chilkat Range (Excursion Inlet to Eldred Rock) received approximately one half as much hunting pressure as in 1975; the harvest was reduced from 3 goats to 1. The harvest of goats in the Juneau area (Berners Bay to Norris Glacier in Taku Inlet) declined by 50 percent, and the number of hunters decreased slightly from 47 in 1975 to 41 in 1976. The Stephens Passage area (Taku River to Cape Fanshaw) received 22 percent less hunting pressure and had a 33 percent reduction in the number of goats taken compared to 1975.

A decrease in the availability of goats in recent years and adverse fall weather conditions in 1976 are the primary reasons for a reduced harvest and lower hunter success.

Composition and Productivity

Aerial surveys and ground surveys were conducted in selected locations throughout Unit 1(C) in 1976. The results of 4 aerial surveys were presented in the 1975 S&I Report. In addition, an aerial survey of Lions Head Mountain was conducted on July 9. Twenty-seven goats were observed, including 12 adults and 8 kids (67 kids per 100 adults).

During late July and August, in an attempt to obtain more precise composition counts, observers were transported by helicopter to various locations considered representative of Unit 1(C) goat populations. A total of 152 goats, 127 adults and 25 kids (19.7 kids per 100 adults) was observed. In four of 8 areas wolves or wolf tracks and droppings were noted; in these areas only 24 adults and one kid were observed, compared to 103 adults and 24 kids in the remaining 4 areas.

Management Summary and Recommendations

Hunting pressure and harvest continued to decline in Unit 1(C) for the third consecutive year. Goat populations vary throughout the area, with moderate levels in some areas and low levels in other areas compared to 1973. Ground surveys indicate that wolf predation may be influencing some goat populations.

No changes in seasons or bag limits are recommended.

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SUBMITTED BY:

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MOUNTAIN GOAT

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Unit 1D - Haines/Skagway

Seasons and Bag Limits

Unit 1(D), that portion lying east of Taiya Inlet and River between Chilkoot Trail and White Pass & Yukon Railroad	No open season	
Unit 1(D), that portion lying between Chilkoot Inlet and Katzehin River on the east, and Chilkat Inlet and River and Klehini River on the west	Sept. 15-Nov. 30	One goat
Remainder of Unit 1(D)	Aug. 1-Dec. 31	One goat

Harvest and Hunting Pressure

The 1976 goat harvest of 17 animals was 49 percent less than the 35 animals taken in 1975. Hunting pressure was down slightly from 77 to 65 hunters, while hunter success decreased from 45 percent in 1975 to 26 percent in 1976. Hunting pressure increased near Skagway and east and west of the Haines Highway but decreased substantially south of Haines along Lynn Canal.

The 1976 season was the same as the 1975 season, which had been shortened adjacent to transportation corridors near Haines and Skagway and which established a closed area adjacent to the Skagway-Carcross Highway. The reductions in harvest and hunter success in 1976 is attributable primarily to the fact that weather conditions, which significantly influence hunter effort and success, were adverse during much of the season.

Composition and Productivity

Aerial goat surveys were conducted in two small areas in 1976. The Skagway River drainage was surveyed on July 6. Twenty-four goats were counted (20 adults, 4 kids, 20 kids/100 adults) in 44 minutes (33 goats/hour). The area between the Katzehin River and Sinclair Mountain east of Lynn Canal was surveyed on June 16 and on July 9. The early survey revealed 18 goats (16 adults, 2 kids, 13 kids/100 adults) while 17 goats (12 adults, 5 kids, 42 kids/100 adults) were observed during the July 9 survey.

Management Summary and Conclusions

Data from harvest tickets show that season restrictions are effectively reducing goat harvests near Skagway and along the Haines Highway. Within that portion of Unit 1(D) having the Sept. 15-Nov. 30 open season, several areas receive little hunting pressure and contain moderate to high numbers of goats. Recommendations to liberalize the season in these lightly hunted areas were presented in the 1975 Goat S&I Report. No additional changes in seasons or bag limits are recommended at this time.

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MOUNTAIN GOAT

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Unit 4 - Admiralty, Baranof, Chichagof, and Adjacent Islands

Seasons and Bag Limits

Unit 4	Aug. 1-Dec. 31	One goat by permit only. Conditions of permit shall be described by commissioner's announcement.
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Harvest and Hunting Pressure

The 1976 Unit 4 goat hunt was regulated by means of registration permits. The purpose of the registration permits was to provide timely harvest data so that the kill from the northern portion of Baranof Island could be limited, if necessary.

One hundred seventy-five permits were issued on a first come, first serve basis. Permits were issued only at the Sitka office of the Department. In addition to checking in and receiving a permit, permittees were required to check back out. Of the permittees, 157 were residents of Sitka and Mt. Edgecumbe, 12 were residents of other Alaskan communities, and 6 were nonresidents. Sixty-eight permittees (39 percent) did not hunt. In addition, five persons returned harvest tickets indicating they had hunted in Unit 4 but had not obtained a permit, so the total reported number of hunters who participated in the Unit 4 goat hunt was 112.

Analysis of the returned permits shows the Unit 4 goat kill to have been 27 animals, 18 males and 9 females. Chronologically, 4 were taken in August, 13 in September, 9 in October, and 1 in December. Residents of Sitka and Mt. Edgecumbe took 22 animals, while residents of other Alaskan communities took the remaining 5.

Although each permittee was required to read the permit and sign it with the understanding that return of the permit was required, 24 persons failed to return their permits. The names of these persons were given to the Division of Fish and Wildlife Protection. Officer Robert Boutang did a commendable job of obtaining compliance from the delinquent permit holders, one of whom had taken a female goat in September. His kill brings the total 1976 Unit 4 goat kill to 28 animals.

The permit system allowed for a good comparison with the results of harvest return tickets. Harvest ticket returns showed that 100 persons hunted goats in Unit 4. These 100 persons reported harvesting 26 goats, 16 males and 10 females. Chronologically, 3 goats were reported taken in August, 13 in September, 8 in October, 1 in December, and 1 date unknown. Residents of Sitka and Mt. Edgecumbe took 22 of the kills and other Alaskan residents took the remaining 4. The hunter who did not voluntarily return his permit sent in his harvest ticket, so his kill is included in this total.

A comparison of the two harvest-measuring systems is shown in Appendix I. Generally there is close agreement among those categories of data useful for management purposes. Probably one reason for the high degree of agreement is that a large percentage of harvest tickets were turned in and filled out at the time the registration permit was returned. The greatest benefit of the permit system is that a timely assessment of the harvest can be kept. Harvest ticket results were not available until six months after closure of the season. Of course, there are also public relations benefits to be derived from talking to each individual hunter. From the hunter's standpoint, the necessity of visiting an office during regular business hours to secure a permit is an additional bother.

All 28 of the known kills were from the northern portion of Baranof Island. Ten of these kills occurred in the Rosenberg Lake area. Harvest ticket returns showed transport methods utilized by successful hunters was 13 (50%) by aircraft, 11 (42%) by boat, and 2 (8%) unspecified. Among unsuccessful hunters 26 (35%) traveled by aircraft, 28 (38%) by boat, and 5 (7%) by "other". The method of transportation was not asked of the permittees.

The total kill of 28 goats is the same as that of the previous year. It is probably an average figure over the past few years. The number of hunters appears to be higher, perhaps because of the greater effort to obtain compliance with the harvest ticket and permit hunt requirements.

Composition and Productivity

An extensive survey was conducted over the northern portion of the Baranof Island goat range in August 1976. A total of 242 goats was counted. Inclement weather - primarily air turbulence - aborted several attempts to conduct surveys over the southern portion of Baranof Island. The total of 242 goats is the highest number of animals ever tallied for the northern portion of the island. Forty-seven of the goats seen were kids-of-the-year, for a ratio of 24.1 kids per 100 adults. That is almost identical to the 24.6 kids per 100 adults observed during the last survey (1973).

The high number of goats seen (62 per hour) probably does not represent an increase in the goat population. Rather, survey conditions were excellent, and the observer was more familiar with the area than on previous surveys.

It is estimated that a minimum of 300 goats inhabit Baranof Island north of the Vodopad River.

Management Summary and Conclusion

The mountain goat population in Game Management Unit 4 is in a healthy condition. The herd appears to have occupied all suitable range and has probably remained stable for many years. Climatic and topographic conditions make goat hunting difficult, and it has traditionally

been pursued mostly by residents of Sitka and Mt. Edgecumbe. To date, hunting pressure and resultant harvests have apparently not been excessive. Recent human population growth (a result of expansion of the U.S. Coast Guard installation in Sitka) may increase hunting pressure. The permit system now in effect can adequately regulate the kill. The sport kill should not exceed 10 percent (currently, approximately 30 animals) from the northern portion of Baranof Island.

Recommendations

Annual aerial surveys should be conducted prior to the season opening to provide a yearly population baseline. The permit system can then be adjusted to insure that the harvest does not exceed 10 percent.

No changes in seasons or bag limits are recommended.

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SUBMITTED BY:

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Regional Research/Management Coordinator

Appendix I. Comparison of agreement between registration hunt and harvest ticket data using the 27 successful voluntary permittee reports as base. 1976. Game Management Unit 4.

	<u>Permit</u>	<u>Harvest Reports</u>	<u>Number Discrepancies</u>	<u>Percent Agreement</u>
Total Kill*	27	26	1	96
Days Hunted**	27	18	9	66
Location of Kill***	27	22	5	82
Sex of Kill	27	26	0	100
Date of Kill****	27	20	7	74
Number of Participants*****	107	100	7	94

*Actual kill is 28 so neither is correct.

**One day was the maximum disagreement.

***Includes unknown data. Three gave different names for same location.

****To within 7 days.

*****Actual hunters only.

In addition to those areas of disagreement noted above some other areas of disagreement were:

1. Persons returning harvest ticket but not registering in at Sitka 5
 2. Persons who checked out but who did not register 2
 3. Permittees who did not return harvest tickets 76
 4. Number of persons in item 3 who did not hunt 56
 5. Persons who took goat without permit 1
 6. Successful permittees who did not return harvest ticket 2
-

MOUNTAIN GOAT

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Unit 5 - Yakutat

Seasons and Bag Limits

Aug. 1 - Dec. 3

One Goat

Harvest and Hunting Pressure

Hunter report forms indicate that seven goats were harvested by 22 hunters (32% success) in 1976. Six goats were taken near Icy Bay by residents and one by a nonresident from the Alsek River region. The low harvest and hunting pressure was due primarily to adverse fall weather conditions and decreased availability of goats south of Yakutat in recent years.

Composition and Productivity

Within GMU 5 adjacent to Icy Bay, goat herds are semi-isolated on several groups of low mountains. On August 4, 1976, 71 goats were counted on the Chaix Hills (60 adults and 11 kids; 18 kids per 100 adults) and 79 goats were observed on Karr Hills (64 adults and 15 kids; 24 kids per 100 adults) for a total of 150 (124 adults and 26 kids). On September 29, 1976, 48 goats (no age determination made) were observed on the Guyot Hills for a total of 198 in the Icy Bay area. In 1972, 190 goats were counted in these three areas, indicating that the population has remained constant in recent years. Goats are also present north of the Malaspina Glacier in the Samovar and Hitchcock Hills.

Goat surveys were conducted between Beasley Creek and Auke Lake on September 24, 1976, and from Auke Lake to the Alsek River on October 23, 1976. A total of 108 goats were observed (91 adults, 17 kids; 19 kids per 100 adults). Within that portion between Harlequin Lake and the Alsek River 87 of the goats were observed, a small increase over the 1973 count of 63 goats but still substantially low in comparison to the 1971 count of 283.

Developments

Clearcut logging at Icy Cape is posing an immediate and future threat to the well-being of the goat population in the Icy Bay region - directly, by the loss of winter range, and, indirectly, by improved hunter access. The impacts are expected to become more acute as logging progresses westward along the coastal mountains toward the Yakataga area. Region I and Region II biologists are cooperating in this area to evaluate habitat loss and to gather population data necessary to manage and monitor this goat herd.

Outer Continental Shelf oil exploration and development and the associated increases in activity both onshore and by various governmental agencies

in the North Gulf Coast region will represent a potential problem to the management of goat herds when increasing human demand for goats exceeds the ability of the population to provide sufficient animals. The increased use of helicopters for geological, geophysical and survey work may already have had some adverse effects on goat populations.

Management Summary and Recommendations

Population surveys in portions of Unit 5 indicate that the goat herd is stable or possibly increasing slightly. Hunting pressure and harvest have been low because of availability of goats adjacent to established access points south of Yakutat and to adverse fall weather conditions. The potential for increased harvest as well as adverse impacts on populations and habitat is increasing and will be closely monitored. No changes in season length and bag limits are recommended at this time.

PREPARED BY:

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SUBMITTED BY:

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Research/Management Coordinator

MOUNTAIN GOAT

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Unit 6 - Prince William Sound

Seasons and Bag Limits

Aug.1-Dec.31

One goat

Harvest and Hunting Pressure

During the 1976 mountain goat season in Unit 6, 123 goats were taken: 74 males (60.2%) and 49 females (39.8%). The 1976 harvest is 25 percent smaller than the 1975 harvest but is similar in composition and compares favorably with previous harvests (Appendix I).

The area from Valdez Arm to Rude River produced the most goats (Appendix II) and was the most heavily hunted (Appendix III). The second most popular and productive area was from Kings Bay to Cape Fairfield, with the majority of the harvest coming from Johnstone and Puget Bays. The vast area east of the Copper River was not heavily hunted. Overall hunter success for the unit was 45.6 percent. Resident hunters took 60 percent of the harvest.

Chronology of the harvest (Appendix IV) revealed 93.5 percent of the harvest occurred in August, September and October.

Composition and Productivity

No data available.

Management Summary and Conclusions

Analysis of the harvest data for the past four years (Appendix V) does not indicate any adverse effects of the current regulations.

The reduction of the bag limit from two goats to one and the shortening of the season by one month (January) during 1976 had little effect upon the total harvest. Weather during the last half of the season was not conducive to hunting and is believed to have suppressed the November and December harvests.

Recommendations

Retain the current season and bag limit.

PREPARED BY:

SUBMITTED BY:

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Game Biologist III

John S. Vania
Regional Management Coordinator

APPENDIX I

Unit 6

Mt. Goat Harvest by Year and Sex

	MALE		FEMALE		UNKNOWN		TOTAL	
	No.	Percent	No.	Percent	No.	Percent	No.	Percent
1972	49	63.6	27	35.1	1	1.3	77	100.0
1973	93	67.4	43	31.2	2	1.4	138	100.0
1974	88	70.4	35	28.0	2	1.6	125	100.0
1975	99	60.4	62	37.8	3	1.8	164	100.0
1976	74	60.2	49	39.8	0	0.0	123	100.0

Prepared by: Julius Reynolds, Game Biologist III

APPENDIX II

Unit 6

1976 Mt. Goat Harvest by Sub Unit and Sex

Unit/ Sub Unit	Area	Male	Female	Unknown	Total	Percent
6-01	East of Suckling Hills to Icy Bay	6	0	0	6	4.9
6-02	Bering Lake - Burg Lake Area	8	3	0	11	8.9
6-03	Suckling Hills	0	0	0	0	0.0
6-04	Ragged Mountain	6	3	0	9	7.3
6-05*	Goat Mountain	-	-	-	-	-
6-06	Rude River to Copper River	5	5	0	10	8.1
6-07	Valdez Arm to Rude River	15	13	0	28	22.8
6-08	Valdez Area	5	1	0	6	4.9
6-09	Port Wells - Columbia Glacier	4	7	0	11	8.9
6-10	Unit 6 - Unknown	8	3	0	11	8.9
6-11	Whittier - Port Wells	4	2	0	6	4.9
6-12	Kings Bay to Cape Fairfield	12	12	0	24	19.5
6-13	Prince William Sound - General	1	0	0	1	.8
Unit 6		74	49	0	123	99.9
(Percent)		(60.2)	(39.8)	(0)	(100.0)	

* Not open to hunting.

Prepared by: Julius Reynolds, Game Biologist III

APPENDIX III

Unit 6

1976 Mt. Goat Hunting Pressure by Sub Unit and Class of Hunter

Unit/ Sub Unit	Area	Successful Hunter	Unsuccessful Hunter	Total Hunters	Percent Success
6-01	East of Suckling Hills to Icy Bay	6	4	10	60.0
6-02	Bering Lake - Burg Lake Area	11	7	18	61.1
6-03	Suckling Hills	0	0	0	0.0
6-04	Ragged Mountain	9	10	19	47.4
6-05*	Goat Mountain	-	-	-	-
6-06	Rude River to Copper River	10	20	30	33.3
6-07	Valdez Arm to Rude River	28	32	60	46.7
6-08	Valdez Area	6	14	20	30.0
6-09	Port Wells - Columbia Glacier	11	7	18	61.1
6-10	Unit 6 - Unknown	11	20	31	35.5
6-11	Whittier - Port Wells	6	11	17	35.3
6-12	Kings Bay to Cape Fairfield	24	13	37	64.9
6-13	Prince William Sound - General	1	9	10	10.0
Unit 6		123	147	270	
(Percent)		(45.6)	(54.4)	(100.0)	

* Not open to hunting.

APPENDIX IV

Unit 6

Chronology of 1976 Mt. Goat Harvest*

<u>Month</u>	<u>Number</u>	<u>Percent</u>
August	39	31.7
September	41	33.3
October	35	28.5
November	7	5.7
December	1	.8
<hr/>		
Total	123	100.0
<hr/>		

* Hand compiled.

Prepared By: Julius Reynolds, Game Biologist III

APPENDIX V

Mt. Goat - Unit 6

IBM Harvest Ticket Data

<u>ITEM</u>	<u>1973-74</u>	<u>1974-75</u>	<u>1975-76</u>	<u>1976</u>
1. Total Harvest	138	125	164	123
2. Percent Males in Harvest	67.4	70.4	60.4	60.2
3. Total Hunters	280	238	251	270
4. Percent Hunter Success	41.1	46.2	55.0	45.6
5. Percent Hunters taking 2 goats	8.2	6.3	10.4	---*
6. Percent harvest: August, September, October	68.2	72.8	71.4	93.5**
7. Valdez Arm to Copper River				
Percent Harvest	42.8	39.2	48.8	30.9
Percent Hunters	38.6	34.8	43.3	33.3

* Bag limit reduced to one goat.

** Season reduced by one month (January).

Prepared By: Julius Reynolds, Game Biologist III

MOUNTAIN GOAT

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Unit 7 - Seward

Seasons and Bag Limits

Unit 7, that portion south and east of Ellsworth Glacier and the stream flowing from Ellsworth Glacier into Day Harbor and that portion south and west of Bear Glacier.

Aug.10-Dec.31 One goat by permit only. Conditions of the permit to be described by Commissioner's Announcement.

Unit 7, that portion west of a line along Sixmile Creek from its mouth near Hope to the Seward Highway, along the Seward Highway to Ptarmigan Creek; north of a straight line from Porcupine Island to the head of Upper Russian Lake; east of the Russian River from Upper Russian Lake to Kenai River and north of the Kenai River from the confluence of Russian River to the Unit 15 boundary.

No open season

Remainder of Unit 7.

Sept.20-Oct.10 One goat by permit only. Conditions of the permit to be described by Commissioner's Announcement.

Harvest and Hunting Pressure

Two hundred-fifty hunters reported harvesting 67 mountain goats during the 1976 season. The hunter success rate was 27 percent, down from 35 percent in 1975 (Appendix I). The number of hunters afield has changed little from 1974 (256) and 1975 (236) levels. Twenty-eight percent (19 of 67) of the harvest was taken by nonresident hunters. Twelve percent of all hunters were nonresidents.

The harvest comprised 38 males, nearly unchanged from 1974 and 1975 levels of 36 and 37. Twenty-nine females were taken, a decline of 34 percent from 44 in 1975. The 1976 take was composed of 57 percent males, well up from 42 percent in 1975, and slightly above the five-year mean of 55 percent. Successful hunters averaged 2.5 days of hunting to bag a goat. Of these, residents averaged 2.0 and nonresidents 3.7 days. Unsuccessful hunters spent a mean of 2.6 days afield.

A comparison by count area of harvest to goats recorded on the most recent survey indicates that harvest exceeded the 10 percent sustained yield level only in count area 10 (Appendix II). The seven goats taken equalled 12 percent of the 1976 survey total of 60.

Mean age of harvested goats was four years for the 57 animals whose horn annuli were examined. However, six goats from hunt area 7-22 showed a mean age of 7.5, indicating a relatively unexploited population.

Twenty-six of 67 goats were taken during the period October 1-10; no animals were harvested after October 27. Other peaks occurred in mid-August, early and late September. Heavy snowfall at the end of October curtailed late season hunts.

Composition and Productivity

Count areas 5, 6 and 10 were surveyed in 1976 (Appendix II and III). In area 5, six hours of survey effort yielded 154 goats, of which 39 (25%) were kids. This represents an increase of 280 percent over the 1975 count of 43. Goats commonly move into and out of this area. Count area 6 has demonstrated a gradual decline from 1971 to present. Fourteen adults and four kids were recorded in 1976, compared to 24 and 9 in 1971. Area 10 increased 42 percent from 1974 (42) to 1976 (60). Thirteen kids (22%) were recorded in the 1976 count.

Fifty percent (28 of 57) of the known age take was composed of pre-reproductive goats, aged three years or less.

Management Summary and Conclusions

Use of permits coupled with a 20 day season in accessible portions of Unit 7 has reduced the harvest to an acceptable level. Current data are inadequate to ascertain if the gradual decline in goat numbers has yet bottomed out.

Management by unlimited permit with concomittant potential for emergency closure appears to control harvest adequately. It only partially provides for optimum harvest however, since hunter distribution is not directly correlated to goat populations. Limited permits are not warranted at this time.

Recommendations

No changes are recommended at this time.

PREPARED BY:

SUBMITTED BY:

David M. Hardy
Game Biologist II

John S. Vania
Regional Management Coordinator

Mountain Goat - GMU 7 - Seward

Appendix I

Goat Harvest Unit 7 Total

<u>Year</u>	<u>Males</u>	<u>%</u>	<u>Females</u>	<u>%</u>	<u>Unk.</u>	<u>%</u>	<u>Total</u>	<u>Hunters</u>	<u>Percent Success</u>
1969 ¹	52	67	24	31	2	2	78	---	--
1972 ²	68	54	57	45	2	2	127	305	44
1973	93	56	71	43	2	1	166	501	33
1974	36	56	25	39	3	5	64	256	25
1975	37	42	44	53	2	2	83	236	35
1976	38	57	29	43	0	0	67	250	27

¹ Based upon multi-species questionnaire on harvest report packet; believed to be low total.

² Harvest tickets and reports for goats were initiated July 1, 1972. Harvest questionnaires were discontinued in 1971 and hunter response was so poor in 1970 data were not tabulated.

Prepared by: Dave M. Hardy, Game Biologist II

Mountain Goat - GMU 7 - Seward

Appendix II

Reported harvest by year, data of latest surveys, number of adults and kids observed by count area.

Count Area	Reported Harvest			Goats Observed		Survey Date	1976 harvest as Percent of Numbers Observed
	1974	1975	1976	Adults	Kids		
1	4	2	0	0	0	1974	0
2	2	2	2	22	5	1974	7
3	5	1	0	28	10	1974	0
4	7	1	3	47	12	1975	5
5	9	7	9	115	39	1976	6
6	2	2	1	14	4	1976	6
7	4	1	2	54	19	1973	3
8	10	21	13	115	41	1974	8
9	1	7	3	46	16	1972	5
10	5	3	7	47	13	1976	12
11	4	1	0	29	11	1968	0
12 ¹	0	0	0	44	13	1973	0
13 ¹	0	1	0	0	0	1974	0 ²
14 ¹	0	0	0	2	0	1974	0
15	0	0	0	11	4	1974	0
17	9	5	9	72	30	1974	9
19 ¹	0	0	0	8	1	1968	0
20 ¹	0	0	0	5	3	1974	0
26	0	2	0	12	4	1974	0
27	1	5	1	61	26	1969	1
28 ³	0	0	1	23	3	1973	4
29 ³	0	0	2	--	--	----	-
30	3	8	8	Unsurveyed		----	-
31	0	3	4	49	18	1974	6
Unk.	1	10	2	--	--	----	-
Total	67	82	67	791	267		

¹ No open season

² This area has been surveyed annually since 1968 and no goats have been observed. Goats reported killed in this area are most likely misreported.

³ This area lies principally in GMU 15.

Prepared by: Dave M. Hardy, Game Biologist II

Mountain Goat - GMU - Seward

APPENDIX III

Mountain goat numbers and age ratios, 1968-1976.

Year	Count area 4	Count area 5		Count area 8		Combined Areas	
	Kids/ 100 AD	Total Animals	Kids/ 100 AD	Total Animals	Kids/ 100 AD	Total Animals	Kids/ 100 AD
1968	35.2	207	22.4	60	38.2	170	34.5
1969	28.6	144	37.8	120	Not surveyed	Not surveyed	32.2
1970	27.0	155	23.5	105	32.3	217	28.6
1971	26.8	90	30.6	64	19.5	147	23.9
1972	17.8	86	37.9	80	25.0	150	25.9
1973	Not surveyed		Not surveyed		Not surveyed		--
1974	Not surveyed		39.9	117	35.6	156	37.2
1975	22.5	87	22.8	43	Not surveyed		--
1976	Not surveyed	154	34		Not surveyed	154	34

PREPARED BY: Dave M. Hardy, Game Biologist II

MOUNTAIN GOAT

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Unit 8 - Kodiak and Adjacent Islands

Seasons and Bag Limits

Sept. 1-Oct. 30

One goat, up to 15 goats
by permit only. Conditions
of the permit to be described
by commissioner's announcement.

Harvest and Hunting Pressure

Three goats (one female and two males) were taken in 1976 (Appendix I). This was the lowest harvest since goat hunting began in 1968 (Appendix II). Twenty-six of 48 permittees reported hunting. Hunter success dropped to 12 percent.

The three goats harvested were aged by counting horn annuli. The male was four years old. The two females included one kid and one five-year-old animal. All three goats were taken on the eastern side of the Wild Creek drainage into Ugak Bay.

The Crown Mountain drainages into Ugak Bay were closed to hunting in 1976. During the previous three years approximately 85 percent of the harvest (42 goats) was taken in this area. The closure of this easily accessible area may partly explain the low hunter success in 1976. Hunters were unfamiliar with adjacent, less accessible, hunting areas. September rains and unseasonably cold late October weather further depressed goat hunting success.

Composition and Productivity

Aerial composition surveys, flown in August and September, indicated relatively good production of 26 kids for a 38:100 kid/adult ratio (Appendix III). Sixteen separate sightings of groups or individual goats were made in the two surveys. All but seven of the 94 goats observed were in the Ugak Bay or upper Kizhuyak Bay drainages. These seven goats were all adults. The southernmost sighting was of a lone goat in the upper Barling Bay drainage.

In the Crown Mountain area, which was closed to hunting in 1976, only two of the 23 goats observed were kids. This indicates a 10:100 kid/adult ratio for that area. Excessive harvest in previous years is suspected to have depressed production there.

No mortality other than hunter harvest was recorded in 1976.

Management Summary and Recommendations

Most of the Kodiak Island goat population inhabits the upper Ugak Bay drainages. Although scattered sightings have been made throughout the higher mountainous terrain in the central and southern part of Kodiak Island, these animals are characteristically adults without kids. There appears to be much suitable habitat which a significant number of goats have not yet occupied.

Although the number of goats observed in annual aerial surveys generally increased through the 1960's, a plateau in population growth appears to have been reached by the early 1970's. Until goat herds become established in adjacent sparsely populated areas, the Ugak Bay drainages will continue to produce most of the goats.

The annual harvest should not exceed 15 animals unless an upward population trend is indicated. If necessary, specific hunting areas should be considered in the future to achieve even distribution of the harvest.

The Crown Mountain drainages into Ugak Bay should remain closed to hunting for another season. If reopened in the future, permits should be limited to prevent overharvest.

PREPARED BY:

Roger B. Smith
Game Biologist III

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

APPENDIX I

Unit 8 - Mountain Goat Harvest Statistics, 1976*

	<u>No.</u>	<u>Percent</u>
Permits Issued	48	100%
Permit Holders Reporting	43	90%
Reporting Permit Holders Who Hunted	26	60%
Successful Hunters	3	12%
Mean Days Hunted Per Successful Hunter	4	--
Males Harvested	2	67%
Females Harvested	1	33%
Total Harvest	3	100%
Mean No. Goats Sighted By Hunters	7	--

* From hunter interviews

Prepared By: Roger B. Smith, Game Biologist III

APPENDIX II

UNIT 8 - MOUNTAIN GOAT HARVEST STATISTICS, 1968 - 1976

Date	Season Dates	Number Permits Issued	Number Hunters Afield	Percent Hunter Success	Number Goats Harvested	Conditions of the Hunt
1968	Sept. 1-30	10*	9	67%	6 (3 M, 3 F)	10 goats by permit; public drawing
1969	Sept. 1-30	10*	11	55%	6 (5 M, 1 F)	10 goats by permit; public drawing
1970	Sept. 1-30	15	8	63%	5 (4 F, 1 UKN)	15 goats by permit; public drawing
1971	Sept. 1 - Oct. 30	25	8	50%	4 (1 M, 3 F)	15 goats by permit; public drawing
1972	Sept. 1 - Oct. 30	40	21	48%	10 (3 M, 4 F, 3 UKN)	15 goats by permit; To be closed by field announcement
1973	Sept. 1 - Oct. 30	32	26	58%	15 (7 M, 8 F)	15 goats by permit; To be closed by field announcement
1974	Sept. 1 - Oct. 30	58	28	57%	16 (5 M, 10 F, 1 UKN)	15 goats by permit; To be closed by field announcement
1975	Sept. 1 - Oct. 30	66	36	28%	10 (5 M, 5 F)**	15 goats by permit; To be closed by field announcement
1976	Sept. 1 - Oct. 30	48	26	12%	3 (2 M, 1 F)	15 goats by permit; To be closed by field announcement

* 5 additional alternate permits issued

** One additional male killed by hunter without permit

PREPARED BY: Roger B. Smith, Game Biologist III

APPENDIX III

UNIT 8 - Mountain Goat Sex and Age Composition Counts, 1952-1976

Date	Adult (may include sub-adults)	Kid	Total	Kid/100 Adult	% Kids in Total Count	Observer	Flight Time (Hrs)
1952-1953	7 males and 11 females, total 18 animals transplanted to Crown Mountain.						
1954	Zero Data						
1955	Zero Data						
1956	-	-	5			Unsigned, undated report.	
1957	2	2	4	100.0	50.0	"	
1958	4	2	6	50.0	33.3	"	
9-19-1959	5	2	7	40.0	28.6	Will Troyer	--
1960	Zero Data						
1961	Zero Data						
1962	14	8	22	57.1	36.3	Will Troyer	--
1963	18	8	26	44.4	30.7	Will Troyer	--
1964	13	13	26	100.0	50.0	Will Troyer	--
1965	22	13	35	59.0	37.1	Will Troyer	--
9-20-1966	38	16	54	42.1	29.6	B. Ballenger	--
9-05-1967	39	19	58	48.8	32.7	B. Ballenger	--
12-20-1968	57	14	71	24.5	19.7	B. Ballenger	2.2
8-05-1969	73	15	88	20.5	17.0	B. Ballenger	2.4
8-22-1970	61	20	81*	32.7	24.7	B. Ballenger	--
1971	Zero Data						
7-27-1972	64	27	91	42.1	29.7	B. Ballenger	2.3
9-18-1973	88	24	112	27.3	21.4	R. B. Smith	1.9
8-18/19-1974	37	12	49	32.4	24.5	R. B. Smith	5.3
8-18/19-1975	41	6	47	14.6	12.8	R. B. Smith	Foot Survey
8-12/9-5-1976	68	26	94	38.2	27.6	R. B. Smith	5.3

*"Much snow cover on high elevations, goats hard to spot." - B. Ballenger

PREPARED BY: Roger B. Smith, Game Biologist III

MOUNTAIN GOAT

SURVEY-INVENTORY PROGRESS REPORT FOR REGULATORY YEAR 1976-77

Game Management Unit 11 - South side of Wrangell Mountains and eastern portion of Chugach Mountains

Seasons and Bag Limits

Unit 11	Sept. 1-Dec. 31	One goat
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Harvest and Hunting Pressure

Sixty five hunters harvested 27 mountain goats (16 males - 59%, 10 females - 37% and 1 unknown sex - 4%) during the 1976 season. Harvest report data for Unit 11 from 1972 through 1976 are compared in Appendices I and II. The 1976 mountain goat harvest was 10 more than the 1975 harvest. This represents an increase of 59 percent above the 1975 level. However, the 1976 harvest was 45 percent less than the average harvest from 1972 through 1974 when the season opened on August 10.

The average number of days required to harvest a mountain goat in Unit 11 decreased in 1976 (3.8) when compared to 1975 (6.5). The mean number of days spent hunting by unsuccessful hunters was 4.3 in 1976. This was the lowest reported from 1972 to 1976 (Appendix I).

A comparison of the harvest by subunits (not shown) suggests the distribution of the goat harvest correlated more with areas receiving heavy sheep hunting pressure than with areas containing more abundant goat populations. This reinforces an assumption that goats may serve as an alternate game species for many hunters who are primarily after sheep.

Composition and Productivity

MacColl Ridge has been selected as a sheep and goat trend count area. The 1975 survey revealed 13 goats (12 adults and 1 kid). However, the survey was conducted during marginal weather conditions and is not felt to represent the current status of the population. During the 1976 November moose composition counts Donohoe Peak was flown over revealing 26 adults and 4 kids.

Management Summary and Conclusions

Overall, the harvest of 27 goats is light for the large areas where goats are found in Unit 11. The well distributed harvest suggests that mountain goats were taken as an alternate species by hunters primarily after sheep.

One inherent problem with harvest data on goats is the unrecorded kill by cripple-loss and irretrievable animals which may constitute a significant addition to known harvest mortality.

The higher percentage of males compared to females in the harvest for the past four years may indicate that hunters are still able to select males from a lightly hunted population.

The decline in the harvest during the 1975 and 1976 seasons compared to the average harvest of 1972 through 1974 is primarily attributed to the change in the opening date of the season from August 10 to September 1 and the reduced bag limit.

Recommendations

- 1) No change in season or bag limit is recommended.
- 2) Aerial surveys are recommended for the MacColl Ridge as a trend area.
- 3) Collection of data should be discontinued in areas within the proposed National Parks if management authority of game is withdrawn from the State.

PREPARED BY:

Ted Spraker
Game Biologist II

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

APPENDIX I. A Comparison of Mountain Goat Harvest Data for Unit 11 from 1972 through 1976.

	<u>1972</u>	<u>1973</u>	<u>1974</u>
Total Hunters:	64	94	105
Number Successful Hunters (%):	32(50%)	55(60%)	44(42%)
Mean Number Days Hunted,			
Successful (sample size):	3.2(32)	4.5(49)	3.7(41)
Unsuccessful (sample size):	5.2(32)	5.8(38)	6.7(47)
Number Goats Killed:	37	59	52
Male Goats Harvested (%):*	13(35%)	36(61%)	27(52%)
No. Hunters Killing 2 Goats			
(% of successful):	5(16%)	4(7%)	8(18%)
Unknown Sex (%):	0	0	1(2%)
	<u>1975</u>	<u>1976</u>	
Total Hunters:	49	65	
Number Successful Hunters (%):	17(35%)	27(42%)	
Mean Number Days Hunted,			
Successful (sample size):	6.5(15)	3.8(26)	
Unsuccessful (sample size):	7.3(6)	4.3(34)	
Number Goats Killed:	17	27	
Male Goats Harvested (%):*	11(65%)	16(59%)	
No. Hunters Killing 2 Goats			
(% of successful):	0**	0**	
Unknown Sex (%):	0	1(4%)	

* Percentage male goats = (MM/MM+FF) x 100.

** Bag limit reduced to one during 1975 season.

PREPARED BY: Ted Spraker, Game Biologist II.

APPENDIX II. A Comparison of the Chronologies of the Unit 11 Mountain Goat Harvests from 1972 through 1976 When Specified on Harvest Report.

<u>Period</u>	<u>1972 Harvest</u>		<u>1973 Harvest</u>	
	<u>No.</u>	<u>Percent</u>	<u>No.</u>	<u>Percent</u>
Aug. 10-20	13	35%	7	12%
Aug. 21-31	10	27%	9	15%
Sept. 1-10	8	22%	16	27%
Sept. 11-20	4	11%	11	19%
Sept. 21-30	0	0%	9	15%
After Sept. 30	2	5%	3	5%
Date Unknown	0	0%	4	7%
Total	37		59	

<u>Period*</u>	<u>1974 Harvest</u>		<u>1975 Harvest</u>		<u>1976 Harvest</u>	
	<u>No.</u>	<u>Percent</u>	<u>No.</u>	<u>Percent</u>	<u>No.</u>	<u>Percent</u>
Aug. 8-21	12	23%	0	0%	0	0%
Aug. 22-Sept. 4	3	6%	1	6%	1	4%
Sept. 5-18	13	25%	5	29%	0	0%
Sept. 19-Oct. 2	9	17%	5	29%	0	0%
After Oct. 2	14	27%	4	24%	4	15%
Date Unknown	1	2%	2	12%	22	81%
Total	52		17		27	

* Recording periods were changed to follow the recording system of IBM printout in 1974.

** Opening date was changed to September 1.

PREPARED BY: Ted Spraker, Game Biologist II

MOUNTAIN GOAT

SURVEY-INVENTORY PROGRESS REPORT FOR REGULATORY YEAR 1976-77

Game Management Unit 13 - Drainages of the Upper Susitna, Matanuska, Nenana, Delta and western half of the Upper Copper River drainages.

Seasons and Bag Limits

Aug. 10 - Dec. 31

One goat

Harvest and Hunting Pressure

Goat harvest, hunting pressure and success ratio in Game Management Unit 13 dropped during the 1976 season as indicated by data in Appendix I. Appendix II shows the goat harvest in the Tazlina-Tonsina area.

Composition and Productivity

Surveys of the Chugach Range portion of Unit 13 are shown in Appendix III. These data indicate a reduction of goats in the Tazlina-Tonsina area. Although previous counts have been conducted, kid ratios are not reliable and are of limited value since male and female goats cannot be accurately determined from aerial surveys. An additional survey of goat habitat in the Tazlina-Klutina area where no goats had previously been observed resulted in observations of four goats.

Management Summary and Conclusions

Present data indicate a reduction in harvest and in total goat numbers in Game Management Unit 13. Most reduction occurred in the Tazlina-Tonsina area. Goat counts in conjunction with sheep counts over large areas may tend to reduce the accuracy of the count.

Recommendations

1. Establish a goat trend area in the Tazlina-Klutina area which should be annually counted.
2. Reduce goat harvests and hunting pressure and manage populations on an area basis.

PREPARED BY:

SUBMITTED BY:

Sterling Eide
Game Biologist III

John Vania
Regional Management Coordinator

APPENDIX I. Unit 13 Goat Harvest Data, 1972-76.

<u>Year</u>	<u>Total Harvest</u>	<u>No. Hunters</u>	<u>Success Ratio</u>	<u>No. Males(%)</u>
1972	19	43	44%	13(68%)
1973	12	34	35%	9(75%)
1974	16	62	26%	9(56%)
1975	24	67	36%	14(58%)
1976	12	52	23%	7(58%)

Prepared By: Sterling Eide, Game Biologist III

APPENDIX II

Harvest Location (When Specified) of Mountain Goats in Unit 13

	<u>1972 Harvest</u>		<u>1973 Harvest</u>	
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
Chugach Mountains,				
Tiekel River-Kimball Pass:	2	11%	0	0%
Klutina-Tonsina:	2	11%	0	0%
Tazlina-Nelchina:	6	32%	4	33%
S. Fork Matanuska-Coal Cr.:	6	32%	1	8%
Talkeetna Mountains:	0	0%	0	0%
Chulitna Hills:	0	0%	1	8%
Unknown Kill Location:	3	16%	6	50%
Totals	19		12	
	<u>1974 Harvest</u>		<u>1975 Harvest</u>	
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
Chugach Mountains,				
Tiekel River-Kimball Pass:	1	6%	0	0%
Klutina-Tonsina:	8	50%	8	33%
Tazlina-Nelchina:	0	0%	2	8%
S. Fork Matanuska-Coal Cr.:	5	31%	8	33%
Talkeetna Mountains:	0	0%	0	0%
Chulitna Hills:	0	0%	0	0%
Unknown Kill Location:	2	12%	6	25%
Totals	16		24	
	<u>1976 Harvest</u>			
	<u>Number</u>	<u>Percent</u>		
Chugach Mountains,				
Tiekel River-Kimball Pass:	1	8%		
Klutina-Tonsina:	0	0%		
Tazlina-Nelchina:	2	17%		
S. Fork Matanuska-Coal Cr.:	6	50%		
Talkeetna Mountains:	2	17%		
Chulitna Hills:	0	0%		
Unknown Kill Location:	1	8%		
Totals	12			

Prepared by: Sterling Eide, Game Biologist III

APPENDIX III. Goat Surveys Conducted in Chugach Mountains Portion of Unit 13.

	<u>1959</u>	<u>1968-69</u>	<u>1976</u>
Coal Creek to Nelchina Glacier	--	22	28
Nelchina Glacier - Tazlina Glacier	--	26	18
Tazlina Glacier to Klutina Glacier	15	71	7
Klutina Glacier - Richardson Hwy.	--	9	1
Richardson Highway - Copper River	--	4	8
 Total Chugach		132	62

Prepared By: Sterling Eide, Game Biologist III

MOUNTAIN GOAT

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Subunits 14A and 14B

Seasons and Bag Limits

Subunit 14A - North of the Matanuska River	No Open Season	
Subunit 14A - Remainder of Subunit	Sept.21-Nov.15	One goat by permit only. Conditions of the permit to be described by Commissioner's Announcement.
Subunit 14B	Aug.10-Nov.15	One goat.

From 1967 through 1972, the season in Unit 14 was August 10 through November 15, with a bag limit of one goat. During 1975, that portion of 14A north of the Matanuska River was closed to goat hunting. In 1976, in Subunit 14A south of the Matanuska River, the season was shortened by 18 days, opening on September 21 instead of September 3.

Harvest and Hunting Pressure

Mountain goat harvests for Subunits 14A and 14B during 1972 through 1976 are given in Appendix I. The harvest for both subunits has been light. Nearly equal numbers of males and females were reported harvested. For the second time in five years, a goat was reported taken in Subunit 14B.

Hunting pressure, hunter success and the average number of days hunted in Unit 14 are compared for the years 1972 through 1976 in Appendix II. Hunting pressure increased slightly but was still lower than any year since 1972, except 1975. There was also a slight increase in the percentage of successful goat hunters in 1975. The mean number of days hunted by successful hunters had decreased slightly each year from 1972 until 1975, when the mean increased 1.5 days. In 1976 the overall mean days hunted increased to 6 from the previous high of 4 in 1975.

Composition and Productivity

Age composition surveys were conducted in July 1976 and reported in the 1975 survey and inventory report. A comparison between the 1973 and 1976 surveys (Appendix III) revealed an increase in the herd from 30 in 1973 to 46 in 1976. The percentage of kids increased slightly from 16.7 percent in 1973 to 17.4 percent in 1976. The number of goats seen per hour increased from 2.3 per hour in 1973 (by Supercub) to 3.0 per hour in 1976 (by Jet Ranger Helicopter). No new goat surveys have been completed since July 29, 1976.

Management Summary and Conclusions

A reduction in season in Subunit 14A from September 3 to September 21 (18 days) had little effect on the goat harvest in this area. The goat population is in an inaccessible portion of Subunit 14A, and hunters may now be realizing that it takes a longer period of hunting to be successful in this area. The present low hunter pressure and harvest is acceptable but must be continually monitored because of the large human population in Unit 14. With the implementation of the permit system, monitoring the harvest will be relatively simple.

Recommendations

No changes in seasons or bag limits are recommended. It is possible that future land claims under ANCSA will require revision in seasons. A goat survey should be flown in Subunit 14A in 1979. A goat harvest ticket system should be implemented in Unit 14.

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Game Biologist III

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

Appendix I. Goat Harvest by Subunit and Sex in Game Management Unit 14,
1972 through 1976.

Year	Subunit 14 A				Subunit 14 B				Subunits 14A and 14B
	Male		Female		Male		Female		
	No.	Percent	No.	Percent	No.	Percent	No.	Percent	
1972	1	50%	1	50%	1	100%	0	0%	3
1973	2	40%	3	60%	0	0%	0	0%	5
1974	1	50%	1	50%	0	0%	0	0%	2
1975	1	100%	0	0%	0	0%	0	0%	1
1976	1	100%	0	0%	1	100%	0	0%	2

PREPARED BY: Jack C. Didrickson
Game Biologist III

Appendix II. Goat Hunter Success in Alaska's Game Management Unit 14, 1972 through 1976.

	1972	1973	1974	1975	1976
Total Hunters:	50	47	36	23	33
Successful Hunters	6 (12%)	11 (23%)	3 (8%)	2 (9%)	5 (15%)
Unsuccessful Hunters	44 (88%)	36 (77%)	33 (92%)	21 (91%)	28 (85%)
Mean Days Hunted: ^{a/}					
Successful Hunters	2.7 (6)	2.6 (11)	2.5 (11) ^{b/}	4.0 (2)	6.0 (5)
Unsuccessful Hunters	4.2 (41)	3.6 (29)	3.7 (28) ^{b/}	2.0 (10) ^{c/}	2.9 (28) ^{d/}

^{a/} Sample size in parentheses.

^{b/} One successful and five unsuccessful hunters did not specify days hunted.

^{c/} Sixteen unsuccessful hunters did not specify days hunted.

^{d/} One unsuccessful hunter did not specify days hunted.

PREPARED BY: Jack C. Didrickson
Game Biologist III

Appendix III. A Comparison of Age Composition Surveys of Mountain Goats in Game Management Unit 14,
June 29, 1973 and July 27-29, 1976.

Area	Year	Number			Kid/100 Adults	Percent Kids	Count Time, Hrs.	Goats per Hr.	Survey Vehicle
		Adult	Kid	Total					
A	1973	6	2	8	33.3	25.0%	2.0	4.0	Super Cub
B	1976	13	4	17	30.8	23.5%	3.8	4.5	Super Cub
B	1973	18	3	21	16.7	14.3%	3.3	6.4	Super Cub
	1976	18	4	22	22.2	18.2%	2.5	8.8	Jet Ranger
C	1973	1	0	1	0.0	0.0%	2.6	0.4	Super Cub
	1976	6	0	6	0.0	0.0%	2.6	2.3	Jet Ranger
D	1973	0	0	0	----	----	2.8	---	Super Cub
	1976	1	0	1	0.0	0.0%	2.6	0.4	Jet Ranger
D	1973	0	0	0	----	----	1.3	---	Super Cub
	1976	0	0	0	----	----	0.8	---	Jet Ranger
F	1973	0	0	0	----	----	2.7	---	Super Cub
	1976	0	0	0	----	----	1.8	---	Jet Ranger
Total	1973	25	5	30	20.0	16.7%	13.3	2.3	
Total	1976	38	8	46	21.1	17.4%	15.5	3.0	

A - Grasshopper Valley east to Subunit 14A boundary.

B - Metal Creek to Grasshopper Valley.

C - Friday Creek north to Metal Creek.

D - Friday Creek north to first main unnamed creek above Wolverine Creek.

E - Main unnamed creek above Wolverine Creek east to Carpenter Creek.

F - Carpenter Creek to Coal Creek.

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MOUNTAIN GOAT

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Unit 15 - Western Kenai Peninsula

Season and Bag Limit

August 10 - December 31

One goat

Harvest and Hunting Pressure

Harvest report returns for the 1976-77 season indicate that 178 hunters harvested 67 goats. Of the total, 41 (61%) were males and 26 (39%) were females. Harvest data are summarized in Appendices I and II.

Hunter success during the 1976-77 season was 38 percent. Success has been on a downward trend since 1972 when it was 50 percent (Appendix II). The number of hunters afield declined 10 percent from the 1975-76 season level of 198.

Goat hunting during the 1976-77 season was by permit only. Permits were unlimited and were available throughout the season. Successful hunters were required to present the horns of their goat at a Fish and Game office within five days of kill, and to answer a hunt questionnaire.

For purposes of managing the hunt, the unit was divided into 13 hunt areas corresponding to survey areas. Prior to the hunt, Areas 7-5, 7-6, 15-1, 15-3 and 15-4 were closed to goat hunting because of low numbers. Areas 15-12 and 15-13 were closed to goat hunting on September 25 because the desired harvest had been taken.

Successful hunters averaged 2.5 days hunting. Forty-five percent of all hunters reported hunting for trophies, 41 percent for meat and 9 percent for both sport and meat. Forty-seven percent of all successful hunters reported that they could tell the sex of the animal they killed before they shot it. All successful hunters indicated that they did not wound or lose a goat. Successful hunters saw an average of 13 goats.

The average age of goats harvested was 3.6 years for males and 4.8 years for females. Age and horn measurements are presented in Appendix IV.

Composition and Productivity

A summary of Unit 15 census data is presented in Appendix II. Five count areas have been censused since 1975 (Appendix III). Numbers observed declined an average of 10 percent in the four areas where surveys were complete. In count area 29, where the survey covered approximately 40 percent of the land mass, 77 goats were

observed compared to 193 in 1972. Extrapolation from these data indicates a population of approximately 192 goats, virtually unchanged from the 1972 level.

Management Summary and Conclusions

Goat numbers in Unit 15 appear to have remained relatively stable over the past five years in the areas surveyed. Exceptions may be in count areas 21, 22 and 32. Few goats have been observed in areas 21 and 22 since surveys were initiated in 1968. In count area 32, the first survey was conducted in 1975. It is believed that goat numbers there were reduced before surveys were initiated.

The 1976 harvest was near the maximum allowable level in most areas. It was necessary to close two areas, 15-12 and 15-13, to prevent excessive harvest.

The present permit system allows continued analysis of the harvest through the season and areas can be closed by field announcement if danger of overharvest occurs. The use of field announcement closures, however, greatly complicate the regulations for hunters. News releases describing field announcement closures seldom appear in the news in a timely fashion and many hunters do not learn of them.

Recommendations

Goat hunting should be put on a limited permit basis unless the problems involved with emergency closures can be overcome.

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Game Biologist III

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

MOUNTAIN GOAT - GMU 15 - WESTERN KENAI PENINSULA

APPENDIX I

Reported harvest and survey data per hunt area for 1972-1976

Hunt Area	Survey Date	No. of Adults	No. of Kids	Total Goats	Harvest by Year					1976 Percent Harvest of
					72	73	74	75	76	Total Observed Goats
15-1	No Goats	Closed to hunting								
15-2	1976	10	4	19	2	0	0	0	4	28
15-3	1975	1	1	2	2	11	1	6	0 ^{1/}	--
15-4	1975	1	0	1	10	6	9	8	0 ^{1/}	--
15-5	1968	18	7	25					1	4
15-6	1975	46	14	60	14 ^{2/}	12 ^{2/}	17 ^{2/}	24 ^{2/}	5	8
15-7	1977	49	13	62					13	21
15-8	1977								10	--
15-9	1977	101 ^{3/}	35 ^{3/}	136 ^{3/}	21 ^{3/}	16 ^{3/}	22 ^{3/}	11 ^{3/}	8	20 ^{3/}
15-10	1977								9	--
15-11	1976	59	18	77	28	16	17	4	6	8
15-12	1976	43 ^{4/}	17 ^{4/}	60 ^{4/}	10 ^{4/}	8 ^{4/}	10 ^{4/}	7 ^{4/}	3	3 ^{4/}
15-13	1976								2	--
Totals or Mean		328	109	437	96	78	99	85	67	14

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

^{1/} No open season in 1976.^{2/} Data for 15-5, 15-6 and 15-7 combined.^{3/} Data for 15-8, 15-9 and 15-10 combined.^{4/} Data for 15-12 and 15-13 combined.

MOUNTAIN GOAT - GMU 15 - WESTERN KENAI PENINSULA

APPENDIX II

Goat harvest and hunting pressure by Subunit for 1969 and 1972 through 1975.

Year	15(A)			15(B)			15(C)			Unit 15 Total			Number of Hunters	Percent Success
	MM	FF	All	MM	FF	All	MM	FF	All ^{3/}	MM	FF	All ^{3/}		
1969	*	*	*	*	*	*	*	*	*	31	38	69	*	*
1972	0	0	0	11	5	16	41	38	79	52	44	96	160 ^{1/}	50
1973	0	0	0	10	7	17	32	23	56	46	31	78	144 ^{2/}	46
1974	0	0	0	3	5	9	47	35	83	56	41	99	222	44
1975	0	0	0	9	7	16	36	30	66	48	37	85	198	43
1976 ^{4/}	0	0	0	2	2	4	39	24	63	41	26	67	178	38

* Data not available.

^{1/} 16 hunters reported taking two goats each.

^{2/} 12 hunters reported taking two goats each.

^{3/} Includes animals of unknown sex.

^{4/} No opened season in Subunit 15A during 1976.

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

APPENDIX III Summary of goat surveys conducted in GMU 15 by individual count area.

Count Area	Survey Date	No. Adults	No. Kids	Total Number	Kids/100 Adults	Survey Time (Hrs.)	Goats/ Hour	Observer
16	8/17/68	14	4	18	28.6	1.0	18	Perkins
	6/28/73	24	6	30	25.0	1.4	21	LeRoux
	7/24/74	20	9	29	45.0	1.0	29	LeRoux
	8/11/76	10	4	14	40.0	1.2	12	LeRoux
21	7/16/68	0	0	0	0	---	--	Nichols
	7/10/75	1	1	2	100.0	1.3	2	LeRoux
22	6/20/68	7	4	11	57.1	---	--	Nichols
	8/8/72	12	2	14	16.7	---	--	LeRoux
	7/9-10/75	1	0	1	0.0	1.3	1	LeRoux
23A	7/17/68	18	7	25	38.9	---	--	Nichols-Smith
	7/27/72	33	14	47	42.4	1.9	24	Davis
23B	7/18/68	24	14	38	58.3	---	--	Nichols-Smith
	7/26/72	42	16	58	38.1	3.9	15	Davis
	11/4/75	46	14	60	30.4	1.1	54	Ballard
23C	7/18/68	45	18	63	40.0	---	--	Nichols-Smith
	7/28/72	42	14	56	33.3	1.2	47	Davis
	11/4/75	8	4	12	50.0	1.5	8	Ballard
	8/5/77	49	13	62	26.0	---	--	Hardy
24	7/18/68	134	54	188	40.3	---	--	Nichols
	9/11/77	101	35	136	35.0	---	--	Hardy
25	No Surveys Conducted							
29	7/8/72	146	47	193	32.2	5.5	35	Davis
	10/7/75	83	12	95	14.4	4.3	22	Ballard
	8/31-9/10-11/76	59	18	77	30.0	5.0	15	Hardy
32	10/9/75	54	19	73	35.2	3.4	21	Ballard
	8/3-31-9/10/76	43	17	60	40.0	3.3	18	Hardy

1/ Incomplete survey, approximately 40 percent complete.

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

MOUNTAIN GOAT - GMU 15 - WESTERN KENAI PENINSULA

APPENDIX IV

Age and horn measurements for goats taken in the 1976-1977 season.

<u>Sex</u>	<u>Average Age</u>	<u>Average Length mm</u>	<u>Average Circumference mm</u>	<u>Average Spread mm</u>	<u>Sample Size</u>
Males	3.6	210	130	158	41
Females	4.8	204	102	175	23

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

ADDENDUM

MOUNTAIN GOAT

SURVEY-INVENTORY PROGRESS REPORT - 1975

Game Management Subunit 1C - Juneau

Seasons and Bag Limits

Subunit 1C, that portion draining into Lynn Canal, Stephens Passage and Taku Inlet between Antler River and Taku Glacier	Oct. 1 - Nov. 30	One goat
Remainder of Subunit 1C	Aug. 1 - Dec. 31	

Harvest and Hunting Pressure

Harvest ticket returns for the 1975 goat season indicated that 138 hunters bagged 68 goats, of which 61.8 percent was males. Harvest ticket information for the past four seasons is summarized in Appendices I, II, III and IV. Overall hunting pressure during 1975 was lower than the previous 3 years. Total harvest declined 13.2 percent (159 goats in 1974 to 138 goats in 1975). Hunter success increased by 5 percent (44% in 1974 to 49% in 1975).

In 1975 the bag limit was reduced from two to one goat and the season was shortened in the area immediately behind Juneau. The Chilkat Range (Excursion Inlet north to Subunit 1C's boundary at the latitude of Eldred Rock) experienced a much reduced harvest, hunter success was down and there was a noticeable reduction in the number of hunters afield. The goat take for the Chilkat Range in 1972 was 32 hunters bagging 23 goats, in 1973, 43 hunters bagged 30 goats, in 1974, 18 hunters bagged 19 goats, and in 1975, 18 hunters bagged 5 goats (Appendix I).

The Juneau area (that area draining into Lynn Canal, Stephens Passage and Taku Inlet between Antler River and Taku Glacier) had a much shortened season (Oct. 1 - Nov. 30 in 1975 compared to Aug. 1 - Dec. 31 in 1974) and a reduced bag limit. Hunters in this area reported a harvest of 14 goats (56% less than in 1974) by 47 hunters (36% fewer than in 1974), a 7 percent reduction in hunter success (37% in 1974 compared to 30 percent in 1975 [Appendix II]). Salmon Creek and Lemon Creek were the areas of preferred hunter use although the goat take there was minimal.

Stephens Passage (Taku River to Cape Fanshaw) experienced an increased goat harvest and an increased number of hunters afield compared to previous years. This area reported a harvest of 48 goats (14% more than in 1974) by 62 hunters (9% more than in 1974), for a 53.2 percent hunter success rate (Appendix III).

Little hunter effort or harvest has been reported in the southern drainages of the Taku River since the inception of the harvest ticket. Hunters formerly used the Dorothy Lake and Boarder Lake area but for some reason this area hasn't received much pressure in the last 3 years. Much of the hunting pressure was in the Tracy Arm and Endicott Arm areas and typically this hunting pressure has been concentrated in the last month of the open season, December or January. Harvest has increased in the Tracy Arm drainage and has decreased in the Endicott Arm drainage. There was a slight increase in hunter pressure in the Port Houghton area in 1975 (6 hunters in 1974 compared to 10 in 1975) and a significant increase in harvest (1 goat in 1974 compared to 9 goats in 1975).

Composition and Productivity

Age composition data and population counts for Subunit 1C are shown in Appendix V, and in Appendix II of the 1974 Annual Report of S&I Activities, Part I, Goat, Page 118. These surveys reveal that population trends seem to vary considerably throughout Subunit 1C. The area between Cape Fanshaw and Port Snettisham still retains a moderate goat population, but counts are considerably lower than comparable counts made in the early 1960's. Personal observations indicate goat populations now are lower than they were in 1973 in Endicott and Tracy Arms. The Port Houghton, Endicott Arm and Tracy Arm areas still have a moderate to high population which can withstand moderate hunting pressure.

The goat herds between Port Snettisham and the northern drainage of the Taku River are depressed in numbers by a factor of two to three. At this time there is little hunter interest and an insignificant harvest in this area.

The goat herd located behind Juneau seems to have stabilized and an aerial count made in July 1976 in the area between the Mendenhall and Herbert Glaciers revealed numbers surpassing counts made in previous years. The major problems in the Juneau area had been the continued increase in the number of hunters entering the field. The shortening of the season in 1975 seemingly reversed this trend.

Lions Head Mountain and the area north of Antler River in Berners Bay has moderate to high goat numbers and low harvest and hunter pressure.

There are fewer goats in the Chilkat Range today than in the early 1970's. The William Henry Mountain herd had a count of 68 goats in 1972, 52 in 1973, 44 in 1974, 23 in 1975 and 26 in 1976. If these counts are typical for the entire Chilkat Range, then the present population is about one-half of that present 3 years earlier. Hopefully, the 1976 count on William Henry Mountain, which was slightly higher than a similar 1975 count, holds true for the remainder of the area, which could mean the goat population has bottomed out and stabilized.

Management Summary and Conclusions

Data from harvest statistics and aerial surveys generally indicate that where goat populations are low, hunter pressure and harvest are also low. Survey data on herd size show different kinds of trends from

decreasing populations, stable populations or increasing populations, depending on the geographic area.

Severe winter weather may to be the primary factor causing population declines, but of interest is the fact that where wolf populations are known to be low, goat populations are stable or increasing (Mendenhall Glacier to Herbert Glacier) and where the wolf populations are high, goat populations have decreased (Chilkat Range).

That area of Subunit 1C having goats available to boat hunters in late winter (Endicott and Tracy Arms) has shown an increase in harvest and hunter pressure. If the season in this area were closed by the end of November, hunters would be forced to hunt earlier and at higher elevations in order to take goats (snow commonly drives goats down to tidewater in this area) and thus, hopefully, reduce goat harvest and hunter numbers.

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Appendix I. Lynn Canal (Subunit 1C) goat harvest statistics for 1972, 1973, 1974 and 1975 as derived from hunter report cards*.

Area	Year	Chronology of Harvest								Sex Composition			% Male	Number of Hunters	Hunter Success
		A	S	O	N	D	J	Unk.	Tot	M	F	U			
a. Excursion Inlet (Excursion River to Swanson River)	1972	4	3	1	1	0	0	1	10	3	7	0	30.0	14	64.3
	1973	3	4	1	0	1	n/a	0	9	2	7	0	22.2	21	42.9
	1974	0	0	0	0	0	n/a	0	0	0	0	0		1	
	1975	0	1	0	0	0	n/a	0	1	1	0	0	100.0	6	16.7
b. Tear Drop and Nun Mt. (Swanson River to St. James Bay)	1972	2	1	0	0	0	0	0	3	0	3	0		4	75.0
	1973	0	2	0	0	0	n/a	0	2	1	1	0	50.0	2	50.0
	1974	0	3	1	0	0	n/a	1	5	1	4	0	20.0	2	100.0
	1975	0	0	0	0	0	n/a	0	0	0	0	0		0	
c. Endicott River (St. James Bay to Eldred Rock)	1972	6	2	0	0	0	0	2	10	7	3	0	70.0	14	71.4
	1973	7	10	2	0	0	n/a	0	19	7	12	0	36.8	20	80.0
	1974	7	5	2	0	0	n/a	0	14	9	5	0	64.3	15	60.0
	1975	2	1	1	0	0	n/a	0	4	2	2	0	50.0	13	30.8
d. Lions Head and Upper Berners Bay (Eldred Rock to Antler River)	1972	0	0	0	0	2	0	0	2	0	2	0	0	1	100.0
	1973	0	0	0	0	0	n/a	0	0	0	0	0		2	
	1974	0	0	0	0	0	n/a	0	0	0	0	0	0	6	83.3
	1975	0	0	1	0	0	n/a	0	1	1	0	0	100.0	5	20.0
<hr/>															
Total															
Juneau	1972	12	6	1	1	2	0	3	25	10	15	0	40.0	33	69.7
Lynn Canal	1973	10	16	3	0	1	n/a	0	30	10	20	0	33.3	45	57.8
	1974	7	8	3	0	1	n/a	1	19	10	9	0	52.6	21	6.19
	1975	2	2	2	0	0	n/a	0	6	4	2	0	66.7	24	25.0

* Based upon the following statewide return rates: 1972-73.4%, 1973-71.7%, 1974-69.9% and 1975-72.6%.

Appendix II. Juneau (Subunit 1C) goat harvest statistics for 1972, 1973, 1974 and 1975 as derived from hunter report cards.

Area	Year	Chronology of Harvest								Sex Composition			Number of		
		A	S	O	N	D	J	Unk.	Tot.	M	F	U	% Male	Hunters	Hunter Success
e. Lower Berners Bay (Antler River to Eagle River Drainage)	1972	1	1	2	0	0	1	0	5	3	2	0	60.0	11	45.5
	1973	7	4	0	1	0	n/a	0	13	9	4	0	69.2	25	44.0
	1974	2	3	0	5	0	n/a	0	10	3	7	0	30.0	14	57.1
	1975	n/a	n/a	5	0	n/a	n/a	0	5	3	2	0	60.0	7	71.4
f. Goat Mt.-Stroller Mt. Eagle R. Drainage to Mendenhall Glacier	1972	2	0	1	2	0	0	0	5	4	1	0	80.0	30	16.7
	1973	2	4	2	3	0	n/a	0	11	6	5	0	54.6	26	38.5
	1974	0	3	1	1	1	n/a	0	6	2	3	1	40.0	29	17.2
	1975	n/a	n/a	2	0	n/a	n/a	0	2	2	0	0	100.0	8	25.0
g. Lemon Creek (Mend. Gl. to Salmon Creek Drainage)	1972	0	0	1	0	0	0	0	1	1	0	0	100.0	13	7.7
	1973	3	5	0	1	1	n/a	0	10	4	6	0	40.0	11	63.6
	1974	0	0	1	0	1	n/a	0	2	1	1	0	50.0	7	14.3
	1975	n/a	n/a	4	1	n/a	n/a	0	5	4	1	0	80.0	15	33.3
h. Salmon Creek (Salmon Cr. Drainage to Sheep Creek Drainage)	1972	1	0	0	0	0	0	0	1	1	0	0	100.0	2	50.0
	1973	1	0	1	1	0	n/a	0	3	2	1	0	66.7	4	75.0
	1974	1	0	1	1	0	n/a	0	1	1	0	0	100.0	5	20.0
	1975	n/a	n/a	0	0	n/a	n/a	0	0	0	0	0		11	
i. Salisbury Ridge (Sheep Cr. Drainage to Carlson Creek)	1972	0	1	1	1	0	0	0	3	2	1	0	66.7	6	50.0
	1973	3	1	0	1	0	n/a	0	5	2	3	0	40.0	11	36.4
	1974	6	3	0	0	1	n/a	1	11	5	4	2	55.6	13	69.2
	1975	n/a	n/a	1	0	n/a	n/a	0	1	0	1	0		2	50.0
j. Taku Inlet (Car-Creek to Norris Glacier)	1972	0	0	0	0	0	0	0	0	0	0	0		2	
	1973	3	1	0	1	0	n/a	0	5	2	3	0	40.0	2	71.4
	1974	0	0	0	1	0	n/a	1	2	1	1	0	50.0	5	40.0
	1975	n/a	n/a	0	1	n/a	n/a	0	1	0	1	0		4	25.0
Total Juneau Area	1972	4	2	5	3	0	1	0	15	11	4	0	73.3	64	23.4
	1973	19	15	3	9	1	n/a	0	47	25	22	0	53.2	84	47.6
	1974	9	9	2	7	3	n/a	2	32	13	16	3	40.6	73	37.0
	1975	n/a	n/a	12	2	n/a	n/a	0	14	9	5	0	64.3	47	29.8

Appendix III. Stevens Passage (Subunit 1C) goat harvest for 1972, 1973, 1974 and 1975 as derived from hunter report cards

Area	Year	Chronology of Harvest								Sex Composition			Number % of		Hunter Success
		A	S	O	N	D	J	Unk.	Tot.	M	F	U	Male	Hunters	
k. Upper North Taku (Norris Glacier to Canadian Border)	1972	0	2	0	0	0	0	0	2	1	1	0	50.0	3	66.7
	1973	0	0	0	0	0	n/a	0	0	0	0	0		2	
	1974	0	0	0	0	0	n/a	0	0	0	0	0		8	
	1975	1	0	0	0	0	n/a	0	1	1	0	0	100.0	3	33.3
l. Southern Taku (Canadian Border to Whiting River)	1972	1	0	0	1	0	0	0	2	2	0	0	100.0	11	18.2
	1973	0	1	1	0	0	n/a	0	2	1	1	0	50.0	3	66.7
	1974	1	0	2	0	0	n/a	1	4	2	2	0	50.0	3	75.0
	1975	0	0	0	0	0	n/a	1	1	1	0	0	100.0	4	25.0
m. Tracy Arm (Whiting River to Endicott Arm Drainage)	1972	0	0	1	0	0	14	2	17	7	10	0	41.2	15	80.0
	1973	1	0	3	5	3	n/a	0	12	8	4	0	66.7	16	56.3
	1974	0	1	0	6	9	n/a	0	16	4	12	0	25.0	18	61.1
	1975	1	0	1	5	12	n/a	3	22	11	10	1	52.4	25	88.0
n. Endicott Arm Drainage(Holkham Bay-Mt. Sumdum- Fords Terror)	1972	1	0	0	1	2	2	0	6	4	2	0	66.7	7	57.1
	1973	0	0	0	7	12	n/a	1	20	12	8	0	60.0	19	73.7
	1974	2	0	0	1	18	n/a	0	21	10	11	0	47.6	20	65.0
	1975	0	4	2	7	1	n/a	1	15	8	7	0	53.3	20	75.0
o. Port Houghton (Endicott Arm Drainage to Cape Fanshaw)	1972	0	0	0	0	0	0	0	0	0	0	0		0	
	1973	0	0	1	0	0	n/a	0	1	0	1	0		1	100.0
	1974	0	0	0	1	0	n/a	0	1	0	1	0		6	16.7
	1975	3	2	3	1	0	n/a	0	9	8	1	0	88.9	10	90.0
Total	1972	2	2	1	2	2	16	2	27	14	13	0	51.9	36	55.6
Stevens	1973	1	1	5	12	15	n/a	1	35	21	14	0	60.0	41	63.4
Passage	1974	3	1	2	8	27	n/a	1	42	16	26	0	38.1	55	50.9
	1975	5	6	6	13	13	n/a	5	48	29	18	1	60.4	62	53.2

Appendix IV. Subunit 1C goat harvest statistics for 1972, 1973, 1974 and 1975 as derived from hunter report cards.

Area	Year	Chronology of Harvest								Tot.	Sex Composition			% Male	Number of		Hunter Success
		A	S	O	N	D	J	Unk.	M		F	U	Hunters				
Lynn Canal	1972	12	6	1	1	2	0	3	25	10	15	0	40.0	33	69.7		
	1973	10	16	3	0	1	n/a	0	30	10	20	0	33.3	45	57.8		
	1974	7	8	3	0	0	n/a	1	19	10	9	0	52.6	21	61.9		
	1975	2	2	2	0	0	n/a	1	6	4	2	0	66.7	24	25.0		
Juneau	1972	4	2	5	3	0	1	0	15	11	4	0	73.3	64	23.4		
	1973	19	15	3	9	1	n/a	0	47	25	22	0	53.2	84	47.6		
	1974	9	9	2	7	3	n/a	2	32	13	16	3	40.6	73	37.0		
	1975	n/a	n/a	12	2	n/a	n/a	0	14	9	5	0	64.3	47	29.8		
Stephens Passage	1972	2	2	1	2	2	16	2	27	14	13	0	51.9	36	55.6		
	1973	1	1	5	12	15	n/a	1	35	21	14	0	60.0	41	63.4		
	1974	3	1	2	8	27	n/a	1	42	16	26	0	38.1	55	52.7		
	1975	5	6	6	13	13	n/a	5	48	29	18	1	60.4	62	53.2		
Subunit 1C	1972	0	0	0	2	0	0	1	3	1	2	0	33.3	16			
	1973	0	0	0	0	0	n/a	0	0	0	0	0		7			
	1974	0	0	0	0	0	n/a	1	1	1	0	0	100.0	10			
	1975	0	0	0	0	0	n/a	0	0	0	0	0		5			
Total Subunit 1C	1972	18	10	7	6	4	16	5	70	36	34	0	51.4	149	40.3		
	1973	30	32	11	21	17	n/a	1	112	56	56	0	50.0	177	52.2		
	1974	19	18	7	15	30	n/a	5	94	40	51	3	42.6	159	44.0		
	1975	7	8	20	15	13	n/a	5	68	42	25	1	61.8	138	49.3		

Appendices prepared by: David A. Johnson, Game Biologist III

Appendix V. Goat numbers and age ratios obtained from fixed-wing aircraft.

Survey Area	1975				1976			
	Ad.	Kids	Kid/100 Ad. Ratios	Goat/ Hours	Ad.	Kids	Kid/100 Ad. Ratios	Goat/ Hours
Port Houghton					43	8	19	38
Windham Bay	33	3	9	86				
Sumdum Mt. to Fords Terror	77	13	17	60				
Port Snettisham to Dorothy Lake	10	3	30	4				
Wright Gl. to Sittakancy R.	9	0	0	54				
Kluchman Mt. & Mt. Strong	15	3	20	13				
Mendenhall Gl. to Herbert Gl.					47	13	28	58
Herbert Gl. to Eagle Gl.					27	13	48	65
Humpy Creek	25*			55				
Tear Drop Lake	22	3	13	33				
William Henry Mt.	16	7	44	26	18	8	44	38
Endicott River to Sullivan River	14	4	29	13				

*No age differentiation

Prepared by: David A. Johnson, Game Biologist III

SHEEP

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Unit 7 - Seward - Kenai Mountains

Seasons and Bag Limits

Unit 7, that portion bounded on the northwest by the Sterling Highway, on the northeast and east by the Anchorage-Seward Highway, on the south and southwest by Kenai Lake.	To be announced	Closed except that one sheep with 1/2 curl horn or less, or one ram with full curl (4/4 curl) horn or larger may be taken by permit only. Dates and conditions of the hunt to be described by Commissioner's announcement.
Remainder of Unit 7	Aug. 10 - Sept. 20	One ram with 3/4 curl horn or larger.

Harvest and Hunting Pressure

The harvest of rams in GMU 7 since 1962 as obtained from harvest report returns has been as follows:

1962 - 15*	1968 - 52	1974 - 18**
1963 - 25	1969 - 42	1975 - 12
1964 - 8	1970 - 25	1976 - 8**
1965 - 22	1971 - 9	
1966 - 18	1972 - 18	
1967 - 21	1973 - 26	

* 1962 was the first year of the harvest ticket regulation. Coverage is known to be incomplete.

** Does not include rams taken on the special Crescent Lake Mountain hunt.

One hundred twenty-seven persons reported hunting sheep in Unit 7 during the 1976 season. Eleven resident hunters (9.1%) and one nonresident (.8%) were successful, equalling the 1975 harvest of 12 (Appendix I). However, 4 of the 1976 sheep were taken by special permit from the Crescent Lake Mountains.

Ninety-three hunters were afield in 1975, a 7-year low. The 1976 total increased 47.3 percent to 127. This jump was not reflected in increased take and overall hunter success dropped to 9.9 percent (including the 4 Crescent Lake Mountain rams). The Kenai Mountains (Unit 7) and portions of Unit 15) demonstrated the lowest hunter success ratio of any mountain range statewide.

The mean horn length of 8 sheep was 31.2 inches, down from 31.6 inches in 1975. Mean horn length of 3 special permit rams was 35.2 inches.

Hunting pressure was primarily by residents. Only two nonresidents reported hunting in Unit 7; one was successful.

Eight of 11 successful hunters resided in the Anchorage area. The remaining 3 listed addresses from the Kenai Peninsula. Anchorage residents comprised 57 percent of all hunters.

Composition and Productivity

One hundred fifty-eight sheep were observed in the Crescent Lake Mountains count area during 1976 (Appendix II). This compares favorably with 153 observed in 1975. However, rams increased from 48 to 64 while ewes decreased from 66 to 48. Cause of the population shift is unknown but may involve sheep movements or observer error.

A composition count was made in the Grant Lake Mountains in September of 1976 (Appendix II). The total of 49 is up one from the 1975 total and compares well to past data. Lyman Nichols counted 76 in the same area on June 19, 1976.

Management Summary and Conclusions

Hunter effort increased yet harvest remained constant from 1975-1976. Horn size remained relatively stable at 31.2 inches. Hunters appear to be taking rams as they enter legal size.

Unusually high snow pack in the interior Kenai Mountains in the winter of 1976-77 is expected to result in greater than normal mortality.

Recommendations

No changes in regulations are recommended at this time.

PREPARED BY:

Dave Hardy
Game Biologist II

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

APPENDIX I

Sheep Harvest and Hunter Success, Unit 7 - Kenai Mountains

Year	Mountain Range	Number Successful	Percent Successful	Number Unsuccessful	Percent Unsuccessful	Total Sample	Ave. Horn Length (N)
1969	Kenai Chugach	42 0	15.7 0	226 18	84.3 100.0	268 18	32.7 (36)
1970	Kenai Chugach	23 2	13.8 15.4	143 11	86.1 84.6	166 13	31.1 (20)
1971	Kenai Chugach	9 0	7.8 0	107 13	92.2 100.0	116 13	31.2 (6)
1972	Kenai Chugach	18 0	17.3 0	86 9	82.6 100.0	104 9	31.2
1973	Kenai Chugach	25 1	16.1 5.3	130 13	83.9 94.7	155 19	30.6 36.0
1974	Kenai Chugach	18 0	14.1 0.0	110 11	85.9 100.0	123 11	32.2
1975	Kenai Chugach	12 0	14.1 0.0	73 8	85.9 100.0	85 3	31.6 (10)
1976	Kenai Chugach	8 0	7.6 0.0	97 6	92.4 100.0	105 6	31.2 (8)

Prepared by: Dave Hardy, Game Biologist II.

APPENDIX II

Sheep trend count data, portions of Unit 7 - Kenai Mountains

COOPER MOUNTAIN

<u>Date</u>	<u>Total Adults</u>	<u>Lambs</u>	<u>Total Sheep</u>
7/56	39	11	50
6/63	47	10	57
5/68	97	20	117
9/72	70	12	82
7/73	--	--	87
6/74	65	11	76
75	No surveys		
76	No surveys		

CRESCENT LAKE MOUNTAINS

<u>Date</u>	<u>Rams</u>	<u>Ewes</u>	<u>Total Adults</u>	<u>Yrlngs</u>	<u>Lambs</u>	<u>Total Sheep</u>
6/56			101		35	136
6/68			228		68	296
7/70			243		44	287
6/71			208		20	228
6/72			194		30	224
6/73			218		50	268
6/74	73	99	221	24	29	250
6/75	48	66	130	16	23	153
6/76	64	48	131	19	27	158

GRANT LAKE MOUNTAINS

<u>Date</u>	<u>Rams</u>	<u>Ewes</u>	<u>Total Adults</u>	<u>Lambs</u>	<u>Total Sheep</u>
8/68			30	13	43
3/69			41	16	57
8/70			48	14	62
9/71			43	8	51
7/72			49	4	53
73			No surveys		
6/74			19	2	21
8/75			--	--	48
9/76	10	27	37	12	49 (76) ¹

Prepared by: Dave Hardy, Game Biologist II

¹ A separate count by Nichols. Other 1976 data from LeRoux survey.

SHEEP

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Unit 9 - Alaska Peninsula

Seasons and Bag Limits

August 10-September 20

One ram with 3/4 curl
horn or larger.

Harvest and Hunting Pressure

Harvest reports from 30 hunters (22 residents and 8 nonresidents) indicate that 13 rams were taken during the 1976 season. Of the successful hunters, six were residents and seven nonresidents. This is the unit's second successive year of a record high harvest of 13 rams.

Composition and Productivity

No work was accomplished during this reporting period.

Management Summary and Conclusions

The sheep range in this unit consists of the southern tip of the Alaska Range primarily north and east of Lake Clark. There are occasional reports of sheep in the mountains along the east shore of Lake Clark south to Lake Iliamna. Reports of sheep in this area are believed to be the results of seasonal movements and it is doubtful that sheep occupy the area on a permanent basis.

Recommendations

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

PREPARED BY:

Jim Faro
Game Biologist III

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

APPENDIX I

Reported Dall Sheep Ram Harvest for GMU 9, 1962 through 1976

Year	Harvest	Year	Harvest
1962	0	1970	2
1963	1	1971	2
1964	2	1972	3
1965	0	1973	3
1966	0	1974	8
1967	6	1975	13
1968	10	1976	13
1969	7		

Prepared by: Jim Faro, Game Biologist, King Salmon, Alaska.

SHEEP

SURVEY-INVENTORY PROGRESS REPORT - 1975 and 1976

Game Management Units 9, 16, 17 and 19 - Alaska Range West (ARW)

Seasons and Bag Limits

Units 9, 16, 17 and 19 Aug. 10 - Sept. 20 One ram with 3/4
curl horn or larger

Harvest and Hunting Pressure

Sheep harvest statistics for the Alaska Range West of McKinley Park (ARW) are presented below for 1975 and 1976:

<u>Year</u>	<u>Harvest</u>	<u>Hunters</u>	<u>Percent Success</u>	<u>Mean Horn Size (inches)</u>	<u>Percent Hunters</u>		<u>Percent Harvest</u>		<u>Percent Success</u>	
					Non	Res	Non	Res	Non	Res
1975	99	190	52	33.7	65	35	44	56	35	81
1976	131	269	48	34.2	69	31	56	44	38	71

The number of sheep hunters and rams harvested has shown a general increase in the ARW since 1967 (97 hunters harvested 65 rams in 1967). With this increase in overall hunting effort there has been an increase in the hunting effort by residents. The increase in the resident effort lead to a decrease in the overall hunter success because residents are traditionally less successful than nonresidents. Horn size among rams harvested has remained high.

Composition and Productivity

Composition and productivity information has not been gathered on an annual basis at mineral licks within the ARW. Information on lamb production gathered during distribution and abundance surveys prior to 1975 has been reported. During a 1975 aerial survey of the Windy Fork and Sheep Creek drainages, a total of 224 sheep were observed with a lamb:ewe ratio of 41:100. A ground count in the Sheep Creek area subsequent to the aerial survey showed a lamb:ewe ratio of 61:100 among the 169 sheep being classified. An aerial survey of the Sheep Creek drainage again in 1976 showed a total of 329 sheep with a lamb:ewe ratio of 35:100. A 1975 aerial survey of the Hartman River and upper South Fork of Kuskokwim showed a lamb:ewe ratio of 43:100 among the 101 sheep observed.

These figures indicate that sheep in these areas are more productive than those in Mt. McKinley National Park or farther east in the central portion of the Alaska Range East.

Management Summary and Recommendations

With present harvest levels it is not likely that any major changes will occur in sheep populations in the ARW as a result of hunting. If hunting pressure continues to increase, the number of legal rams in most areas will decrease and regulations limiting harvests may be necessary.

Information on sheep composition and productivity should be gathered on an annual basis from several locations.

Presently the greatest use of this sheep population is as a source of trophy rams. No changes in the regulations regarding trophy rams are recommended at this time.

There is little biological justification for prohibiting harvest of ewes. Regulations should be considered that would allow the harvest of ewes and thereby increase hunting and recreational opportunities. Sheep population levels and trends should be determined and monitored closely. To prevent serious biological repercussions, the population should not be allowed to increase until it can be established that the range can support a larger population.

PREPARED BY:

Arthur C. Smith
Game Biologist II

SUBMITTED BY:

Oliver E. Burris
Regional Management Coordinator

SHEEP

SURVEY-INVENTORY PROGRESS REPORT FOR REGULATORY YEAR 1976-77

Game Management Unit 11 - South and west portions of the Wrangell Mountains and the northern portion of the eastern Chugach Range.

Seasons and Bag Limits

Unit 11	Aug. 10-Sept. 20	One ram with 3/4 curl horn or larger.
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Harvest and Hunting Pressure

Ram harvests from Unit 11, statewide ram harvests, and the percentage of statewide harvests from Unit 11 are given in Appendix I. Ram harvests from Unit 11 have usually fluctuated in parallel with statewide harvest, with approximately 16 percent of the statewide harvest coming from Unit 11. During 1975 and 1976, however, the harvest from Unit 11 fell to 12.5 and 12.3 percent of the statewide total, respectively.

Comparisons of hunter success between statewide hunters and hunters within the Wrangell-Mentasta-Nutozotin (WMN) Mountains during 1974, 1975 and 1976 are made in Appendix II. Hunter success decreased among both Wrangell Mountain and statewide hunters. The decreased hunter success affected both Alaskan resident hunters and guided nonresident hunters on a statewide basis. Although only 25 percent of the hunters were nonresidents in the WMN Mountains, they killed 44 percent of the sheep. The success ratio of guided nonresidents was more than twice that of resident hunters.

A comparison of transportation means used by successful hunters showed that aircraft was the most popular transportation means and was used by 84 percent of the successful hunters. Next in popularity were horses (used by 9 percent of the successful hunters), highway vehicles (7%), and off-road vehicles (0.7%).

Harvest and hunting pressure data are illustrated in Appendix III for the two mountain ranges within Unit 11. Sample sizes for the eastern Chugach Range are small, and this accounts for much of the fluctuation seen in the annual harvest data. Harvests, hunting pressure, and percentage of resident hunters were generally low in the eastern Chugach Mountains. The mean horn lengths of harvested rams has been surprisingly small considering the low harvests from that area.

Composition and Productivity

Composition data obtained from surveys conducted on MacColl Ridge in the southern Wrangell Mountains by Department of Fish and Game personnel is shown in Appendix IV. Data from 1976 when compared to 1975, suggest a 43 percent reduction in legal rams. However, total sheep counted and percent lambs increased slightly.

Management Summary and Conclusions

Sheep hunters in the Wrangell Mountains had a higher success ratio than statewide hunters, and in addition, a larger percentage of hunters in the Wrangell Mountains were nonresidents. Individually, nonresidents had a 2.3 times greater probability of killing a sheep than resident hunters. Collectively, they killed 44 percent of the sheep although they comprised only 25 percent of the hunters. Aircraft was the main transportation means used, and all other types of transportation combined were used by only 16 percent of the hunters. Harvest data and reports by guides suggest an increase in hunting pressure in the eastern end of the Chitina Valley with a consequent reduction in trophy ram size. Composition data from MacColl Ridge, in the southern Wrangell Mountains, also suggests that the percentage of legal rams has been reduced. The combined information indicates cause for concern and close future monitoring.

Recommendations

1. Plans should be prepared in the near future to preserve and enhance trophy quality and quality hunting in selected areas of the Wrangell Mountains. The eastern portion of the Chitina Valley is a potential area for selection.
2. Composition counts to obtain lamb and yearling survival should be made annually in selected areas. Harvest data coupled with field reports and annual composition counts in selected areas are minimal sources of information necessary to formulate management plans and manage populations.
3. Collection of data should be discontinued in areas within the proposed National Parks if management authority of game is withdrawn from the State.
4. No changes in season or bag limits are recommended at this time.

PREPARED BY:

Ted Spraker
Game Biologist II

SUBMITTED BY:

John Vania
Regional Supervisor

APPENDIX I. A Comparison of Unit 11 and Statewide Annual Ram Harvests and the Percentage of Statewide Ram Harvests from Unit 11.

Ram Harvests				Ram Harvests			
<u>Year</u>	<u>Statewide</u>	<u>Unit 11</u>	<u>Percent</u>	<u>Year</u>	<u>Statewide</u>	<u>Unit 11</u>	<u>Percent</u>
1962*	667	117	17.5	1970	998	171	17.1
1963	970	131	13.5	1971	1,079	178	16.5
1964	919	151	16.4	1972	1,170	173	14.8
1965	885	131	14.8	1973	1,119	194	17.3
1966	955	125	13.1	1974	1,243	173	13.9
1967**	922	149	16.2	1975	1,071	134	12.5
1968	1,122	215	19.2	1976	1,112	137	12.3
1969	955	157	16.4				

* 1962 was the first year of harvest ticket report. Coverage may have been incomplete.

** Reported kill by 15 January, 1968.

Prepared by: Ted Spraker, Game Biologist II

APPENDIX II. Comparison of hunter success between statewide hunters and hunters in the Wrangell-Mentasta-Nutzotin Mountains during 1974, 1975 and 1976.

	<u>Statewide</u>			<u>Wrangell-Mentasta-Nutzotin Mountains</u>		
	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>
Percent Hunter Success:	<u>42%</u>	<u>37%</u>	<u>34%</u>	<u>55%</u>	<u>44%</u>	<u>43%</u>
Total Successful Hunters:	<u>1243</u>	<u>1071</u>	<u>1112</u>	<u>352</u>	<u>310</u>	<u>322</u>
Total Hunters:	<u>2949</u>	<u>2881</u>	<u>3236</u>	<u>644</u>	<u>697</u>	<u>754</u>
Percent Success Among Residents:	<u>32%</u>	<u>29%</u>	<u>28%</u>	<u>40%</u>	<u>33%</u>	<u>32%</u>
Successful Residents:	<u>713</u>	<u>660</u>	<u>736</u>	<u>160</u>	<u>157</u>	<u>176</u>
Total Residents:	<u>2215</u>	<u>2288</u>	<u>2667</u>	<u>401</u>	<u>482</u>	<u>551</u>
Percent Success Among Nonresidents:	<u>77%</u>	<u>75%</u>	<u>70%</u>	<u>83%</u>	<u>74%</u>	<u>75%</u>
Successful Nonresidents:	<u>484</u>	<u>379</u>	<u>348</u>	<u>182</u>	<u>146</u>	<u>136</u>
Total Nonresidents:	<u>626</u>	<u>507</u>	<u>497</u>	<u>220</u>	<u>197</u>	<u>182</u>
Ratio Nonresident/Resident Success:	2.4/1	2.6/1	2.5/1	2.1/1	2.2/1	2.3/1
Percent of Nonresidents Among Known Residency Hunters:	<u>22%</u>	<u>18%</u>	<u>16%</u>	<u>35%</u>	<u>29%</u>	<u>25%</u>
Total Nonresidents:	<u>626</u>	<u>507</u>	<u>497</u>	<u>220</u>	<u>197</u>	<u>182</u>
Total Residents & Nonresidents*:	<u>2841</u>	<u>2795</u>	<u>3164</u>	<u>621</u>	<u>679</u>	<u>733</u>
Percent of Sheep Killed by Nonresidents:	<u>40%</u>	<u>36%</u>	<u>32%</u>	<u>53%</u>	<u>48%</u>	<u>44%</u>
Nonresident Kill:	<u>484</u>	<u>379</u>	<u>348</u>	<u>182</u>	<u>146</u>	<u>136</u>
Resident & Nonresident Kill:**	<u>1197</u>	<u>1039</u>	<u>1084</u>	<u>342</u>	<u>303</u>	<u>312</u>

* Does not include hunters who did not report residency.

** Does not include kills of hunters with unspecified residency.

PREPARED BY: Ted Spraker, Game Biologist II

APPENDIX IV. A Comparison of Composition Data Obtained from MacColl Ridge
Trend Area for the Wrangell Mountains in Unit 11.

<u>Year</u>	<u>Area</u>	<u>Legal Rams</u>	<u>Lambs</u>	<u>Unid.</u>	<u>Total</u>	<u>Percent Rams</u>	<u>Percent Lambs</u>
1970	MacColl Ridge	26	60	134	220	11.8	27.3
1973	MacColl Ridge	28	45	171	244	11.5	18.4
1974	MacColl Ridge	25	31	124	180	13.9	17.2
1975	MacColl Ridge	27	33	145	205	13.2	16.1
1976	MacColl Ridge	12	38	161	211	5.7	18.0

Prepared by: Ted Spraker, Game Biologist II

APPENDIX III. A Comparison of Annual Harvest Data from Portions of Mountain Ranges within Unit 11.

	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>
<u>Unit 11 Portion of Eastern Chugach Range</u>										
Ram Harvest*:	0	8	7	10	4	1	9	19	10	14
Number of Resident and Non-resident Hunters:	0	12	12	22	7	3	22	27	21	19
Percent Hunter Success:	-	67%	58%	45%	57%	33%	41%	70%	48%	74%
Percent of All Hunters that were Residents:	-	66%	42%	52%	29%	33%	28%	42%	62%	37%
Mean Horn Length, Inches**:	-	31.6	37.4	33.9	30.9	30.0	34.8	33.7	36.2	34.2
<u>Unit 11 Portion of Wrangell Mountains</u>										
Ram Harvest*:	149	199	150	161	174	171	185	154	123	123
Number of Resident and Non-resident Hunters:	246	303	329	308	376	344	418	319	343	356
Percent Hunter Success:	61%	66%	46%	52%	46%	50%	44%	48%	36%	35%
Percent of All Hunters that were Residents:	63%	69%	71%	75%	69%	64%	65%	65%	68%	76%
Mean Horn Length, Inches**:	34.6	34.1	34.6	35.1	35.1	35.3	34.9	33.7	34.5	34.4

* The summed ram harvest from the eastern Chugach Range and the Wrangell Mountains do not equal the Unit 11 total harvest because of rams not included in this table whose specific kill location is unknown.

** Mean horn length from the 1967 harvest is based on rams harvested by resident hunters only. Mean horn length data during subsequent years is based on rams harvested by both resident and nonresident hunters.

Prepared by: Ted Spraker, Game Biologist II

SHEEP

SURVEY-INVENTORY PROGRESS REPORT - 1975 and 1976

Portions of Game Management Units 12, 13 and 20 - Alaska Range east of McKinley Park*

Seasons and Bag Limits

Unit 20 in ARE except Delta Management Area and Tok Management Area	Aug. 10 - Sept. 20	One ram with 3/4 curl horn or larger
Unit 20, that portion known as the Delta Management Area	Aug. 10 - Aug. 25**	One ram with 3/4 curl horn or larger
Units 12 and 20, that portion known as the Tok Management Area	Aug. 10 - Oct. 20	One sheep; hunting by permit only; 120 permits will be issued for full curl rams for the period Aug. 10 - Sept. 20. Other conditions of the hunt will be described by Commissioner's announcement. Persons obtaining a ram permit will not be permitted to apply again for four years.***

* Due to complex regulation changes in 1974 the Alaska Range east of Mt. McKinley was divided into three management areas (CARE - that area east of the Nenana River east to but not including McGinnis Creek; DMA - that area described as the Delta Management Area including the drainages of the Delta River from McGinnis Creek south to Castner Glacier, the drainages of the Tanana River flowing into its south bank from the Delta River upstream to the west bank of the Johnson River; and TMA - that area described as the Tok Management Area including the drainages of the Tanana River flowing into its south bank upstream from the east bank of the Johnson River east to the Tok-Slana Highway). Each area will be reported separately. Significant rangewide changes will be reported following the three area reports.

**From 12:01 a.m., August 5 to 12:01 a.m., August 26 no motorized vehicles or pack animals may be used to transport hunters, hunting gear, or game within the Delta Management Area.

***In 1975, 60 ewe permits were issued for the TMA for the period September 21 - October 20. In 1976, a registration hunt for ewe sheep was conducted in the TMA during the period September 1 - October 30.

Harvest and Hunting Pressure

Sheep harvest statistics for the Alaska Range east of McKinley Park (ARE) are presented below for 1975 and 1976:

<u>Year</u>	<u>Harvest</u>	<u>Hunters</u>	<u>Percent Success</u>	<u>Mean Horn Size (inches)</u>	<u>Percent Hunters</u>		<u>Percent Harvest</u>		<u>Percent Success</u>	
					<u>Non</u>	<u>Res</u>	<u>Non</u>	<u>Res</u>	<u>Non</u>	<u>Res</u>

Central Alaska Range East (CARE)

1975	97	217	45	32.3	77	18	60	36	35	92
1976	112	248	45	32.3	83	16	69	31	37	85

Delta Management Area (DMA)*

1975	50	163	28	31.3
1976	54	202	27	32.3

Tok Management Area (TMA)**

1975	29	67	43	35.7
1976	24	67	36	36.3

* residents are the primary users of the DMA and TMA

**compliance with mandatory check out procedures was low and figures given are therefore minimums

Central Alaska Range East (CARE) - No significant changes occurred in harvest statistics during the season of 1975 and 1976.

Delta Management Area (DMA) - The harvest of rams during both 1975 and 1976 within the DMA exceeded the calculated sustainable harvest of 40 rams annually. This excessive harvest occurred despite a 1975 regulation which closed the season on August 25 rather than September 20. The 1976 hunting season was the same number of days as the 1975 season (Aug. 10 - Aug. 25).

Hunting pressure within the DMA was not uniform. Analysis of harvest ticket returns for the 1975 season showed that only 20 percent of the harvest occurred in the more inaccessible areas such as the headwaters of the Johnson and Gerstle Rivers and July Creek. The easily accessible areas of the Granite Mountains and mountains near the Alaska Highway in Isabella Pass have supported the majority of the harvest (80%).

Horn size continued to be low, and in 1975 it dropped to an average of 31.3 inches. Harvests exceeding the sustainable level for eight of the last nine seasons have lead to the exploitation of younger rams and consequently to the observed decline in horn size among sheep harvested.

Tok Management Area (TMA) - The TMA was established before the 1974 hunting season. Sixty permits were issued that season. During 1975 and 1976, 120 permits were issued each season. Approximately 50 percent

of the permittees hunted. In 1975, 43 percent of the hunters were successful, and in 1976, 36 percent of the hunters were successful.

The decreased average horn size of the 1975 harvest resulted from increased hunting pressure in the TMA east of the Tok River where few large rams existed. In 1976 this area was closed to ram hunting and the average horn size of the TMA harvest increased. The average horn size (36 inches) of rams harvested in the TMA during 1975 and 1976 exceeded the statewide average by approximately three inches.

A permit ewe hunt was conducted in the TMA in 1975, but very few of the permittees hunted (10 of 60). No ewes were harvested in 1975. During 1976, regulations provided for a registration ewe hunt, and 60 hunters participated. Thirteen hunters were successful in taking ewes.

Composition and Productivity

Composition and productivity information has been gathered at several mineral licks throughout the Alaska Range east of Mt. McKinley. Information gathered in the Central Alaska Range East during 1975 and 1976 is presented below:

	<u>1975</u>			<u>1976</u>		
	<u>Lambs:</u> <u>100 ewes</u>	<u>Yrlgs:</u> <u>100 ewes</u>	<u>Total</u> <u>sheep</u>	<u>Lambs:</u> <u>100 ewes</u>	<u>Yrlgs:</u> <u>100 ewes</u>	<u>Total</u> <u>sheep</u>
Mt. McKinley	31	19	114	33	13	339
Louis Creek	18	6	39	27	27	51
Edgar Creek	43	30	86	20	20	58
Healy Creek	35	22	201	22	8	115
Dry Creek	28	23	882	36	16	727
Total	29	22	1322	32	15	1290

Production of lambs and survival of lambs to yearling age during 1975 and 1976 was not significantly different than in recent years. However, the lamb:100 ewe and yearling:100 ewe ratios remained below the averages of 55 and 27, respectively, recorded for the five year period prior to 1972.

Composition and productivity data gathered during 1975 and 1976 at two mineral licks within the Delta Management Area are shown below:

	<u>1975</u>			<u>1976</u>		
	<u>Lambs:</u> <u>100 ewes</u>	<u>Yrlgs:</u> <u>100 ewes</u>	<u>Total</u> <u>sheep</u>	<u>Lambs:</u> <u>100 ewes</u>	<u>Yrlgs:</u> <u>100 ewes</u>	<u>Total</u> <u>sheep</u>
Delta Management Area	36	33	243	40	42	413

Based on past data from this portion of the Alaska Range, production and yearling survival were excellent.

Composition and productivity data gathered during 1975 and 1976 at the mineral licks in the Tok Management Area are shown below:

	<u>1975</u>			<u>1976</u>		
	Lambs:	Yrlgs:	Total	Lambs:	Yrlgs:	Total
	<u>100 ewes</u>	<u>100 ewes</u>	<u>sheep</u>	<u>100 ewes</u>	<u>100 ewes</u>	<u>sheep</u>
Tok Management Area	43	37	273	35	26	257

Combined data collected within the TMA during 1974, 1975 and 1976 indicate a decreasing lamb:ewe ratio. Whether this represents a problem with sampling or a population trend remains unknown. Although the 1976 lamb:ewe ratios were the lowest recorded to date for the TMA, production remained fair to good and survival remained high compared to past data for this area.

Management Summary and Recommendations

Central Alaska Range East (CARE) - No significant changes in harvest statistics or productivity occurred during 1975 and 1976. Production within the CARE remained low, average horn size of harvested rams remained low and hunting pressure remained high. Mortality from all sources exceeded recruitment, and the total number of sheep in this area continued to decline.

Consideration of regulations allowing hunting of ewes is recommended for this area. No changes in ram hunting regulations are recommended at this time.

Delta Management Area (DMA) - Despite restrictive hunting regulations the harvest of rams has averaged 52 per year since 1968. This average is 12 rams in excess of the calculated sustainable harvest (40 rams) for the DMA. The consequences of this excessive harvest are reduced trophy size, a harvest comprised of younger rams, and a great deal of hunter competition for the available rams. If a quality hunt for the walk-in hunter is to be maintained, more restrictive regulations are recommended. Possible restrictions include revised season dates, a permit system, and shortening of the hunting season.

Consideration of a regulation that would allow ewe hunting is recommended.

Tok Management Area (TMA) - The Tok Management Area is being managed as a high quality, trophy hunting area. The calculated sustainable harvest for this area is 30-35 rams and the number of permits issued annually (120) has resulted in a take close to the minimum recommended harvest. Therefore, no changes in ram hunting regulations are recommended at this time.

In 1975, 60 ewe permits were issued for the TMA. Very few of the permittees hunted (10) and none were successful. In 1976, a registration hunt was conducted and 13 of 60 hunters were successful. It is recommended that regulations allowing harvest of this limited number of ewes be continued.

PREPARED BY:

Arthur C. Smith
Game Biologist II

SUBMITTED BY:

Oliver E. Burris
Regional Management Coordinator

SHEEP

SURVEY-INVENTORY PROGRESS REPORT - 1975/1976

Game Management Unit 12 - Mentasta Mountains and north slope Wrangell Mountains

Seasons and Bag Limits

Unit 12 Aug. 10-Sept. 20 One ram with 3/4 curl horn or larger

Harvest and Hunting Pressure

Harvest statistics for the 1975 and 1976 sheep season in Unit 12 are summarized below:

Year	Harvest	Hunters	Percent success	Mean	% hunters		% harvest		% success	
				horn size	res	nonres	res	nonres	res	nonres
1975	186	353	53	33.1	70	28	53	45	40	86
1976	199	401	50	33.0	74	26	56	41	39	86
Average										
1968-74	154	306	50	34.2	72	28	55	45	36	79

Except for the increased harvest, no major changes were evident in the 1975 and 1976 Mentasta-Wrangell Mountain ram harvests. Favorable weather during the hunting season probably accounted for the slightly larger harvest.

While the average horn size in 1975 and 1976 was somewhat below the 1968-74 average, it has remained stable at about 33 inches over the past three hunting seasons. This probably indicates that relatively few large rams existed in the areas hunted. Unless hunting pressure is shifted to areas that have sustained significantly less hunting pressure in the past, average horn size is not expected to increase.

The Nabesna River and Ptarmigan-Rock Lake areas again supported the largest harvest. Compared to 1975 the number of sheep harvested during 1976 declined in the Nabesna River area and increased slightly in the Rock-Ptarmigan Lake areas. The decline in the Nabesna River area harvest may have resulted from a relatively large (compared to past years) amount of hunting pressure by residents. Residents are normally less successful than nonresidents.

Composition and Productivity

Aerial sheep surveys conducted in the Wiki Peak area during August 1975 revealed 11 percent sub-legal rams, 11 percent legal rams, 30 percent ewes, and 16 percent lambs. Thirty-one percent of the sheep

observed were unclassified. During this two hour survey, 860 sheep were observed. Because of unfavorable survey conditions composition data are not comparable with those from past surveys, although about the same number of sheep were seen as in past surveys.

No mineral lick observations were conducted during 1975 or 1976.

Management Summary and Recommendations

The number of sheep in Unit 12 was high, but population trends were not determined. Based on available habitat it is unlikely that sheep numbers increased. It is also unlikely that the present populations can be supported indefinitely.

If hunting pressure continues to increase the number of legal rams will likely decline unless some hunting pressure is diverted to under-utilized areas. It is not known whether or not such areas exist in this unit.

The Wiki Peak area should continue to be used as a trend area and counts should be conducted there semi-annually to determine composition and productivity.

No changes in seasons or bag limits are recommended.

PREPARED BY:

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SUBMITTED BY:

Oliver E. Burris
Regional Management Coordinator

SHEEP

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Unit 13 - Central and eastern portion of the Chugach Mountains, eastern portion of the Talkeetna Mountains and southern portion of the eastern Alaska Range.

Seasons and Bag limits

Unit 13	Aug. 10-Sept. 20	One ram with 3/4 curl horn or larger.
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Harvests and Hunting Pressure

Appendix I shows Unit 13 harvest since 1962 and indicates a reduction in the Unit 13 sheep harvest during the 1976 season.

Hunting pressure for the Chugach and Talkeetna Mountains is shown in Appendix II. These data show a decrease in hunting pressure and harvest in the Talkeetna Mountains but an increase in harvests and hunting pressure in the Unit 13 portion of the Chugach Mountains. Success ratios dropped in both mountain ranges, suggesting a decline in available legal rams. Mean horn length increased in the Talkeetna Mountains but decreased in the Chugach Range.

Composition and Productivity

The results of trend counts conducted in the Boulder Creek, Watana Creek Hills portion of the Talkeetna Mountains and in the Unit 13 portion of the Chugach Range are shown in Appendix III. These counts indicate that total numbers of sheep have increased since 1969 in the Chugach Range while they have decreased in the Watana Creek Hills. The percentage of legal rams has been reduced in the Watana Creek Hills. The percentages of lambs in the herd are similar in both areas.

Management Summary and Conclusions

Sheep population indices suggest that changes in total numbers are occurring because of natural causes. Hunter harvest fluctuates around the availability of legal rams, which is a function of survival of the young. Present seasons and bag limits allow for utilization of those males larger than three-quarter curl, which influences the availability of large trophy size rams but probably does not influence lamb survival or total sheep numbers.

Recommendations

- 1) Continue existing trend count areas and establish trend count areas in the Chugach Range.
- 2) Conduct sheep inventories in portions of Unit 13 sheep habitat which have never been inventoried.
- 3) Inform public of changes in sheep populations.

PREPARED BY:

Sterling Eide
Game Biologist III

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

Appendix I. A comparison of Unit 13 and statewide annual ram harvest and the percentage of statewide ram harvests from Unit 13.

<u>Ram Harvests</u>				<u>Ram Harvests</u>			
<u>Year</u>	<u>Statewide</u>	<u>Unit 13</u>	<u>Percent</u>	<u>Year</u>	<u>Statewide</u>	<u>Unit 13</u>	<u>Percent</u>
1962*	667	107	16.0	1969	955	155	16.2
1963	970	132	13.6	1970	998	134	13.4
1964	919	156	17.0	1971	1079	139	12.9
1965	885	143	16.2	1972	1170	125	10.7
1966	955	154	16.1	1973	1119	101	9.0
1967	922	152	16.5	1974	1243	176	14.2
1968	1122	159	14.2	1975	1071	170	15.9
				1976	1112	136	12.2

* 1962 was the first year of harvest ticket reporting. Coverage may have been incomplete.

Prepared by: Sterling Eide, Game Biologist III

Appendix II. A comparison of harvest data from the Talkeetna and Chugach Mountain Ranges within Unit 13.

Unit 13 Portion of the Eastern Talkeetna Mountains	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>
Ram Harvest*:	71	87	95	91	71	64	52	93	95	58
Number of Hunters:	218	221	267	229	193	248	217	237	241	239
Percent Hunter Success:	33%	39%	36%	40%	37%	26%	24%	39%	39%	24%
Percent Resident Hunters:	83%	77%	77%	72%	74%	84%	88%	90%	81%	91%
Mean Horn Length, inches**:	31.1	31.9	31.5	32.3	31.4	30.2	31.0	29.9	30.1	31.6

Unit 13 Portion of the
Central Chugach Range

Ram Harvest*:	60	58	60	41	60	54	45	79	56	63
Number of Hunters:	121	112	158	124	156	128	163	179	192	212
Percent Hunter Success:	50%	52%	38%	33%	38%	42%	28%	44%	29%	30%
Percent Resident Hunters:	64%	74%	79%	81%	74%	78%	79%	75%	81%	89%
Mean Horn Length, inches**:	33.1	35.5	36.2	34.1	35.1	33.8	33.8	34.1	34.2	33.6

* The summed ram harvests from the eastern Talkeetna Mountains and the central Chugach Range do not equal the Unit 13 total harvest because of rams not included whose specific kill location is unknown and because of small number of rams killed in Unit 13 from the Alaska Range east of McKinley Park.

** Mean horn length for the 1967 harvest is based on rams harvested by resident hunters only. Mean horn length data during subsequent years is based on rams harvested by both resident and nonresident hunters.

Prepared by: Sterling Eide, Game Biologist III

Appendix III. A comparison of sheep composition data for selected areas in Unit 13.

<u>Trend Count Area</u>		<u>Legal Rams</u>	<u>Lambs</u>	<u>Total</u>
Boulder Creek drainages:	1949	--	--	45
	1951	--	--	115
	Sept. 1967	--	--	430
	May/June 1968	6%	10%	404
	July 1968	--	--	460
	April 1974	8%	18%	112
	June 1974	8%	16%	287
	June 1976	5%	20%	361
Watana Hills vicinity:	1950	--	--	0
	Sept. 1967	--	--	220
	Aug. 1968	--	18%	183
	Aug. 1973	6%	23%	176
	April 1974	8%	24%	76
	June 1976	--	24%	81
	August 1976	3%	23%	130
Chugach Range - Unit 13:	July 1968			
	& August 1969	--	--	1160
	July 1976	7%	21%	1764

Prepared by: Sterling Eide, Game Biologist III

SHEEP

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Subunits 14A and B - Upper Cook Inlet

Seasons and Bag Limits

Aug.10-Sept.20

One ram with 3/4 curl horn or larger.

Harvest and Hunting Pressure

The total harvest in Subunits 14A and B during 1976 was 46 rams, 35 of which came from Subunit 14A and 11 from 14B (Appendix I). This exceeded the previous 8-year average harvest of 28.6 for this area.

In comparison, the total Unit 14 harvest in 1976, including Subunit 14C, was 74 rams (Appendix II). This was similar to the previous 11-year average of 64.3 rams for the entire Unit.

In the Chugach Mountains portion of Subunit 14A, the take of 27 rams was more than twice the 1968-1975 average of 13.1 rams per year. In the Subunit 14B portion of the Talkeetna Mountains the harvest of 11 rams exceeded the previous eight year average of 4.4 rams per year. In the Subunit 14A portion of the Talkeetna Mountains, the reported take of eight rams was below the 1968-1975 average of 11.1 sheep per year.

The Chugach Mountain data include portions of the mountain range in Units 7, 11, 13 and 14A, B and C. In the entire Chugach Range, 473 hunters took 132 sheep for a 28 percent success ratio (Appendix III). This is the third highest success rate recorded. Success rates between 1967 and 1975 have varied from 18 percent to 34 percent. The number of hunters ranged from 403 to 655 per year. Twenty-four percent of 417 resident hunters and 59 percent of 46 nonresident hunters were successful in 1976.

In the Talkeetna Mountains, including the Chulitna Mountains and the Watana Creek Hills, the sheep range includes portions of Units 13 and 14A and B. Three hundred hunters harvested 77 sheep for a 26 percent hunting success rate (Appendix IV). Success rates between 1967 and 1975 varied between 22 and 39 percent, while the number of hunters varied from 240 to 343. Success rates for resident (21%) and nonresident (69%) hunters are similar to the previous 9-year average for this area.

The mean horn length of sheep killed in the Chugach Mountains (32.2 inches) was greater than the mean horn length of sheep killed in the Talkeetna Mountains (30.0 inches, data not shown). Nonresident (i.e., guided) hunters in both mountain ranges took larger rams on average than resident hunters (2.4 inches larger in the Chugach Mountains and 4.8 inches in the Talkeetna Mountains).

Composition and Productivity

The second sheep sex and age composition survey on record was flown in the portion of Subunit 14A between the Matanuska and Knik Rivers (Appendix V). A total of 709 sheep were tallied representing a 49 percent increase over the 1973 survey. The percentages of legal rams (14.2%) and lambs (16.6%) were similar to the 1973 figures.

Management Summary and Conclusions

Sheep harvests in Subunits 14A and 14B were depressed during the early 1970's. Including a portion of sheep from the "unreported location" category (which was much higher in the late 1960's), harvests from Subunits 14A and 14B in recent years are at the same level as that of the late 1960's. Hunting pressure and hunting success also declined during the early 1970's, suggesting a decline in the desirability, vulnerability, or availability of rams. Composition counts in 1973 and 1976 show relatively large percentages of legal rams and suggest an increase in population size during the interval. The mean horn size from sheep harvested in the Talkeetna Mountains is relatively small. This suggests hunters are taking young rams although it is also possible these rams are genetically smaller. Not enough information exists to ascertain the reason. However, a large winter kill of sheep during the early 1970's would fit the known weather data and the inferences drawn from harvest and population data. Hunting pressure may have subsequently shifted to other areas where availability of rams was greater.

Recommendations

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

PREPARED BY:

Jack C. Didrickson and Carl McIlroy
Game Biologist III and Game Biologist III

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

Appendix I. Reported Harvest of Dall Sheep Rams in Portions of the Two Mountain Ranges in Alaska's Game Management Unit 14 for the Years 1968 through 1976.

	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>Average 1968-1975</u>	<u>1976</u>
Chugach Mts. Portion in GMU 14A (between Knik R. Glacier and Matanuska R.)	16	11	9	8	14	10	13	24	13.1	27
Talkeetna Mts. Portion in GMU 14A (South-East slope of Talkeetna Mts.)	13	22	3	11	13	5	13	9	11.1	8
Talkeetna Mtns. Portion in GMU 14B (Western slope of Talkeetna Mts.)	3	1	5	3	7	3	8	5	4.4	11
Total reported sheep harvest for GMU Subunits 14A and B	32	34	17	22	34	18	34	38	28.6	46
GMU 14, Matanuska River drainage or Chugach Mtns., unknown specific locality-could be Subunit 14A or C.	13	20	2	3	8	3	4	0	6.6	3

PREPARED BY: Jack C. Didrickson, Game Biologist III
Carl McIlroy, Game Biologist III

Appendix II. Reported Harvest of Dall Sheep Rams in Alaska's Game Management Unit 14 for the Years 1965 through 1976*.

<u>1965</u>	<u>1966</u>	<u>1967</u> ¹	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	Average <u>1965-1975</u>	<u>1976</u>
62	49	72	76	94	63	59	77	32	60	63	64.3	74

* In a few cases hunters only report mountain range in which they hunted. When they fail to indicate the Game Management Unit, they are arbitrarily placed in certain Game Management Units.

1 Reported kill as of January 15, 1968.

PREPARED BY: Jack C. Didrickson, Game Biologist III
Carl McIlroy, Game Biologist III

Appendix III. Reported Harvest of Dall Sheep Rams, Numbers of Hunters, and Success of Hunters for Alaska's Chugach Mountain Range, in Game Management Units 7, 11, 13 and 14, 1967 through 1976.

Year	All Hunters*			Residents			Non-residents		
	Kill No.	Hunters	Success	Kill No.	Hunters	Success	Kill No.	Hunters	Success
1967	115	521	22%	67	455	15%	48	66	73%
1968	133	630	21%	99	570	17%	34	50	57%
1969	138	655	21%	102	593	17%	33	51	65%
1970	108	503	21%	67	404	17%	22	37	59%
1971	109	586	19%	70	518	14%	35	53	66%
1972	112	470	24%	79	378	21%	25	43	58%
1973	81	426	19%	49	362	14%	26	50	52%
1974	137	403	34%	89	333	27%	45	61	74%
1975	122	415	29%	84	352	24%	30	46	65%
1976	132	473	28%	102	417	24%	27	46	59%

* All Hunters category is higher than resident plus non-resident categories combined. This is due to the inclusion of reports from hunters who did not note residency.

PREPARED BY: Jack C. Didrickson, Game Biologist III
Carl McIlroy, Game Biologist III

Appendix IV. Reported Kill of Dall Sheep Rams, Numbers of Hunters, and Success of Hunters for Alaska's Talkeetna Mountain Range, Chulitna Mountains, and Watana Creek Hills, 1967 through 1976.

<u>Year</u>	<u>All Hunters*</u>			<u>Residents</u>			<u>Non-residents</u>		
	<u>Kill No.</u>	<u>Hunters</u>	<u>Success</u>	<u>Kill No.</u>	<u>Hunters</u>	<u>Success</u>	<u>Kill No.</u>	<u>Hunters</u>	<u>Success</u>
1967	84	272	31%	50	224	22%	34	48	71%
1968	110	343	32%	64	273	23%	46	70	66%
1969	118	318	37%	64	235	27%	51	76	67%
1970	99	268	37%	45	175	26%	43	62	69%
1971	85	240	35%	39	178	22%	44	59	75%
1972	81	304	27%	41	227	18%	34	61	56%
1973	61	277	22%	39	232	17%	21	31	68%
1974	114	312	37%	83	259	32%	26	40	65%
1975	109	281	39%	75	231	32%	30	40	75%
1976	77	300	26%	55	267	21%	20	29	69%

* All Hunters category is higher than resident plus non-resident categories combined. This is due to the inclusion of reports from hunters who did not note residency.

PREPARED BY: Jack C. Didrickson, Game Biologist III
Carl McIlroy, Game Biologist III

Appendix V. Sex and Age Composition of Sheep in that Portion of Alaska's Game Management Subunit 14A
Between the Matanuska and Knik River, 1973 and 1976.

Date	Legal Males	Distinguishable Sublegal Males	Mixed Females and Indistinguishable Males	Lambs	Total	Percent Lambs	Percent Legal Males	Count Time
6/29/73	71	66	257	81	475	17.1%	14.9%	13.2 hrs.
7/27- 29/76	101	100	390	118	709	16.6%	14.2%	15.3 hrs.

Survey Vehicle: 1973 - All areas via Super Cub
1976 - Area B-F via Jet Ranger Helicopter, area A via Super Cub.

PREPARED BY: Jack C. Didrickson, Game Biologist III
Carl McIlroy, Game Biologist III

SHEEP

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Subunit 14C - Anchorage and vicinity

Seasons and Bag Limits

Unit 14(C)	Day after Labor Day - September 20	One ram with 3/4 curl horn or larger
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Harvest and Hunting Pressure

The Eklutna drainage, excluding Thunderbird Creek and the east fork of Eklutna above the lake; the Eagle River drainage below the gorge; and all Turnagain Arm drainages from and including the North Fork of Campbell Creek on the north, to and including Indian Creek on the south, were closed to sheep hunting during 1976.

During 1976, 22 rams were harvested in Subunit 14C (Appendix I), a 29 percent reduction from the 1968-1975 mean harvest of 31. Poor weather during the season and 3 additional closed areas contributed to the lower harvest. No sheep were taken in the Eagle River drainage, while 18 (82% of the harvest) came from Eklutna River, Hunter Creek, or Goat Creek. Eleven rams were taken from the East Fork of Eklutna, which had been closed to sheep hunting since 1973. Twenty-one percent (22 of 106) of all sheep hunters took a ram. All successful hunters were residents. Only one nonresident hunter reported. The 1976 mean horn size was 32.3 inches (Appendix II), a substantial increase over the 1971-75 average of 30.8 inches, and comparable to the 1968-1970 average of 32.0 inches.

Composition and Productivity

The entire Subunit was surveyed during late June 1976. A total of 977 sheep were observed (Appendix III). Surveys in 1968 and 1972 yielded 868 and 1,050 sheep respectively. Survey conditions were ideal with no wind and little snow. Overall sheep abundance appears to have changed little over the past 8 years, although distribution may be somewhat different. Sheep numbers in the Peters Creek study area (between Eagle River and Eklutna River) declined by 39 percent compared to 1972 survey figures. Conversely, sheep have increased by 25 percent between 1972 and 1976 in the area south of Eagle River. Such population changes are probably a result of changing habitat conditions. Of the 977 sheep observed, 130 were lambs and 86 appeared to be legal rams. The percent of lambs in the population (13.3 per 100 adults) is low and indicates poor production and/or survival. The percent of apparent legal rams (8.8%) is fair to good and comparable to other sheep populations in relatively inaccessible or limited access areas. Additionally, 152 young rams (between 1/2 and 3/4 curl) were observed.

Management Summary and Conclusions

The 14C sheep population remains high with good numbers of legal rams available. Harvests and hunting pressure have been relatively stable over the past 3 years. Horn size appears to be increasing. However, last year's harvest might have been up to 50 percent higher had not extremely poor weather prevailed throughout most of the season. Additional mean horn length data together with yearly aerial survey data will be necessary in order to establish a relationship between horn length and harvest levels. Once such information is obtained, the adoption and implementation of the proposed West Chugach Sheep Management Plan will be necessary in order to maintain the harvest at desired levels. Presently, 25 rams per year is thought to be optimum.

Recommendations

The West Chugach Sheep Management Plan should be implemented as soon as possible. Furthermore, any efforts to close additional extensive areas to sheep hunting should be opposed. Sufficient closed areas are presently existant. Further hunting restrictions serve only to reduce recreational hunting opportunity and do little to promote viewing or photography.

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SUBMITTED BY:

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Appendix I. Harvest and Hunter Success 1968-1976: Game Management Subunit 14C.

<u>Year</u>	<u>Harvest</u>	<u>Hunters</u>	<u>Percent Success</u>
1968	31	282	11
1969	40	380	11
1970	44	244	18
1971	34	330	10
1972	35	256	14
1973	11	135	8
1974	22	112	20
1975	29	109	27
1976	22	106	21

Appendix II. Average Horn Size in Inches for Three Areas 1971-1976.

Resident Hunters Only.

<u>Year</u>	<u>Kenai Peninsula</u>		<u>Southeast Talkeetna Mountains</u>		<u>14C</u>
	Sample Size		Sample Size		Sample Size
1971	29.9	(25)	31.2	(25)	30.9 (29)
1972	30.6	(28)	29.6	(25)	31.7 (25)
1973	30.8	(46)	30.6	(32)	28.9 (10)
1974	30.8	(55)	29.9	(43)	30.3 (20)
1975	30.8	(49)	29.9	(44)	30.9 (23)
1976	30.0	(37)	30.8	(29)	32.3 (22)

PREPARED BY: David Harkness, Game Biologist II

Appendix III. Sheep numbers by drainage in G.M.U. 14C. 1976 Survey data.

Drainage	No. legal rams 3/4 curl+	No. young rams 1/2-3/4 curl	No. Lambs	No. ewes, rams ≤12/ curl	Total sheep
Lake George	17	12	1	26	56
Hunter Creek	22	46	6	39	113
Goat Creek	0	2	21	55	78
Eklutna River	11	34	25	140	210
Thunderbird Creek	0	0	0	0	0
Peters Creek	3	14	12	68	97
Eagle River	18	25	34	138	215
Ship Creek	6	16	20	105	147
Cambell to Rainbow	1	0 ¹	2	10	13
Indian Cr.-Falls Cr.	2	2	9	26	39
Bird Creek	6	1	0	2	9
Total 14C	86	152	130	609	977

PREPARED BY: David Harkness, Game Biologist II

SHEEP

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Unit 15 - Kenai Mountains

Seasons and Bag Limits

Unit 15	Aug. 10-Sept. 20	One ram with 3/4 curl horn or larger.
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Harvest and Hunting Pressure

Based on harvest report returns, the take of rams since 1962 has been as follows:

1962 - 35*	1970 - 42
1963 - 43	1971 - 25
1964 - 26	1972 - 18
1965 - 35	1973 - 34
1966 - 48	1974 - 50
1967 - 47	1975 - 47
1968 - 52	1976 - 29
1969 - 31	

* Harvest report coverage is known to have been incomplete.

One hundred forty-one hunters reported hunting sheep in Unit 15 during the 1976 season (Appendix I). Twenty-nine hunters (21%) were successful. Hunters afield declined 19 percent from the record high of 174 in 1975.

Hunter success dropped to 21 percent from 27 in 1975 and 33 percent in 1974 (Appendix I). The average horn length of 30.0 was down slightly from 30.5 in 1975 and is the lowest in the state. Horn length appears to be on a slow downward trend although the change may not be statistically significant.

Composition and Productivity

Sheep surveys are conducted every second or third year. The most recent survey was conducted in 1975 and is discussed in the 1975 sheep S&I report and in Appendix II.

Management Summary and Conclusions

The ram harvest from Unit 15 over the past 15 years has fluctuated with no apparent trend. The harvest apparently follows closely the recruitment into the legal ram cohort. Fluctuations in the harvest are probably heavily influenced by the strength of the age class entering the legal ram cohort. Weather can also greatly affect the harvest.

Low clouds and rain, particularly during the first two weeks of the season, can greatly reduce the season's harvest.

Recommendations

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

PREPARED BY:

Paul A. LeRoux
Game Biologist III

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

APPENDIX I

Sheep harvest and hunting pressure, Unit 15 - Kenai Mountains

<u>Year</u>	<u>Mountain Range</u>	<u>Number Successful</u>	<u>Percent Successful</u>	<u>Number Unsuccessful</u>	<u>Percent Nonresident Hunters</u>	<u>Total^{1/} Hunters</u>	<u>Average Horn Length</u>
1969	Kenai	31	27	84	3	115	
1970	Kenai	42	32	91	5	133	
1971	Kenai	25	16	131	7	156	
1972	Kenai	18	15	99	9	117	
1973	Kenai	34	25	103	7	137	30.8
1974	Kenai	50	33	102	11	152	30.5
1975	Kenai	47	27	127	2	174	30.5
1976	Kenai	29	21	112	5	141	30.0

^{1/} Does not include hunters who did not give zip code (less than one percent).

Prepared by: Paul A. LeRoux, Game Biologist III

APPENDIX II

Sheep trend count data Unit 15, 1950-1975.

<u>Date</u>	<u>Area</u>	<u>Total Adults</u>	<u>Lambs</u>	<u>% Lambs</u>	<u>Total Sheep</u>
7/16/68	Skilak Glacier to Killey River	46	9	16%	55
8/8/72	Skilak Glacier to Killey River	66	10	13%	76
6/6/74	Skilak Glacier to Killey River	39	4	9%	43
7/10/75	Skilak Glacier to Killey River	54	5	8%	59
1950	Killey River to Tustumena Glacier				123
1951	Killey River to Tustumena Glacier				157
1962	Killey River to Tustumena Glacier	251	38	13%	289
1966	Killey River to Tustumena Glacier	426	100	19%	526
7/68	Killey River to Tustumena Glacier	594	162	21%	756
8/7-8/72	Killey River to Tustumena Glacier	444	127	21%	597*
6/6/74	Killey River to Tustumena Glacier	412	58	12%	470
7/9-10/75	Killey River to Tustumena Glacier	468	52	10%	520

* Includes 26 unclassified sheep.

PREPARED BY: Paul A. LeRoux, Game Biologist III

SHEEP

SURVEY-INVENTORY PROGRESS REPORT -1976

Game Management Unit 16 - West Side of Cook Inlet

Seasons and Bag Limits

Aug. 10 - Sept. 20

One ram with 3/4
curl horn or
larger.

Harvest and Hunting Pressure

Based on harvest report returns, the harvest of rams from 1966 through 1976 is presented below:

<u>1966</u>	<u>1967*</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>
6	4	9	13	11	8	11	29	21	12	23

* Reported kill by January 16, 1968.

A record number of 53 sheep hunters reported hunting in Unit 16 during the 1976 season. This was an increase of 77 percent over 1975. Eleven rams taken from the Yentna River area accounted for 48 percent of the harvest. Only one sheep was reported taken from this area in 1975 (Appendix I). The unit-wide harvest increase of 11 rams reflects the dramatic increase in the Yentna River area; the remaining areas showed little change. Of the 18 hunters in the Yentna area 13 were residents. Almost 40 percent of the nonresident hunting pressure occurred in the Rainy Pass area.

Appendix II reveals hunting pressure trends in the Alaska Range west of Mt. McKinley Park. Portions of Game Management Units 9, 16, 17, and 19 are included in this area. An average of 162 hunters utilized this area annually from 1967 to 1975. The 1976 total of 269 hunters is the highest recorded for the western Alaska Range and is a 42 percent increase over last year. The 1976 harvest of 131 sheep is also a record high and is 32 percent above the 1975 harvest. Most of these increases can be attributed to a 52 percent increase in the number of resident hunters in 1975.

Composition and Productivity

No sheep population composition data were collected in Unit 16 during 1976.

Management Summary and Conclusions

The 1976 sheep harvest in Game Management Unit 16 is the second highest recorded since these data became available in 1962 and is 70 percent above the average harvest for the previous 13 years. Hunting pressure has shifted somewhat from the Rainy Pass area to the Yenta River area, which sustained a record harvest of 11 rams. The Kichatna River harvest of two is the same as it was in 1975, and the harvest of three in the Skwentna River area is slightly higher than the preceeding year.

Trend analyses indicate a steady increase in both harvest and hunting pressure in the western Alaska Range, particularly in the resident hunter group. The average number of hunting days per hunter (4.3 in 1976) has been decreasing slightly since the early 1970's. Mean horn length (34.17 in 1976) has remained constant and is consistently above the statewide average.

Recommendations

Aerial surveys should be conducted in those areas of Unit 16 which sustain sheep populations.

PREPARED BY:

Jack C. Didrickson and Kenton P. Taylor
Game Biologist III and Game Biologist II

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

Appendix I Sheep Harvest by IBM Coded Area in Alaska's Game Management
Unit 16, 1968 through 1976.

Area	Year								
	1968	1969	1970	1971	1972	1973	1974	1975	1976
Yentna River to 4th of July Creek	2	1	3	4	3	8	4	1	11
Skwentna River	0	0	0	0	0	1	10	1	3
Kichatna River	0	0	0	0	0	3	1	2	2
Rainy Pass, Rainy Pass Lodge Area	7	12	8	4	8	13	5	8	6
Alaska Range West within Unit 16	0	0	0	0	0	4	1	0	1
TOTALS	9	13	11	8	11	29	21	12	23

PREPARED BY: Kenton P. Taylor, Game Biologist II

Appendix II. Reported Kill of Dall Sheep Rams, Number of Hunters, and Success of Hunters for the Alaska Range West of McKinley Park, 1967 through 1976, as Derived from Harvest Reports.

Year	All Hunters*			Residents			Non-residents		
	Kill No.	Hunters	Success	Kill No.	Hunters	Success	Kill No.	Hunters	Success
1967	65	97	67%	27	47	57%	38	50	76%
1968	95	151	63%	52	99	53%	43	52	83%
1969	104	154	68%	53	93	57%	45	55	82%
1970	84	162	52%	34	80	43%	26	38	68%
1971	71	156	46%	28	80	35%	39	69	57%
1972	71	124	57%	32	68	47%	34	50	68%
1973	119	211	56%	53	112	47%	63	94	67%
1974	119	213	56%	43	110	39%	70	93	75%
1975	99	190	52%	43	122	35%	53	65	82%
1976	131	269	49%	72	185	39%	55	77	71%

* All Hunters category is higher than resident/non-resident added. This is due to inclusion of reports from hunters who did not note residency.

PREPARED BY: Kenton P. Taylor, Game Biologist II

SHEEP

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Unit 17 - Bristol Bay

Season and Bag Limit

Aug. 10-Sept. 20

One ram with 3/4 curl horn
or larger.

Harvests and Hunting Pressure

Harvest reports from 18 hunters (16 residents and two nonresidents) indicate that two rams were harvested in 1976 (Appendix I).

Composition and Productivity

No work was accomplished during this reporting period.

Management Summary and Conclusions

The harvest of sheep in GMU 17 has been at a low level since 1972 (Appendix I). This follows ten years of widely fluctuating harvests, but at no time has the unit produced a significant portion of the statewide harvest.

Recommendations

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

PREPARED BY:

Jim Faro
Game Biologist III

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

APPENDIX I

Reported Dall Sheep Ram Harvest for GMU 17, 1962 through 1976.

Year	Harvest	Year	Harvest
1962	9	1970	6
1963	1	1971	6
1964	12	1972	2
1965	11	1973	5
1966	9	1974	4
1967	7	1975	5
1968	17	1976	2
1969	9		

Prepared By: Jim Faro, Game Biologist, King Salmon, Alaska.

SHEEP

SURVEY-INVENTORY PROGRESS REPORT -1975 and 1976

Portions of Game Management Units 20 and 25, Alaska Range east of Mt. McKinley Park (except Delta and Tok Management Areas) and Tanana Hills-White Mountains

Seasons and Bag Limits

Units 20 and 25	Aug. 10-Sept. 20	One ram with 3/4 curl horn or larger
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Harvest and Hunting Pressure

During 1975 and 1976 the reported sheep harvest and hunting pressure (Table 1) in the central Alaska Range were essentially unchanged from 1974; in the Tanana Hills-White Mountains area both the harvest and the number of hunters had declined since 1974. Hunter success and average horn size of animals taken increased slightly from 1974 in the Alaska Range but declined considerably in the Tanana Hills-White Mountains. There were no significant changes in hunter residency or respective success rates in the latter area. However, 1976 data for the Alaska Range suggested increases in the number of resident hunters and in their rate of success. The majority of the hunting activity in Unit 20 has traditionally been by residents.

Table 1. Unit 20 sheep harvest statistics, 1975-1976.

Year	Hunters	Harvest	Percent success	Mean	% hunters		% harvest		% success	
				horn size	Res	Nonres	Res	Nonres	Res	Nonres
Central Alaska Range										
1975	217	97	45	32.3	77	18	60	36	35	92
1976	248	112	45	32.3	83	16	69	31	37	85
Tanana Hills-White Mountains										
1975	28	6	21	31.1	89	4	100	0	20	0
1976	35	8	23	31.0	94	3	75	13	18	100

Restrictions on the use of mechanized vehicles remained in effect in the Glacier Mountain Management Area during the 1975 and 1976 seasons. In addition, similar restrictions initiated for a portion of the central Alaska Range in 1976 were rescinded midway through the regulatory year by emergency regulation. In 1975, 13 percent of the hunters in the Alaska Range east of Mt. McKinley used offroad vehicles as primary

transportation for sheep hunting, and 46 percent used aircraft. These users were 31 and 54 percent successful, respectively, and together they accounted for 90 percent of the successful hunters.

Composition and Productivity

Information on productivity and survival was gathered at several mineral licks during June and July of 1975 and 1976 (Table 2). In the central Alaska Range 1,565 sheep were classified in 1975 and 2,278 in 1976. Overall productivity was 31 lambs per 100 ewes in 1975 and 34 lambs per 100 ewes in 1976. Recruitment was 24 yearlings per 100 ewes (1975) and 18 yearlings per 100 ewes (1976). Licks in the Tanana Hills-White Mountains area were not monitored in either year.

Table 2. Central Alaska Range lamb production and survival.

Mineral lick location	lambs per 100 ewes		yearlings per 100 ewes	
	1975	1976	1975	1976
McKinley Park	31	33	19	13
Louis Creek	18	27	6	27
Edgar Creek	40	20	30	20
Healy Creek	35	22	22	8
Dry Creek	28	36	23	16
Sugarloaf Mtn.	-	40	-	8
Dexter Creek	-	22	-	7
Mystic Creek	-	37	-	11
Copper Creek	-	36	-	9

The only aerial survey conducted in Unit 20A during this reporting period occurred in late July 1975 between the Wood River and the West Fork of the Little Delta River. This area surrounds the Dry Creek mineral lick. Results of this survey have been reported elsewhere (Heimer, 1976 Job Progress Report) and will only be summarized here. Among the 1,232 sheep classified, 8 percent were rams of legal size. These data reflect a decline in the sheep population of about 20 percent since 1970.

Management Summary

Hunting pressure and success have remained fairly stable in the central Alaska Range for the past three years but have declined in the White Mountains and Tanana Hills. As in the past, residents constituted the majority of the hunters. Offroad vehicles and aircraft were the favored means of transportation, but aircraft users were more successful.

Productivity in the Alaska Range appeared to have remained near the 5 year average of 30 lambs per 100 ewes. This low initial production seems to have resulted from low reproductive frequency (Heimer, 1976 Job

Progress Report). Despite relatively high lamb survival to age 1-year (65%), the present level of production is not sufficient to maintain the population; consequently, numbers have continued to decline about three percent annually.

The most recent aerial survey data indicated that legal rams constitute eight percent of the population in the central Alaska Range.

PREPARED BY:

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Game Technician IV

Mel Buchholtz
Game Biologist III

SUBMITTED BY:

Oliver E. Burris
Regional Management Coordinator

SHEEP

SURVEY-INVENTORY PROGRESS REPORT - 1975 and 1976

Game Management Units 23, 24, 25 and 26 - Brooks Range

Seasons and Bag Limits

Units 23, 24, 25 and 26	Aug. 10 - Sept. 20	One ram with 3/4 curl horn or larger
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Harvest and Hunting Pressure

Harvest statistics for the 1975 and 1976 sheep season in the Brooks Range are summarized below.

<u>Year</u>	<u>Harvest</u>	<u>Hunters</u>	<u>Percent Success</u>	<u>Mean Horn Size</u>	<u>Average Age</u>	<u>Percent Hunters</u>		<u>Percent Harvest</u>		<u>Percent Success</u>	
						<u>Non Res</u>	<u>res</u>	<u>Non Res</u>	<u>res</u>	<u>Non Res</u>	<u>res</u>
1975	175	296	59	34.0	8.2(n=36)	70	30	58	42	49	84
1976	186	361	52	34.5	7.4(n=32)	77	23	65	35	44	77

In 1973 the reported harvest and number of hunters totaled 242 and 405, respectively. Since 1973 both reported harvest and the number of hunters have declined. This may be attributed in part to the 10-day shorter hunting season in effect after 1973.

In 1968 hunting success (sheep harvested/number of hunters) was 72 percent, but since then there has been a slow, steady decline to 52 percent (1976). This decrease may be attributed primarily to two factors. There has been a steady increase (50% in 1967 to 77% in 1976) in the percentage of resident hunters in the Brooks Range. Resident hunters are traditionally less successful than nonresident hunters, and consequently the overall hunting success has decreased. A second factor contributing to the decline is a lowered success ratio among resident hunters. In 1972, 54 percent of the resident hunters were successful, but by 1976 this figure had decreased to 44 percent.

Average horn size of the harvested rams has remained stable at approximately 34.0 inches. Mean horn size of sheep harvested in the Brooks Range is greater than that computed for all other Alaska mountain ranges. As reported previously, this is significant because horn growth rates in this area are slow. Therefore, it is concluded that the Brooks Range harvest is from a relatively old, mature, and lightly exploited population. The high mean age of rams comprising the harvest supports this statement. It is expected that the average horn size and average age of rams harvested in the Brooks Range will begin to decrease within a few hunting seasons.

Analysis of the harvest data by unit did not reveal any significant shifts in hunting pressure from past years. Approximately 10 percent, 25 percent, 22 percent and 43 percent of the harvest is taken from Units 23, 24, 25 and 26, respectively.

Composition and Productivity

Composition and productivity information is not gathered on a regular basis in the Brooks Range. Aerial surveys to determine sheep abundance and distribution have been conducted in recent years. Data gathered during 1975 and 1976 are given below:

<u>Year</u>	<u>Area</u>	<u>Legal M</u>	<u>Sublegal M</u>	<u>Ewe</u>	<u>Lambs</u>	<u>Unid.</u>	<u>Total</u>
1975	North Fork Chandalar	76	108	284	76	0	544
1975	Headwaters Your Creek	31	18	80	23	2	154
			<u>Rams</u>				
1976	Hulahula River		404	810	168	364	1754
1976	Jago River		66	185	47	-	298
1976	Aichitik River		128	311	112	-	551
1976	Sadlerochit River & Mtns.		33	110	41	-	184

The 1975 surveys yielded lamb:ewe ratios of 27:100 for the North Fork and 29:100 for the headwaters of Your Creek. In 1976 surveys within the Arctic National Wildlife Range yielded lamb:ewe ratios averaging 26 lambs:100 ewes. These ratios, although low, are typical of the Brooks Range as indicated by previous years' surveys.

Management Recommendations

Knowledge of the Dall sheep resource in the Brooks Range, although expanding, is still limited. It is recommended that distribution and abundance surveys continue on an annual basis until all sheep habitat within the Brooks Range has been covered in a systematic manner. It is also recommended that trend count areas be established, and that sites be selected for monitoring productivity and survival information on an annual basis.

No changes in seasons or bag limits are recommended.

PREPARED BY:

Arthur C. Smith
Game Biologist II

SUBMITTED BY:

Oliver E. Burris
Regional Management Coordinator

ELK

SURVEY-INVENTORY PROGRESS REPORT - 1976

Game Management Unit 8 - Kodiak and Adjacent Islands

Seasons and Bag Limits

Unit 8, Raspberry Island and that portion of Afognak Island west and south of a line from the head of Malina Bay to the head of Back Bay.	To be announced	One elk by permit only, dates and conditions of the hunt to be described by commissioner's announcement.
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Remainder of Unit 8	Aug. 1-Dec. 31	One elk by permit only
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Harvest and Hunting Pressure

Hunters reported taking 14 male and 12 female elk during the general elk season (Appendix I). Twelve were taken from central Afognak Island herds of Duck Mountain and Kitoi Lakes. Five came from the Tonki herd in eastern Afognak. The remaining eight animals were from the Paramanof Bay-Paramanof Mountain area. The number of hunters who reported going into the field was the highest for several years (Appendix II). Hunter success was only 11 percent. October was the most productive month with 15 animals (57%) harvested; four animals were taken in August, three in September, one in November and three in December.

A season on the Raspberry Island and Raspberry Straits herds was held during November 3-17. Twenty either-sex permits were available for the Raspberry Straits hunt, but only eleven hunters reported going afield. One adult bull was taken on the first day of the season. Ten permits for branch-antlered bulls were available for the Raspberry Island hunt but only five hunters went afield. One bull was killed and not recovered and another was wounded during the two-week hunt.

Composition and Productivity

Sex and age composition counts were conducted during five flights in August and September. In 12 hours of survey time, 336 elk were classified (Appendix II). Total number of elk classified was less than in 1975, when 16.7 hours were spent surveying. Percentages of bulls, cows and calves were nearly the same as recorded in 1975. The 1976 calf/cow ratio of 33/100 is similar to the previous 9-year average.

Both the Raspberry Island and Raspberry straits herds had calf:cow ratios well above average. Twenty calves were observed in the Raspberry Straits herd for a 48:100 calf:cow ratio. There were thirteen calves in the Raspberry Island herd for a 41:100 calf:cow ratio.

Sport hunting mortality for 1976 was 28 animals, including one animal which was not recovered. Three adult pregnant cows were found shot illegally in June 1976 near Peril Cape, Afognak Island. Three mortalities due to malnutrition (two male calves and one adult male) were found in early April on Tolstoi Point and Portage Creek, Afognak Island. Total known mortality was 34 elk for 1976.

Management Summary and Recommendations

Elk hunting effort in 1976 increased over that recorded the previous year. Harvest did not increase proportionally. Elk are seldom accessible and hunting success remains low. Some loss to malnutrition occurred during the 1975-76 winter. An average overall calf crop was recorded in 1976. A decline in the elk population was not apparent, but winter loss probably arrested any significant increase in numbers. The Raspberry Island and Raspberry Straits herds may be increasing slightly. Consistently good calf production has occurred in these herds for three consecutive years.

A two-week limited participation hunt resulted in harvesting only two animals from the Raspberry Island-Raspberry Straits herds. This hunt should be held earlier in the fall in 1977 and the number of permits should be increased.

PREPARED BY:

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Game Biologist III

SUBMITTED BY:

John S. Vania
Regional Management Coordinator

APPENDIX I

Unit 8 - 1976 General Elk Season Harvest Statistics From Hunter Permit Reports

	<u>NO.</u>	<u>PERCENT</u>
Permits Issued	702	100%
Permits Returned *	674	96%
Reporting Permittees Who Hunted	239	35%
Successful Hunters	26	11%
Mean Days Hunted Per Elk	43	--
Total Days Afield	1110	--
Male Harvest	14	54%
Female Harvest	12	46%
Total Reported Harvest	26	100%

* After reminder letters and citations issued

PREPARED BY: Roger B. Smith, Game Biologist III

APPENDIX II

Unit 8 - General Elk Season Harvest Statistics, 1970-1976 From Hunter Permit Reports

Year	No. Hunters	Reported Harvest	Male Harvest	Female Harvest	Hunter Success	Season Length (days)
1970	184	62	43 (69%)	19 (31%)	34%	153
1971	190	27	15 (56%)	12 (44%)	14%	153
1972	112	18	9 (50%)	9 (50%)	16%	153
1973	116	18	8 (44%)	10 (56%)	16%	153
1974	118	30	16 (53%)	14 (47%)	25%	153
1975	123	23	7 (30%)	16 (70%)	19%	153
1976	239	26	14 (54%)	12 (46%)	11%	153

PREPARED BY: Roger B. Smith, Game Biologist III

APPENDIX III

Unit 8 - Elk Composition Counts 1967-1976

Date	Year	M	%	F	%	Calves	%	Calves 100/Cows	Total
8/0	1967	55	8%	522	73%	135	19%	25:100	712
8/0	1968	124	18%	432	62%	136	20%	31:100	692
---	1969	48	11%	288	65%	104	24%	36:100	408
8/0	1970	171	21%	467	57%	186	23%	40:100	824
8/0	1971	71	16%	277	64%	84	19%	30:100	432
8/19;9/13	1972	28	8%	239	67%	88	25%	37:100	355
8/0;9/0	1973	32	9%	250	69%	80	22%	32:100	362
8/9,8/16, 8/20,9/12,9/18	1974	44	11%	243	63%	99	26%	41:100	386
7/21,7/30,8/23 8/29,9/4, 9/12	1975	47	8%	383	69%	125	22%	33:100	555
8/11,8/12 8/22,9/6 9/10	1976	28	8%	228	68%	80	24%	35:100	336

PREPARED BY: Roger B. Smith, Game Biologist III

PTARMIGAN

SURVEY-INVENTORY PROGRESS REPORT

Game Management Unit 20 - Fairbanks, Central Tanana Valley

Period Covered: January 1, 1976 - June 30, 1977

Seasons and Bag Limits

Unit 20	Aug. 10 - Apr. 30	20 per day 40 in possession
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Harvest and Hunting Pressure

No systems were in operation to determine harvest or hunting pressure in Unit 20 during this reporting period.

Abundance, Composition and Productivity

Annual censuses of breeding rock ptarmigan on the 15 square mile (39km²) study area at Eagle Summit were conducted during the periods May 17-21 and May 17-19, 1976 and 1977, respectively. The 1976 counts revealed only 30 territorial males in the area. This represented a slight decline in breeding numbers from that recorded during 1975 (34 males), and marked the lowest breeding population on record for the Eagle Summit area. On May 26, 1976 a count was made on the Ptarmigan Creek area near Eagle Summit, where very little, if any, spring hunting occurs. Only seven territorial males were found on this area. This marked an unprecedented low breeding density at Ptarmigan Creek. Reports from Department biologists working elsewhere in the Tanana Hills indicated scarcity of ptarmigan during 1976. Similarly, results from the 1976 small game abundance questionnaire suggested that, throughout the Interior, rock ptarmigan densities were low, but little changed from those of 1975.

Fall abundance was not determined at Eagle Creek, but reports from reliable sources indicated that ptarmigan were very scarce there during the autumn of 1976.

The 1977 spring counts revealed 36 territorial males at Eagle Summit. This represented a slight increase from the low recorded the previous year. Nevertheless, numbers remained well below those recorded for the 1960's.

Fall counts were not conducted in 1976.

Management Summary and Recommendations

Ptarmigan populations are known to undergo marked fluctuations in abundance throughout interior Alaska. While breeding populations at

Eagle Summit have fluctuated considerably since annual surveys were commenced in 1959, the 1976 population was the lowest on record. Even though numbers increased slightly in 1977 the density remained very low. During previous years of low abundance approximately twice as many ptarmigan comprised the Eagle Summit breeding population as were recorded there during spring 1976 and 1977. Information from other sources suggested that ptarmigan numbers were low throughout the Interior during 1976 and 1977.

The factors responsible for population fluctuations are unknown. Abundance was low both at Eagle Summit where spring and fall hunting occurred and at Ptarmigan Creek where virtually no hunting of any sort occurred. Hence, it appeared that hunting was not a major factor responsible for the low breeding density at Eagle Summit. Nevertheless, spring hunting, under certain conditions, has been shown to reduce rock ptarmigan breeding populations during the succeeding summer (McGowan 1975). This, plus the fact that hunting pressure is thought to be increasing, suggests that shortening of the season is desirable. Therefore, it is recommended that the ptarmigan season be closed after March 1 in areas where breeding populations are readily available in the spring. Such areas include Eagle and Twelvemile Summits (Steese Highway), Isabella Pass (Richardson Highway), Broad Pass (Parks Highway) and Mt. Fairplay, Polly Summit and American Summit (Taylor Highway).

Literature Cited

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SPRUCE GROUSE

SURVEY-INVENTORY PROGRESS REPORT

Game Management Unit 20 - Central Tanana Valley

Period Covered: January 1, 1976 - June 30, 1977

Seasons and Bag Limits

Unit 20	Aug. 10 20	15 per day 30 in possession
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Harvest and Hunting Pressure

No systems were in operation to determine the harvest or hunting pressure in Unit 20 during the 1976-77 season.

Abundance, Composition and Productivity

Spruce grouse road counts were made on the standard route along the Steese Highway during the period September 16-22, 1976. Results of these counts are summarized below:

Location	Number of valid counts	Range in number of grouse observed per count	Average number of grouse observed per mile driven
Steese (Central airstrip to Mile 147)	4	3-23	0.79

During the 1976 survey an average of 15 grouse were observed along the 19 mile route during each morning count. The counts indicated that spruce grouse populations were the highest in this area since the period 1966-68. These findings are in agreement with results from the 1976 small game abundance questionnaire where, on the average, cooperators indicated that spruce grouse throughout interior Alaska had undergone a marked increase in abundance since 1975.

Management Summary and Recommendations

No changes in seasons or bag limits are recommended.

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UPLAND GAME ABUNDANCE
SURVEY-INVENTORY PROGRESS REPORT

Statewide

Period Covered: January 1, 1976 - June 30, 1977

Techniques

The standard small game abundance questionnaire was mailed in mid-October 1976 to 260 people throughout the state, and by the end of January 1976 about 133 replies had been received. As in the past, the bulk of replies came from the Interior and Gulf regions. Replies were tabulated and analyzed as in previous years (see Game Bird Report, Vol. 5, 1965, pp. 2 and 3). A summary of responses was mailed to cooperators in March 1977. Replies to the questionnaire are summarized in Appendix A.

Findings

Grouse

Replies to the 1976 questionnaire indicated that the grouse populations were at moderate levels in the southeast and the western part of the state, but suggested generally low numbers statewide. Ruffed grouse populations were reported at moderate levels in the Interior but at low levels elsewhere. Spruce grouse were reported at moderately low levels in most areas and sharp-tailed grouse were reported to be low.

Most respondents from throughout the state felt that all species of grouse had increased in numbers compared to 1975. Spruce grouse, especially, were thought to have increased in the Gulf, Alaska Peninsula and Interior regions. Ruffed and sharp-tailed grouse were also reported to have increased in the Interior.

Ptarmigan

In general, ptarmigan populations were reported to be moderately low throughout the state. Cooperators felt that ptarmigan abundance was little changed from that of 1975. However, respondents in the western part of the state reported moderately high ptarmigan populations. Locally high populations of willow ptarmigan were reported in the Brooks Range. Ptarmigan populations appeared to have improved in the western, southeastern and Gulf regions of the state but elsewhere they were thought to have remained much the same as in 1975.

Hare

Snowshoe hare populations were generally thought to be low throughout the state, with little change from 1975. However, responses from western Alaska indicated moderately high hare populations, with an increase since last year. Snowshoe hare populations were reported at moderate levels with no change in the southeast. The only area reporting a decline in hare populations was the Gulf region. Hare populations should begin an upward trend in most areas within the next year or two.

Management Summary and Conclusions

The standard small game questionnaire has, over the years, indicated that grouse, ptarmigan and hare populations fluctuate considerably throughout the state, and it is felt that present hunting pressure has little effect on such fluctuations. No change in seasons or bag limits is recommended at this time.

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Appendix A. Continued.

Area and Species	Present Abundance				Comparison with 1975			
	High	Mod.	Low	Index	More	Same	Fewer	Index
Statewide (133)								
Grouse (general)	12	35	40	3.7	39	23	9	6.7
Ruffed Grouse	2	17	23	3.0	24	13	4	7.0
Spruce Grouse	6	41	39	3.5	51	25	9	7.0
Sharptail Grouse	0	6	24	2.8	11	15	4	3.7
Blue Grouse	1	6	2	5.6	2	5	2	5.0
Ptarmigan (general)	8	36	51	3.2	24	48	18	5.3
Rock Ptarmigan	2	19	27	2.9	12	28	4	5.7
Willow Ptarmigan	8	26	31	3.6	17	32	12	5.3
Whitetail Ptarmigan	1	1	14	1.8	1	11	4	4.3
Snowshoe Hare	7	17	89	2.1	27	53	28	5.0

Appendix A. Summary of replies to questionnaire on grouse, ptarmigan and hare populations, 1976.

Area and Species	Present Abundance				Comparison with 1975			
	High	Mod.	Low	Index	More	Same	Fewer	Index
Brooks Range (8)								
Spruce Grouse	0	0	3	1.0	0	1	2	2.3
Ptarmigan (general)	1	3	2	4.2	1	4	0	5.8
Rock Ptarmigan	1	4	0	5.0	1	3	0	4.8
Willow Ptarmigan	3	1	0	8.0	3	0	0	9.0
Snowshoe Hare	0	0	4	1.0	1	2	1	5.0
Western (9)								
Grouse (general)	0	2	1	3.7	1	1	0	7.0
Spruce Grouse	0	2	1	3.7	0	4	0	5.0
Ptarmigan (general)	4	5	0	6.8	4	4	0	7.0
Willow Ptarmigan	3	3	1	6.2	1	2	3	3.5
Snowshoe Hare	4	2	1	6.6	5	1	1	7.3
Alaska Peninsula (12)								
Spruce Grouse	1	2	1	5.0	2	2	0	7.0
Ptarmigan (general)	0	6	2	4.0	2	3	2	5.0
Rock Ptarmigan	0	3	2	3.4	1	2	1	5.0
Willow Ptarmigan	1	6	0	5.6	1	5	0	5.7
Snowshoe Hare	0	4	4	3.0	1	3	3	3.9
Kodiak (1)								
Ptarmigan (general)						1		
Snowshoe Hare							1	
Southeastern (13)								
Grouse (general)	1	2	0	6.3	2	1	0	7.7
Blue Grouse	1	6	2	4.6	2	5	2	5.0
Ptarmigan (general)	2	4	1	5.6	3	4	0	6.7
Snowshoe Hare	2	3	1	5.7	2	3	1	5.7
Gulf (46)								
Grouse (general)	2	10	17	2.9	14	9	5	6.3
Ruffed Grouse	0	0	6	1.0	0	4	1	4.2
Spruce Grouse	4	15	18	3.5	24	10	3	7.3
Sharptail Grouse	0	0	8	1.0	0	5	3	3.5
Ptarmigan (general)	0	8	24	2.0	8	18	6	5.3
Rock Ptarmigan	0	8	8	3.0	7	8	1	6.5
Willow Ptarmigan	0	10	16	2.5	8	14	4	5.6
Whitetail Ptarmigan	0	1	6	1.6	1	4	2	3.3
Snowshoe Hare	0	4	41	1.4	4	25	15	4.0
Interior (44)								
Grouse (general)	1	20	18	2.5	22	11	2	7.3
Ruffed Grouse	1	17	17	4.0	24	7	3	7.5
Spruce Grouse	1	22	15	2.7	25	8	3	7.4
Sharptail Grouse	0	5	15	2.0	8	9	1	6.6
Ptarmigan (general)	1	9	21	2.4	6	14	9	4.6
Rock Ptarmigan	0	3	15	1.7	2	13	2	5.0
Willow Ptarmigan	1	5	14	2.0	4	10	5	4.8
Whitetail Ptarmigan	0	0	8	1.0	0	6	2	4.0
Snowshoe Hare	1	4	37	1.6	14	19	6	5.8